

More Than 1s and 0s:
An Analysis of the State of the Labor Movement
in the Tech Industry

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TC 660H
Plan II Honors Program
The University of Texas at Austin

May 12, 2021

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Abstract

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Over the last 40-50 years, economic inequality in the United States has dramatically increased at the same time as union density has fallen precipitously. During this period, the high tech industry has seen explosive growth, giving us some of the most valuable companies in the world as well as several of the richest people in the world. This explosive economic growth in recent decades has fueled the trend of growing inequality in this country, as the drivers, delivery people, and warehouse workers that make the “gig” economy function struggle to get by. In recent years, there have been signs of workers starting to organize for better conditions for all, both those creating the technology itself and those working “gigs”.

This paper seeks to analyze this growing trend of worker actions in the tech industry. First, what is actually happening, and how often? Why is it happening, and how? What is making these actions successful or not? Finally, I will examine the growing prevalence of unions among tech workers, and what all of this could mean for the future of the industry. Through all of this, I hope to produce a fuller and more complete understanding of what is actually happening with workers in the tech industry. Through my findings, I will lay out why working in the tech industry is becoming more precarious and insecure, and how workers are increasingly organizing with their coworkers to change these conditions.

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Chapter 1: Introduction

The last half century has seen explosive growth in the high-tech industry here in the United States. Of the 10 most valuable publicly traded companies in the world, regardless of industry, five are major tech companies in the United States - Microsoft, Apple, Amazon, Google, and Facebook.¹ While the tech industry has seen this impressive growth, particularly in the last 10-20 years, what has been seemingly missing from it compared to other sectors of the economy has been any kind of labor activity. In recent years, however, it appears as if this is no longer the case: workers in the tech industry of all roles, salaries, and socioeconomic statuses are collectively taking action to enact change in their workplace, whether it be for better wages, benefits, or control over their own labor.

This increased labor activity comes at a particularly significant historical moment. First, union density nationally is at one of the lowest points in decades. According to the Bureau of Labor Statistics, the percent of workers in a union today, about 10.3%, is about half of what it was in 1983.² Even that is lower than the peak of about 33% following World War II as modeled by the Economic Policy Institute (EPI).³ In the tech industry specifically, unions have been next to nonexistent.

At the same time, as EPI also shows, the share of income going to the top 10% of earners has increased dramatically over the last 40 years. As of 2018, there were over 140 billionaires globally in the tech industry, with more than 75 coming out of Silicon Valley.⁴ This coincides with a dramatic increase in “gig” and contracted work that so many tech companies, from Uber to Amazon to Google, rely on to make money (or in Uber’s case, to lose less money). These workers often have less legal protections in the workplace, get fewer guaranteed benefits compared to regular employees, and struggle to receive quality and consistent pay.

Another important consideration is the power these companies are able to amass and exert. One example of this is the recent campaign in California to classify “app-based drivers” as independent contractors instead of as employees as required by the California Legislature starting at the beginning of 2020. Companies like Uber, Lyft, and Doordash combined to spend over \$200 million in favor of a ballot proposition to accomplish this, while the opposition raised only about \$15 million. An order of magnitude of spending differences combined with a relatively unorganized opposition led to Proposition 22 passing convincingly in California in November, 2020, and workers losing the protections given to them by the Legislature.⁵

Since these companies have become so powerful, arguably too powerful, the discussion then becomes what to do about it. Across the political spectrum, from conservatives like Donald Trump and Josh Hawley, to more left-wing voices like Elizabeth Warren and Bernie Sanders, there have been calls to “break up” big tech using anti-monopoly laws, albeit for different political and ideological reasons. This approach, while certainly worth considering and pursuing, inherently says little about the fundamental relationship between workers and management in the tech industry. The main avenue for changing this relationship that improves working conditions and dynamics of power is through collective action by workers in the workplace.

The aim of this thesis is to evaluate the state of the labor movement in the tech industry. Has there really been a significant increase in labor actions in the tech industry in recent years? Why is this happening? What tactics do these actions use? For instance, are they physical or virtual protests, open letters, strikes, or attempts at unionization? And how successful are these different types of actions at winning the demands made by the organizers of a given action? If they are not successful, what is preventing them from being successful? If they are successful, how can that be replicated by other workers in the tech industry. Through all of these questions, I

hope to be able to say what is effective for workers in the tech industry to gain better working conditions and ultimately more power in the workplace.

Chapter 2: Data Analysis

In doing research for this project, I found an extremely useful public database (<https://data.collectiveaction.tech/>) that attempts to catalog and record collective actions taken by workers in the tech industry as far back as 1970. Obviously, it is a living, growing database maintained and contributed to by human beings, so it is unlikely that every collective action ever undertaken by tech workers is documented. That being said, it is by far the most comprehensive and ambitious attempt to organize such actions into one single public place.

Based on about 230 total actions in the US through 2020, important data points for a given action within this database include the date, tactic, company targeted, and category of demand(s) (pay, working conditions, ethics, etc). In addition to this, I went through each individual action and added data about the number of demands the workers of an action were making, how many of the demands they actually won at any point after the action took place, and what type of workers were making these demands (I made this delineation based on relation to the creation of the technology -- i.e. those that write software like engineers vs those that interact with that software or support software workers; of course, there is incredible amounts of nuance within these categories themselves, such as contracted software engineers, which happen to make up over half of Google's workforce as of 2019⁶). Below are some of my findings from this data:

Number of Actions per Year

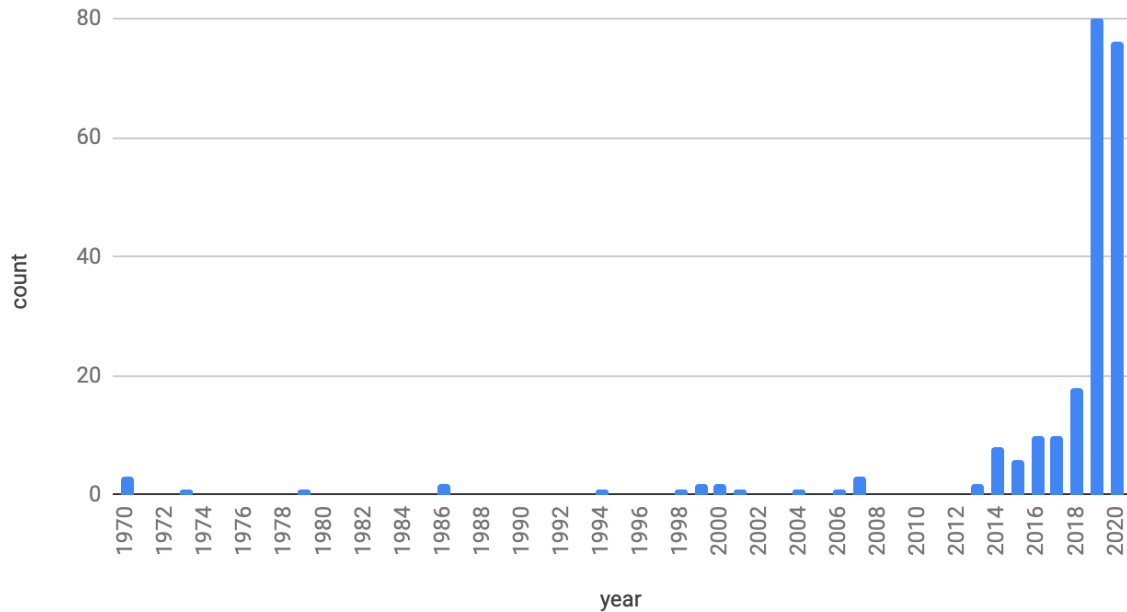


Figure 2.1

Figure 2.1 above shows how many actions there have been each year between 1970 and 2020. As this graph shows, up until about 2014, there is hardly more than a handful of actions in a given year. Starting in 2014, a small uptick can be observed, which starts to increase substantially in 2018 followed by a four-fold increase in 2019.

At a more granular level, Figure 2.2 shows how many actions have been taken each month since January of 2011. Similarly to the graph above, the number of monthly actions starts to increase moderately in about the middle of 2018 and even more so in 2019. Notably from this chart, the single month with the most collective actions recorded was March of 2020, the month that the COVID-19 pandemic really began to take hold in the United States. Presumably, this was most likely a result of workers feeling unsafe in their workplaces and demanding protections so that they would not become infected on the job.

Number of Actions per Month since 2011

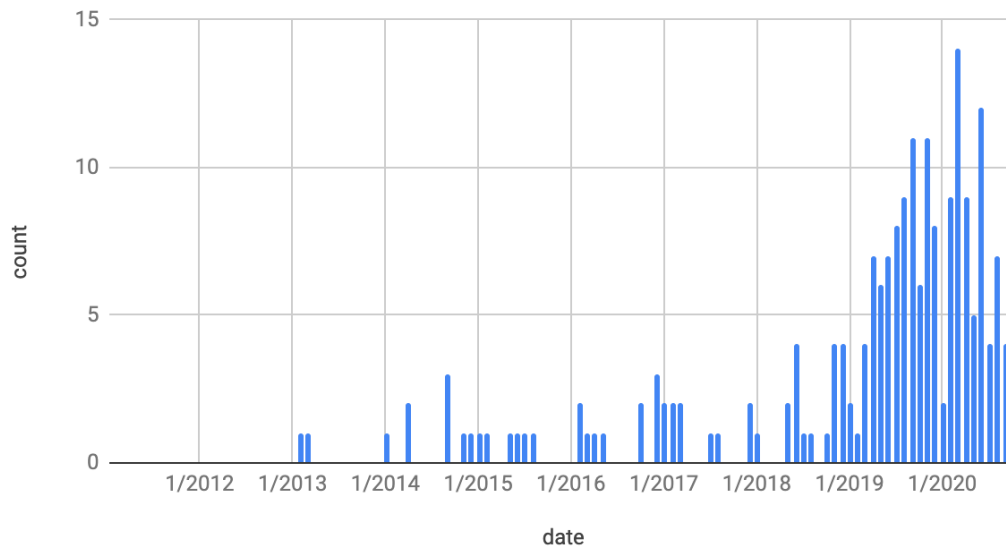


Figure 2.2

Overall, Figures 2.1 and 2.2 appear to be showing that according to the data used, the overall number of collective actions in the tech industry has been increasing since around the middle of 2018.

Of course, all of these actions are not the same. One important difference among them is often how workers go about winning the demands they seek. As shown in Figure 2.3, protests, open letters, and strikes are by far the most popular tactic used, making up almost three quarters of all actions in the database. Attempts at unionization among tech workers make up about half of the remaining actions, followed by lawsuits, the development of resources to share with coworkers (i.e., sharing salaries, stories of discrimination, etc.), and boycotts.

Delving further into the success of different tactics, Figure 2.4 demonstrates this based on two similar but slightly different metrics. First, the average proportion of demands won for each action employing that tactic, and second the proportion of demands won for all actions employing that tactic.

total actions

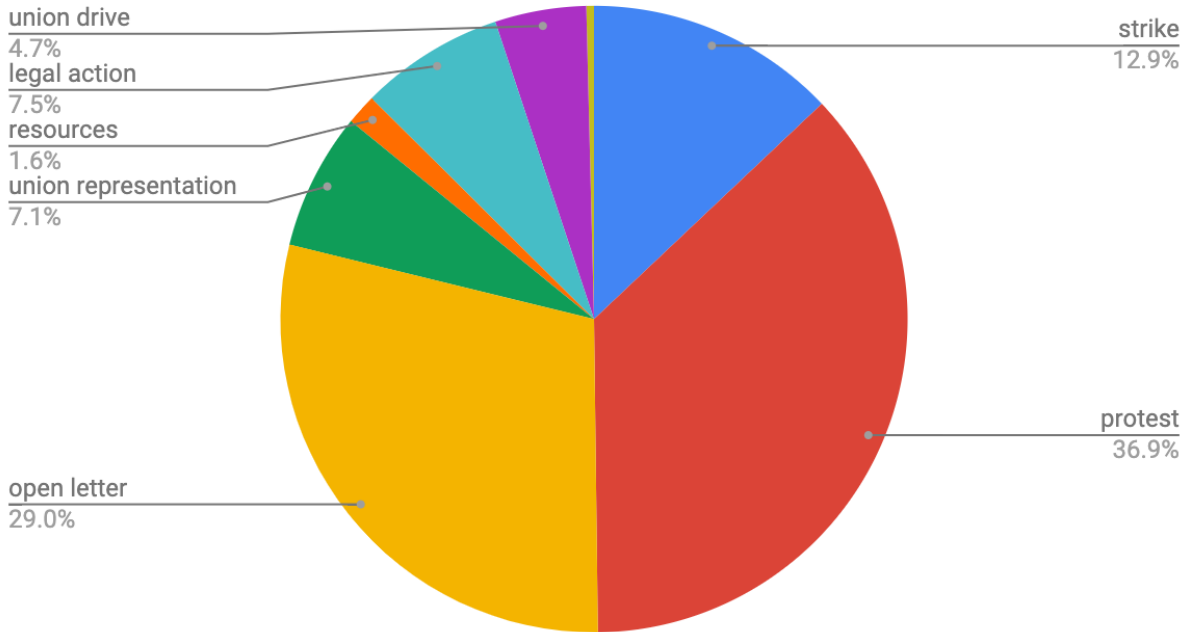


Figure 2.3

average proportion of demands won per action and total proportion of demands won per tactic

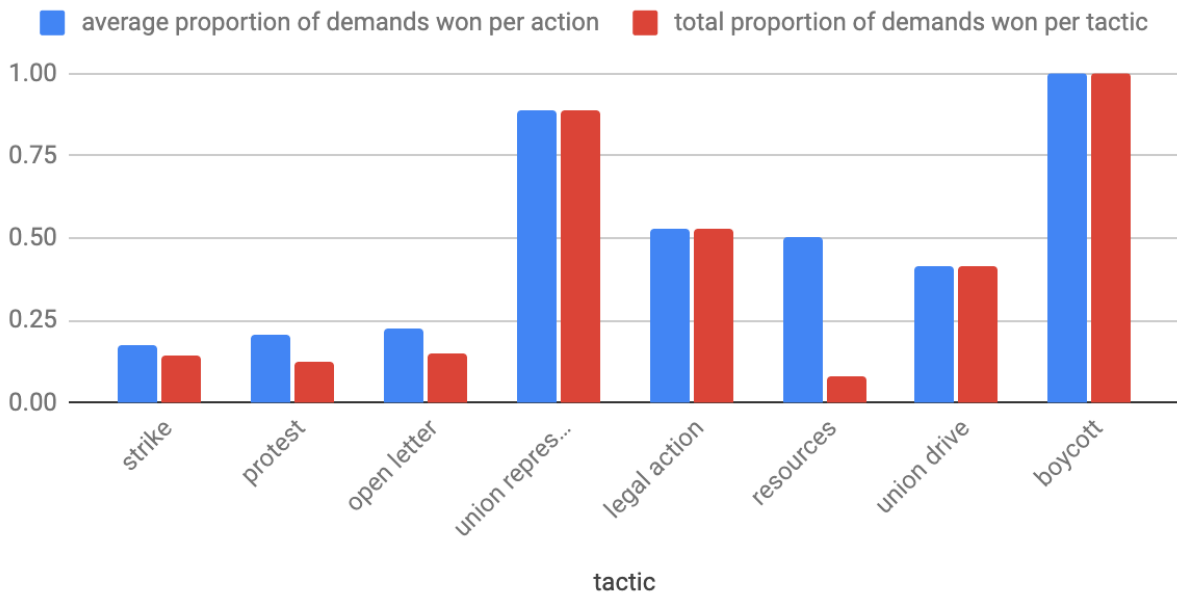


Figure 2.4

From Figures 2.3 and 2.4 and the nature of the data itself, the most interesting categories of tactics to me appear to be strikes, protests, and open letters. This is not to say that any of the other tactics are not at all worthwhile (personally, I think unionization is certainly worth investigating further, as I will do in Chapter 7). Boycotts and resources simply do not have enough data (1 and 4 examples respectively) to draw substantial conclusions from, and lawsuits of these kinds usually result in cash settlements that do little to change the underlying grievances that caused them in the first place. When it comes to union representation and union drives, the demand being made is whether to form a union, and while that may lead to concessions later on in the collective bargaining process, that itself is not necessarily a demand won from management. Open letters, protests, and strikes, on the other hand, are more direct forms of actions in which workers attempt to extract concessions from management.

Percent of actions by tactic and type of worker

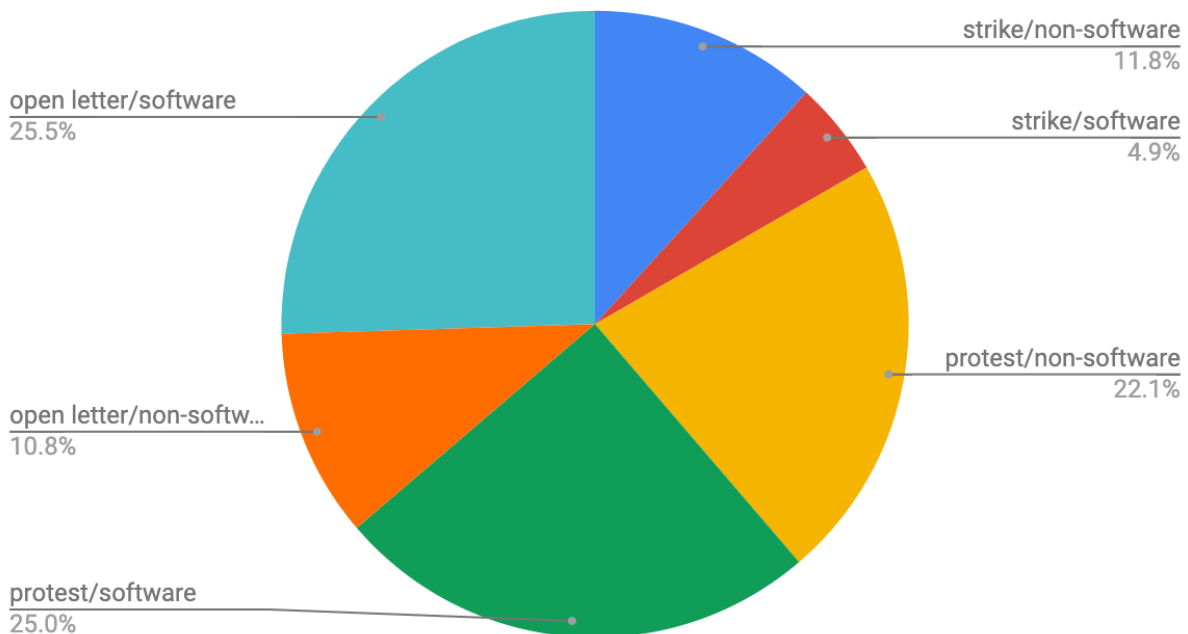


Figure 2.5

Figure 2.5 shows the breakdown of these three categories of tactics based on what kind of workers are performing the action: software or non-software workers. As it shows, software and non-software workers engage in protest at roughly the same rate. When it comes to open letters and strikes, however, the two groups of workers differ substantially. Software workers pen over twice as many open letters as non-software workers, while non-software workers engage in strikes at almost 2.5 times the rate of software workers.

Percent of actions making a given type of demand

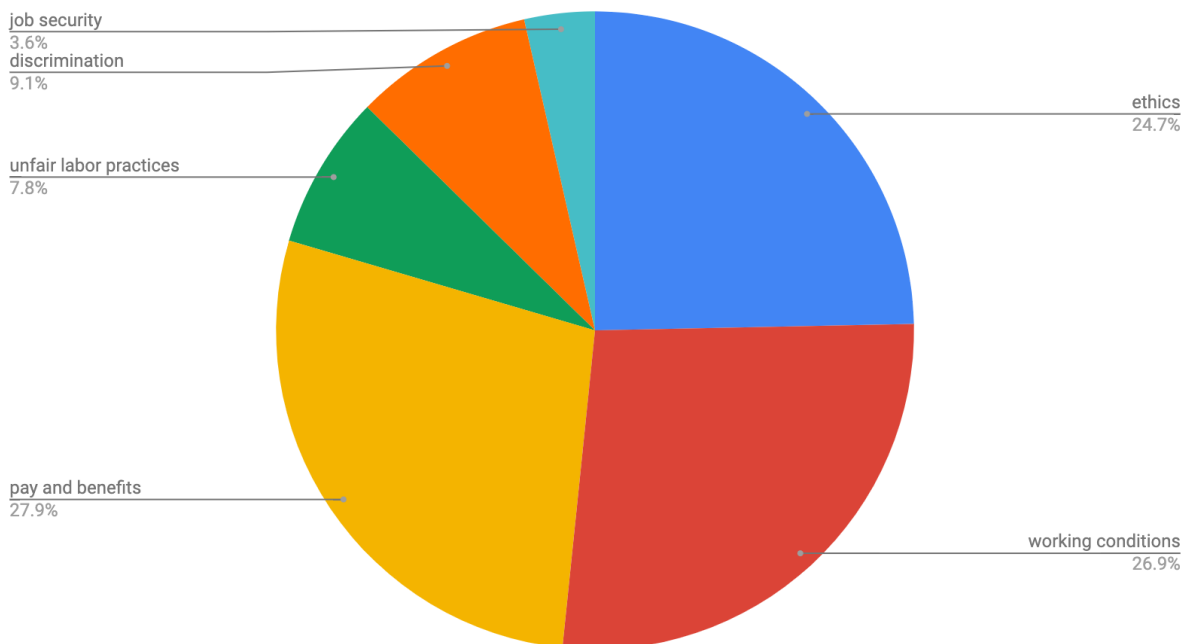


Figure 2.6

Another important dynamic at play here is what is actually being demanded by the workers when they take collective action. As shown in Figure 2.6, workers are overwhelmingly demanding changes in pay and benefits, working conditions, and the decision making process (i.e., ethics) of their respective company. An example of what a demand around working conditions looks like is when Amazon warehouse workers around the country engaged in a sickout in April, 2020 to protest inadequate guarantee of personal protective equipment from the

company in the midst of the COVID-19 pandemic. With regards to actions centered on ethics, one such example was workers at Microsoft demanding that Github, a subsidiary of Microsoft, stop doing business with Immigrations and Customs Enforcement. Collectively, pay, working conditions, and ethics make up about three quarters of all demands made, with discrimination, job security, and unfair labor practices making up the rest.

Average Proportion of Demands Won per Action and Total Proportion of Demands Won per Demand Type

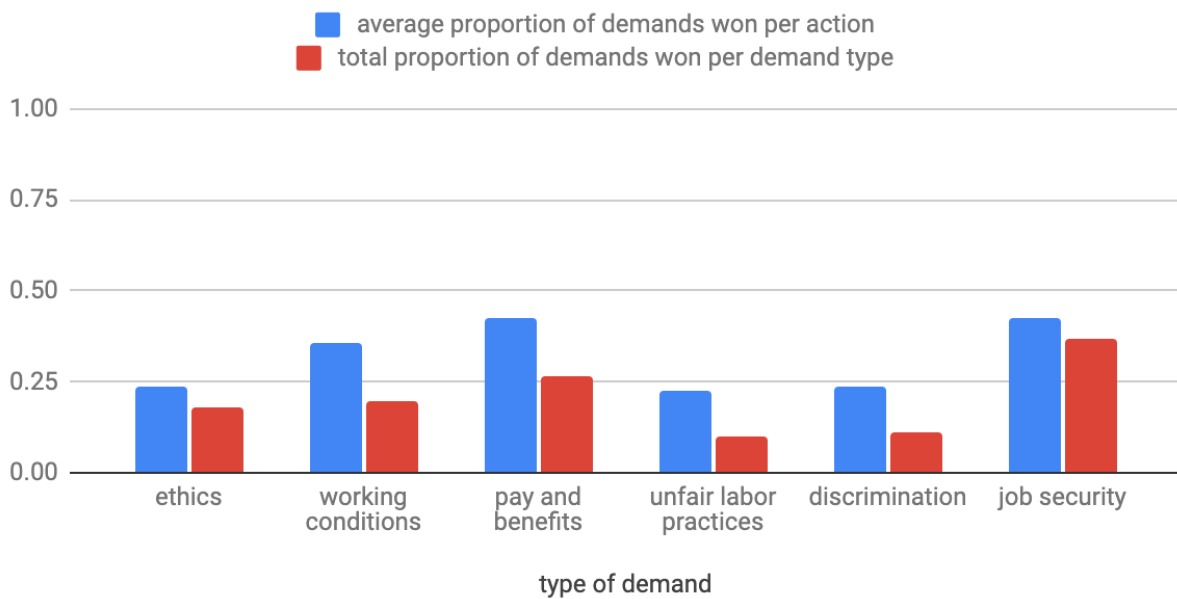


Figure 2.7

It is also important to consider how successful workers actually have been at winning these different kinds of demands, as Figure 2.7 demonstrates. Workers appear to be very successful at winning demands around job security, like when Amazon warehouse workers successfully petitioned to have two workers, believed to have been fired unfairly, reinstated, but as shown in Figure 2.6, this is very likely because there just are not that many actions centered around job security. The bulk of actions focus on pay and benefits, ethics, and working

conditions, and the chart above shows how workers are most successful when focused on pay and benefits, at about twice the rate on average compared to ethics.

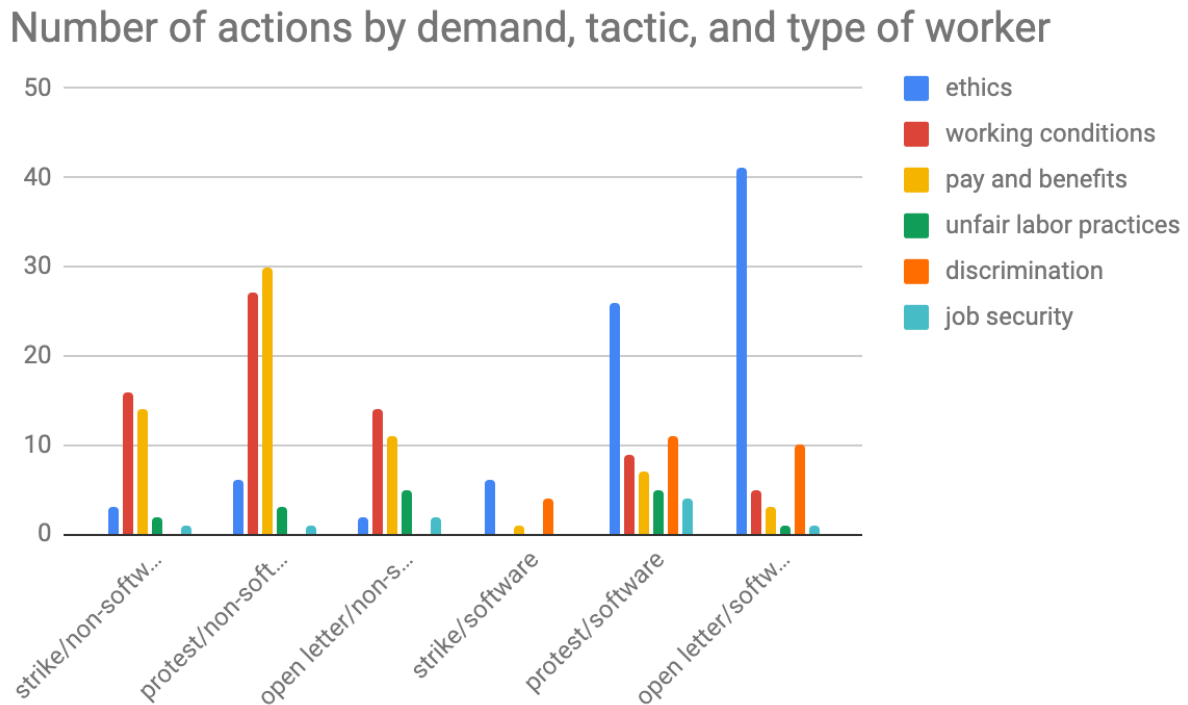


Figure 2.8

Breaking the types of demands down by the tactics used and types of workers as shown in Figure 2.8 (non-software workers on the left half, software workers on the right) leads to several interesting observations. First and foremost are the wide disparities, most notably in the demands centered around ethics. Software workers are making these kinds of demands far more than their non-software counterparts, and the primary tactic used by software workers in these kinds of actions is overwhelmingly through an open letter. Although software workers engage in protests and open letters at about the same rate as shown in Figure 2.5, protests in comparison to letters are focused less on ethics and slightly more so on working conditions, pay and benefits, unfair labor practices, and job security. Another interesting point from Figure 2.8 is around discrimination. Non-software workers are by and large not making demands centered around

discrimination, while it is the second most popular focus of actions by software workers. Instead, non-software workers are primarily making demands around working conditions, pay, and benefits at about an equal rate and distributed evenly across tactics.

Average Proportion of Demands Won per Action by Demand, Tactic, and Type of Worker



Figure 2.9

Figure 2.9 above shows how successful non-software and software workers employing strikes, protests, and open letters are at winning their demands (values of zero are denoted as negative for clarity). As shown, non-software workers are most successful in strikes and protests focused on working conditions, pay, and benefits, and considerably less so through open letters or when focused on ethics (the latter of which there is not much data). Software workers are notably the most successful through open letters as well as when focused on ethics. Interestingly, protests appear very unsuccessful for software workers in comparison to non-software workers, of which there is a relatively equal and decently sized amount of data for both. Regrettably, there

is not enough information about strikes from software workers to make meaningful conclusions on their efficacy.

Chapter 3: Framework

When considering a given action, it is necessary to be able to evaluate its factors and circumstances in order to determine why the action ended with the given results that it did. While it does little to change past actions, amassing a framework for how workers can be more successful in winning their demands can serve as a kind of roadmap for how someone can predict whether a future action is worth undertaking or not. In this section, I will lay out what I believe are the factors that can best help make this determination, as well as how to evaluate different levels of success. Additionally, I have ordered the factors based on their relative importance.

Factor 1: Cost of Implementing the Demands

The first and arguably most important factor worth considering for the success of an action is the cost on the company's part to implement the demands. At the heart of this is the question of whether the demands made by the workers impair the company from being able to make as much or very nearly as much profit as before the action. On its own, an action that significantly impacts the bottom line for the company is probably highly unlikely to be successful. An example of this could be Uber drivers trying to change how the company classifies its workers. Uber classifies a large portion of its drivers as independent contractors instead of full employees. They do this because employees tend to cost a lot more money than independent contractors in terms of healthcare, wages, and sick leave. With the number of drivers they employ in the millions⁷, a change of this type would have astronomical costs for Uber, a company that already loses money every year. Therefore, they would be highly unlikely to make this change. That isn't to say it would be impossible to win a demand that drastically

affects the company's bottom line, it would simply have to be in concert with the other factors examined later on.

The other side of this question is demands that do not significantly prevent the company from making as much of a profit. Considering another example with Uber drivers, this could look like Uber drivers demanding the company provide personal protective equipment (PPE) to drivers or add more guidance and advice for customers about health protocols amid the pandemic. Obviously, these types of demands have nowhere near the impact on Uber cost wise as the previous example of misclassification did. Uber can very easily afford to pay somewhere in the millions of dollars (not billions potentially) to settle this grievance and make the issue go away. This does not mean that any action that has little effect on the company's bottom line, no matter the other circumstances, is guaranteed to succeed. Similarly to actions with more costly demands, other factors laid out below are important as well. The difference is that with more costly actions, all or nearly all of the other factors might be crucial in having a chance of being successful, but with less costly actions, you may only need one or two.

Factor 2: Cost of the Action

The next factor worth considering has to do with the cost to the company of the actual action itself. Specifically, is the action (or potentially similar ones in the future) more costly than simply acceding to demands. The main way this generally manifests is in the tactic employed by the workers. Protests and open letters, for instance, are not likely to directly cause significant economic costs for the employer. They could, potentially, indirectly produce costs through things like negative media coverage (to be discussed later) and changes on public perception. As a result customers might be less likely to do business with that company, especially given a high

volume of public worker discontent. While these things might have a significant effect, the impacts are harder to measure and, as stated, less direct.

Strikes, on the other hand, have the potential to be much more costly. This is because they inherently entail a work stoppage, which means production is halted and the company therefore loses money. In theory, if all of the Uber drivers in New York City went on strike for a day, it would be very costly for Uber; for a week or longer, even more. This cumulative cost is what compels the company to implement the requested demands. An example of a possible costly strike outside of the tech industry is detailed in an article about the International Longshore and Warehouse Union (ILWU).⁸ As the article notes, a 5-day strike would decrease the gross domestic product of the United States by \$2 billion daily for each day the strike goes on. If it were to extend to 20 days, it would cost \$2.5 billion daily.

Of course, this factor alone is not guaranteed to bring success. The cost of implementing the demands, as described earlier, is also important. A company is hardly incentivized to give in to a costly action if the cost of making the demanded changes would cost so much more. Other factors to be described, such as how many workers are participating and the media coverage it garners, can also be highly influential in determining the ultimate outcome.

Factor 3: Proportion of Workers Participating in the Action

A third factor for determining how successful a given action might be has to do with how many workers are participating in it. In theory, the more workers participating, the more forceful the action becomes. Take an open letter for instance. Having just a few workers or a very small percentage sign on has nowhere near the impact that having a majority, a supermajority, or even close to all workers would have. This principle should apply similarly to strikes and protests. For

a strike, if just a single worker were to stop working, it is probably fairly likely they would be fired. The more workers participating, the less they are easily able to fire every person. Of course, even having a majority is often difficult, and success can surely be reached at a smaller level.

It is worth mentioning the issues of scale and organizing here. There are some tech companies that do not employ that many people, say less than 100. It is not extraordinarily difficult, especially in a setting where everyone is in the same office, to organize enough people to reach the level that would have a significant impact for an action. But, of course, not all tech companies are so small. Many large and influential tech companies employ hundreds of thousands of people, and many without the same prestige have offices spread around the world. This makes it significantly more difficult to reach higher proportions of workers and convince them to take part in the action. Furthermore, while many Amazon warehouse workers may work shoulder to shoulder with their colleagues, app based workers for companies like Uber, Instacart, and Lyft share no common “workplace,” and thus have a more difficult time connecting with fellow drivers to reach higher proportions of workers. And during the pandemic, most people who regularly would work in offices have transitioned to working from home, leaving them less opportunity to interact with coworkers. All of these things are problems for workers to overcome in order to engage in actions that have a high proportion of workers participating.

One possibility for overcoming this is a union, as will be discussed later on. Unions in theory provide the infrastructure for workers to collectively take an action. Of course, there are very few unions in the tech industry, although this is slowly changing.² To form a union, however, is a similar organizing problem as a given action, since a majority of workers are required to vote in favor.

As with all factors, there is no guarantee that the number of workers participating in an action will ensure its success, but an action is far more likely to be successful if that proportion of workers is higher than not.

Factor 4: Media

A final factor worth considering in determining what makes a successful action is media coverage. Companies do not want bad publicity. Amazon, for instance, generated several days of embarrassing news coverage about their workers having to pee in bottles amidst a highly contested unionization vote in Bessemer, Alabama in March, 2021¹⁰, something they ultimately had to apologize for denying.¹¹ Needless to say, a company like Amazon does not want to be under such intense scrutiny for how their workers are treated on the job. This works to garner sympathy for the workers, increase disapproval of the company, and build public pressure for them to change their practices in order for the negative coverage to go away.

While the Amazon story was in response to statements by elected officials, a similar principle can be applied to actions taken by workers. Through the action taken to change their conditions and the accompanying news coverage that portrays these conditions, companies can be shamed and made to look bad in order to convince them to change their ways.

There is another side to news coverage: that which makes the company look good. If a company wants to be at the forefront on an issue that people throughout society are actively discussing, positive media coverage could compel them to make changes, potentially preempting worker action. One example that comes to mind is corporate responses to the Black Lives Matter protests in the Summer of 2020. Many companies were quick to put out statements expressing their sympathies with Black Lives Matter and their commitment to diversity within the company.

However real these professions may have been, they often worked to generate positive media coverage for companies. Another example could be a company committing to green energy in an effort to reduce carbon emissions. To excessively emit carbon brings negative media coverage with it, but announcing a transition away from fossil fuels ending decades down the line has the potential to make a company look ever so slightly better in the public eye.

Another important consideration with regards to media coverage of workers actions is the timing of effects that the media coverage may have on results. In the moment that an article about an action may appear, the company may be incentivized to resolve the issue quickly and make the bad coverage go away. More often than not, however, this is not the case. The media coverage, while not having immediate effects on the action itself, could sway public opinion at least partially against the company. If an action is part of a broader campaign, the long term effects of the media coverage could cumulatively be significant.

Evaluating Success

After considering these four factors - cost of implementing demands, cost of the action itself, proportion of workers participating, and media coverage - it is useful to discuss what does it actually mean for a worker action to be successful. In this section that follows, I will lay out different degrees of success for an action and how the different factors may or may not contribute towards that end.

The first result is when an action is completely successful, and the company implements all of the demands. There could be many possibilities for how this comes about. The demands the workers make could simply not be very costly. In this case, one or two other factors - a costly action, a higher number of workers making the demand, or intense media coverage - might

compel the company to make the change. On the other hand, when demands are highly costly for the company, they would be less inclined to implement them without multiple if not all of the other factors. Generally the more specific and tangible the demands, the more able they are to be implemented. The fewer demands there are, furthermore, the more likely they are all likely to be implemented. That is not to say, however, that more demands should not be made.

The next possible result, along a similar line, is when some of the demands are implemented, but not all. This could simply be due to a difference in the cost of the different demands. While it is promising that a portion of the demands were granted through a given tactic, the fact that some were not is an indication that different tactics are needed. Potentially, separating a given issue or grievance into its own campaign if possible could yield better results.

Third, an action could result in none of the demands being implemented. As noted in the factors above, this can often be because the cost of making the changes is simply too high. In other cases, it could be that the demands are not as costly, but the other factors are less effective in persuading the company to change; the cost of the action itself could be lower, fewer workers could be participating, and media coverage could be less than motivating for the company.

Finally, the worst possible end result of an action from the workers' perspective would be not winning any of the demands and facing some form of retaliation from the employer. This could come in the form of some kind of pay cut or the firing of the organizers of the action. This is by far the most demoralizing outcome, as it can feel difficult for the workers to imagine making any kind of progress on an issue when the company does this.

Chapter 4: Strikes

Analyzing the data as a whole in the data analysis chapter, I was able to come to several broad conclusions but nothing quite definitive or in depth. What is needed is a more comprehensive method for analyzing the success of different actions. To do this, I plan on focusing on the three broad tactics I talked about earlier, strikes, protests, and open letters, in the following three chapters. I will then draw a small random sample of size 5 from each of these categories and more closely compare how different actions are carried out and what the ultimate effects are. I will also apply the framework I laid out for evaluating actions - based on cost of implementing demands, cost of the action itself, proportion of workers participating, and media coverage - and see how these actions relate to it.

Case 1: Instacart

The first case I looked at was a strike of Instacart shoppers in November of 2019.¹² Instacart is a gig company where a person can order groceries online and a “shopper” will do the actual labor of going to the store, finding the groceries, and delivering them. Instacart, at the time of this strike in 2019, employed about 130,000 shoppers¹³, a figure that has ballooned to over 500,000 amid the COVID-19 pandemic. Additionally, many of Instacart’s shoppers are independent contractors rather than full employees.¹⁴ This means that they are not guaranteed things like healthcare, paid sick leave, or the ability to collectively bargain. The pay for these workers also is not consistent¹⁵, with shoppers earnings coming primarily from tips, and therefore dependent on the generosity of the customer and the reliability of the platform.

This strike in 2019 took place across the country, and according to Slate, involved “several thousand workers.”¹⁶ Shoppers were seeking increases to the default tip amount that was

set for each transaction they performed from 5% to 10%. Because users of the app tend to pick the suggested tip amount, a 50% drop in the suggested tip amount meant shopper's incomes were significantly cut. This strike took place over three days, but it did not succeed in achieving its goal: Instacart's default tip is still set at 5%.¹⁷ Furthermore, shortly after this action took place, Instacart cut bonuses to its shoppers. These bonuses were awarded to shoppers for every five star rating they received (i.e., a perfect order in the eyes of the user). This \$3 per bonus cut to shoppers' income further exacerbated the cuts due to the change in the default tip. Although the change in bonus policy came just days after the strike took place in November 2019, Instacart claimed it was unrelated to the strike¹⁸, arguing the bonuses "did not meaningfully improve quality."

Since November 2019, Instacart shoppers have engaged in further action around default tips, notably around the onset of the pandemic in the United States in March, 2020, which included demands around personal protective equipment, hazard pay, and paid sick leave.¹⁹

It is useful to consider the successes and shortcomings of this Instacart action in the context of the framework laid out before. To implement these changes in default tip could have potentially cost Instacart sales. The more that users end up having to pay for the service, the less likely they are to buy as much as Instacart would prefer they did. While it is unclear the direct effect, this change could have impaired Instacart's ability to generate as much revenue. With regards to other factors, the cost of having several thousand workers not working for a single day could have been costly to the company. However, because of the relatively small number of workers taking part in the strike and their potentially wide geographic distribution, the cost of the action might have diminished somewhat compared to if many more workers participated. The

media coverage of the strike appears to have had little impact overall. When evaluating success, the workers won none of their demands and were even retaliated against.

Case 2: Amazon

The second case I looked at was a strike at an Amazon warehouse in Eagan, Minnesota in September, 2019. The cause of the action was a dispute over parking allowed for workers. Working in an Amazon warehouse can often be quite physically demanding - long hours walking throughout a cavernous warehouse, lifting heavy boxes on a time crunch dictated to you by an algorithm. Jobs within a warehouse can range from physically retrieving items and packaging them to security, logistics, and janitorial work.²⁰ For workers in these warehouses, the pay is often meager, particularly for a company as valuable and profitable as Amazon is: Amazon workers make up a significant portion of food stamps and Medicaid recipients in many states.²¹

With regards to this action in Minnesota in 2019, there often was not enough parking for warehouse workers on site due to a large number of vans and shuttles that also used the lot.²² Many workers, including part time workers whose shifts only last about four hours, had to arrive over an hour before the start of their shift to ensure they would be able to secure parking, time on site that they were not paid for. While workers endured this arrangement for months, the impetus for the action was a warning that their cars would be towed and they would be fined \$350 if they were in the way of the vans and shuttles. One worker claimed that this fine would be greater than their weekly pay.

According to Gizmodo, about 80 workers participated in this action. As a comparison, the exact number of people working at the warehouse at a given time is unclear, but a New York Times article from June, 2020 says that “on a typical shift, 600 to 800 employees work” at a

fulfillment center just south of Seattle.²⁴ Shortly after the action started, and more specifically after the Gizmodo article was published, Amazon agreed to the demands of the action, buying up additional parking spaces nearby for their workers and paying any fees they may have incurred due to the prior arrangement. They also allowed them to start their shifts upon arrival to this alternate site so that they would not be penalized for a lack of parking.

This of course is not the only action that has ever taken place among Amazon workers (nor that I will look at through these case studies). For example, as many other tech companies saw at the beginning of the pandemic, workers began protesting for things like increased hazard pay and personal protective equipment.

When analyzing this action through the factors laid out in the aforementioned framework, it becomes fairly obvious why this action was successful. Simply put, a small expenditure on Amazon's part to provide parking for their workers is negligible for a billion dollar company. That fact in addition to the negative media coverage associated with underpaid warehouse workers being unable to park at their own worksite strongly incentivized Amazon to make the problem go away as quickly as possible. The cost of the action itself, the work stoppage associated with the strike, seems like it could have been somewhat significant as well, although a higher number of workers might have increased the salience of this factor.

Case 3: Amazon

Another case looking at a strike at the same Amazon warehouse in Eagan, Minnesota later in 2019 paints a very different picture than the case above. Just a month later in October, 2019, roughly 60 workers on the night shift walked out demanding increased wages, a weight limit on boxes, and a removal on the cap of the number of hours that workers are allowed to

work each week.²⁵ With regards to pay, Amazon has a minimum company wage of \$15 an hour²⁶, which is notably better than other large retailers like Walmart, where about half of workers still do not make at least \$15 an hour.²⁷ However, as mentioned earlier, Amazon is one of the largest employers of food stamps and Medicaid recipients in the country (albeit they are one of the largest employers in the country). This is in sharp contrast to the reality that Amazon is one of the most profitable companies in the world, generating \$384 billion in profits in 2020²⁸, as well as the fact that software and other white collar workers at Amazon make much more comfortable salaries.

At the warehouse at which this strike occurred, boxes could weigh up to 70 pounds. Constantly lifting boxes of this weight around can cause injury for many of the workers, something that happened to 19,000 Amazon workers in 2019 according to CNBC.²⁹ While so many warehouse workers are injured in the line of work, many of them do not receive health care benefits through Amazon. As Vice points out, Amazon caps workers at 30 hours per week, presumably to preclude them from having to offer these health benefits as required under the Affordable Care Act.³⁰ This can often have a side effect of forcing workers to take another job because the one at Amazon does not pay enough each week.

This strike in Minnesota in October 2019 was unsuccessful. Amazon did not concede to any of the demands around pay, weight restrictions on boxes, or weekly hours caps. Amazon did, however, make hazard pay available at the beginning of the pandemic, but that was temporary and presumably less related to this specific action than Amazon wanting good press at the beginning of the crisis.

It is interesting and instructive to compare the different outcomes at this one specific warehouse. Similar numbers of workers participated in these two actions, 80 over the parking

strike and 60 for this second one. They differed, however, in two important characteristics, most importantly, the demands. The demands made in this case were much more threatening to the ongoing ability of Amazon to make a profit. Increased wages and increased hours (meaning they must provide healthcare to workers) means that Amazon would have to spend more on its workers. The less that Amazon pays so that workers can have increased pay and benefits like health care and paid sick leave, the more profit Amazon is able to make each year. Weight restrictions on boxes could impact how efficiently Amazon is able to process packages, or even require them to invest more in costly robotics or other technology to assist in moving boxes. In comparison, paying small amounts of money so that the workers are able to park is relatively painless and effectively makes the embarrassing problem - that workers have no place to park - go away for the company.

Another important distinction was in the press coverage between the two strikes. The parking strike took place first thing in the morning and was reported on in real time by Gizmodo up until Amazon's concession. This second case, however, took place during the night shift. According to Vice, Amazon "committed to resolving the dispute in the morning," after the action had ended and before any news outlets could report on what was happening (the Vice article was written the next morning). It is difficult to say what exact effect each of these factors had on how the actions ended up, but they both seem important to this comparison.

Case 4: AT&T

The fourth strike case I looked closer at involved AT&T landline workers mostly in California and Nevada in March of 2017.³¹ This action involved about 17,000 unionized workers

going on strike for a single day. Landline workers at AT&T often interface directly with customers, engaging in tasks like repairing and installing equipment.

In the background of the disagreement that led to this strike was the inability of the union and the company to reach a contract agreement. This was the status quo among landline workers for nearly a year. Without a contract to protect workers, AT&T began making unilateral changes in the job requirements for these landline technicians without the consent of the union.

According to the Los Angeles Times, workers were being asked to “perform the duties of higher-paid employees” while their paid sick leave and disability benefits were cut and they were forced to pay more for their healthcare.³² All of this took place while AT&T was getting rid of thousands of jobs in the California-Nevada region, leading to the strike among landline workers.

Ultimately, this strike was successful, with both sides agreeing to a contract in which AT&T agreed to “no longer require technicians to perform work assignments outside of their expertise and classification.”³³ Additionally, all of this came just a few weeks after the company had agreed to bring about 3,000 jobs back to the US, although this does not necessarily mean that the action itself, the pressure the union put on AT&T, or the contract negotiations impacted this.³⁴ What is notable about this case compared to the other strikes I am considering is that this was undertaken by a unionized workforce. This is important because unions provide a mechanism for workers, presumably a majority of the workforce at least and a much higher proportion than without a union, to engage in collective actions like strikes. With other companies like Instacart or Amazon where the workforce is not currently unionized, it is much harder to significantly disrupt business in the way a day-long, company-wide strike in two states may affect business for AT&T. This disruption on such a large scale increases the cost of the action and thus incentivizes the company to be more responsive to the workers demands, regardless of how it

affects bottom line or efficiency, in order to resume business in a way that would not occur if it were a much smaller percentage of employees.

Case 5: Amazon

Once again, the last strike case examined here involved Amazon workers, this time those working on the software side of the company rather than warehouse workers. Software workers at tech companies tend to earn much higher salaries than workers who perform manual labor like Instacart shoppers or warehouse workers. Also, because the very nature of their work is less oriented around physical labor, concerns around working conditions are far less prevalent among software workers. These workers are generally fairly well educated and aware of the world, as well as the role their company and they themselves play in it. As a result, an issue like climate change, an existential problem commonly in the news, is probably on the minds of many software workers. This is especially likely at a company like Amazon, which has a significant carbon footprint due to its massive data centers, not to mention the extensive distribution network requiring countless vehicles.³⁵

This action took place in September, 2019 amid global climate strikes and involved about 3000 workers in Seattle and a couple thousand more around the world according to Amazon Employees for Climate Justice, an internal group of Amazon software workers.³⁶ While the climate strikes in general had many diverse and broad environmental demands around decarbonization of their own, this Amazon group was specifically demanding that the company commit to eliminating carbon emissions by 2030 and to stop working with companies, lobbyists, and politicians that engage in fossil fuel extraction and/or climate denial. The day before, Amazon CEO Jeff Bezos committed the company to being “net carbon neutral” by 2040 in

addition to utilizing increasingly more electric vehicles for delivery.³⁷ It is, therefore, difficult to gauge what direct effect the Amazon workers' strike had on this decision, rather than the desire for good press in a time of heightened awareness and scrutiny around issues related to climate change. What is interesting about this Amazon strike compared to others examined here is what was actually being demanded. For Instacart, AT&T, and the Amazon warehouse workers, many of the demands made were around issues of pay and working conditions, whereas with software workers, demands were centered around ethics and how decisions were made within the company.

Many interesting questions arise from these comparisons. What motivates someone to take these collective actions? Are these grand ethical issues like climate change enough? Are demands around pay and working conditions more likely to convince a given worker to take part? What implications would that have for software workers who are generally paid very well and enjoy a nice amount of job stability (although not uniformly, especially in the case of contracted workers)? And what is the strategic importance of different types of workers in the production process to enact change within a company?

Analyzed using the framework, it seems like media coverage was likely the driving force behind the outcome of this action. Likely, the cost of a single day of action by software workers at Amazon was not catastrophic for the company. The cost of decarbonizing itself may in fact be costly to Amazon, but it appears, given the trends of global warming and climate policy in the United States, like that would have been inevitable regardless, so the media boost to Amazon would highly outweigh the investment.

Chapter 5: Protests

The next category of actions I will look at are protests. These are generally demonstrations with specific targets, in these cases mostly tech companies, designed to attract media attention and sway the target to concede to the given demands. Strikes, which were analyzed in the previous chapter, are a form of protest, but the two are differentiated by the nature of collective work stoppage for strikes. In this chapter, I will analyze a small set of 5 protests in the tech industry and evaluate their successes and failures.

Case 1: Postmates, Doordash, Instacart

The first protest that I looked at involved delivery workers for Doordash, Postmates, and Instacart in San Francisco. Instacart workers, as stated previously, pickup groceries from a store and deliver them to the customer. Doordash and Postmates are similar concepts but for the restaurant industry. Workers for these two companies are analogous to pizza delivery drivers, except a customer is not limited to just one specific restaurant in their options. Furthermore, most of the delivery workers at these companies are independent contractors, meaning they are not guaranteed the same pay and benefits as would regular employees.

The dispute in September, 2019 that caused this specific protest was over falling pay. As one protestor told the San Francisco Chronicle, over the course of several years, pay had decreased by about 70% (not including tips) for an equivalent amount of work.³⁸ The protestors were demanding a minimum wage of \$15 an hour, plus additional expenses for gas mileage and payroll taxes they had to pay as independent contractors. They were also pushing for greater transparency around how pay is determined and whether tips are actually given to the workers instead of the company. Ultimately, it appears this protest was unsuccessful. Doordash did,

however, release an update to their pay model a month later (although it had been announced before the protest). This was presumably due to greater frustration around the previous model that the 2019 protest was a manifestation of. They claimed this new model will increase pay for workers, although this was mostly through a press release and not actual released data on the matter.³⁹

In evaluating this action through the earlier framework, a couple things stand out. First, the business model for these kinds of gig companies depends on workers being paid less, and it is much harder for them to be profitable if workers are guaranteed \$15 an hour plus expenses. Second, this action did not involve any real kind of disruption to the companies' business: deliveries still proceeded, as this action presumably only involved a small fraction of the thousands and thousands of workers these companies collectively have. Thus, while the media might have portrayed Instacart, Doordash, and Postmates negatively, it seemed to have little overall effect in tipping the scales for the workers in this action.

It is also important to contextualize this San Francisco protest. Around this time, AB5, a bill in California to classify workers as employees rather than contractors, was gaining steam in the legislature. As we now know, this law successfully passed, and it is emblematic of the pressures gig companies in California were facing from workers and politicians.

Case 2: Facebook

The next protest that I looked at involved employees at Facebook in early 2017.⁴⁰ This was centered around then President Trump's travel ban from predominantly Muslim countries. The protest of the travel ban by Facebook employees was initiated by the vice president of engineering, and took the form of a commitment among workers not to fly for 90 days, the

length that the initial ban was in effect for. According to Business Insider, this protest involved “a handful of Facebook employees,” and a spokesperson for the company said that Facebook as a company was completely unaffiliated with the protest.

Of course, this protest had little to no effect on the Trump administration’s policy. According to the ACLU, while the ban was initially struck down in court, the administration reworked it so that it would survive legal challenges.⁴¹ While this protest did not itself alter much, it is instructive to look at Facebook’s, and Mark Zuckerberg’s in particular, relationship to the Trump administration. Following the rollout of the immigration policy, Zuckerberg voiced criticism, stating “like many of you, I’m concerned about the impact of the recent executive orders signed by President Trump.”⁴² Later in 2017, at a meeting of tech CEOs, including those of Apple, Amazon, and Google, organized by Trump, Zuckerberg was absent.⁴³ However, two years later, Zuckerberg attended a private and undisclosed dinner with Trump at the White House.⁴⁴ Clearly, these episodes show a perception on the part of Zuckerberg of the dissatisfaction of employees over his and the company’s association with the Trump administration. The exact role the 2017 immigration protest had in this is unclear, but it is at least part of what made any kind of direct relationship less appealing for those in charge at Facebook.

It is difficult to analyze this action in the context of the utilized framework since the target is not actually Facebook, but the government. It is instructive, however, to examine Zuckerberg’s actions in this way. A close relationship to Trump could be important to Zuckerberg and Facebook in several respects, most directly in media portrayals. While it may look bad to the general public to be associated with the Trump administration, Zuckerberg probably did not want the former president constantly lambasting the social media company for bias against conservatives. This fine line that Zuckerberg was trying to walk could have been and

could be in the future (presumably with a similarly polarizing public figure) an important leverage point for Facebook workers attempting to organize.

Case 3: Google

The third protest I analyzed was undertaken by contracted software workers in Pittsburgh. Google, notably, has an extraordinarily large contractor workforce, with temporary workers making up more than half of their over 200,000 employee workforce, according to a 2019 New York Times article.⁴⁵ As the article says, these workers work alongside full time workers, but “they make less money, have different benefits plans and have no paid vacation time in the United States.” Notably, these conditions have led some contracted workers at Google, specifically in Pittsburgh where the protest took place, to unionize.⁴⁶

This protest took place in March, 2020 as the coronavirus pandemic started to escalate in the United States and many white collar jobs around the country began shifting to work-from-home to prevent the spread of the virus. This involved a memo from contractor and non-contractor Google employees arguing that every Google worker should have the ability to work from home during the public health crisis. Before the memo was circulated, the Pittsburgh workers wore black in a demonstration against the policy of having to come into the office.⁴⁷ From a post to the Twitter account of the contracted workers’ union, about 30 workers engaged in this protest.⁴⁸ According to the Verge, the union consists of 80 software workers.

Following the protest, the workers were indeed granted the ability to work from home. As the tweet shows, the protest took place on Monday, March 16. The Verge notes, however, that Google did not authorize remote access for the workers until the next day. Presumably, the protest, and its subsequent media coverage, compelled Google to allow this to happen more

rapidly than it would have otherwise. As to why, around this time, companies like Google more than likely did not want overly negative media coverage saying they were putting non-essential workers in harm's way for no reason. In addition to this, a decently sized proportion of the union, 30 out of 80, participated in the demonstration, potentially adding force and real people's faces to the harm they were being exposed to. Costs related to the demand of working from home were probably low, making it less difficult for Google to agree. So too were the costs of the action itself, meaning they probably did not have an overly large role in the outcome.

Case 4: Google

The next protest also involved Google workers, but in a slightly different way. According to Bloomberg, in early 2018, a group of influential software engineers disagreed with the production of software titled "Project Maven" that would help Google win military contracts with the US government more easily. These key employees were not convinced that the awesome technology Google is capable of producing should go towards war.⁴⁹ This act of protest prompted wider action among workers at Google: according to Gizmodo, thousands of employees signed a petition calling on Google to cancel the contract with the military and forgo future military contracts, and many resigned over Google's continued involvement with the military.⁵⁰

Ultimately, Google chose to cancel the Project Maven contract in June of 2018 after months of discontent among its workers.⁵¹ However, this was not the complete end of Google's relationship with the military, or even this particular project. As the Intercept reported in March, 2019, Google continued to provide material support to then-unnamed Palantir, which was taking over Project Maven from Google.⁵² Furthermore, in May, 2020, Axios reported that Google had

agreed to provide cybersecurity support to the Defense Department.⁵³ Of course, providing this kind of support is different from Project Maven, which was more directly used in combat, but it does run counter to employees' frustration over the relationship between Google and the military.

This protest took place amid a growing trend among workers in the tech industry against working with government agencies they saw as unethical. This included the military as in this instance with Google, as well as immigration agencies like Immigration and Customs Enforcement (ICE) and Customs and Border Protection (CBP). Notably, these types of actions became more widespread during the Trump administration. Going forward under the Biden administration and beyond, it will certainly be worth watching whether this trend continues or not.

Analyzing why Google cancelled its contract for Project Maven through the framework for evaluating workers actions leads to some interesting conclusions. The cost of giving up Project Maven, perhaps in the tens or hundreds of millions of dollars⁵⁴, is not exactly peanuts, but it would not spell the demise of Google's profit machine. The cost of the action itself - equivalent to the value of the contract itself since the influential workers refused to participate, plus the discontent from the thousands of other workers as well as resignations - would have been more than this cost. That all in addition to the negative media coverage Google was receiving for building artificial intelligence for war probably drove Google's decision to cancel the contract.

Case 5: Whole Foods

The final protest I looked at involved workers at a Whole Foods in Cambridge Massachusetts in July, 2020. This took place shortly after the murder of George Floyd by police

officers in Minnesota, as well as the nationwide racial justice protests it gave rise to.

Additionally, this was a few months into the ongoing pandemic in the United States. The protest was provoked by Whole Foods, a national grocery store chain owned by Amazon, sending “at least a dozen” workers home for wearing masks that said “Black Lives Matter.”⁵⁵ Over a week later, about 40 members of the Cambridge community and some of the workers that had been sent home demonstrated in front of the store.⁵⁶ This involved holding signs and persuading would-be Whole Foods customers not to shop there.

Following the protest, Whole Foods continued to disallow the masks, arguing that it violated the long-standing company dress code against slogans unrelated to Whole Foods. Employees that had been sent home, not just in Cambridge but across the country, eventually filed a lawsuit against Whole Foods alleging racial discrimination by the company in its enforcement of the dress code about slogans, a policy they argued was lackadaisically enforced against slogans related to sports. This lawsuit, however, was dismissed by a judge in February, 2021, and the policy against the masks continues.

Examined through the framework for actions, this particular case is somewhat perplexing. The cost for allowing Black Lives Matter masks would have probably been low. The media coverage they might have gotten for changing their position on the masks would likely have been generally fairly positive. Perhaps they simply did not want to set the precedent for allowing any political mask at all, something which could easily devolve into a slippery slope, or maybe this case is just somewhat of an outlier and Amazon/Whole Foods is occasionally a unique company.

Chapter 6: Open Letters

The final category of actions I will be more closely analyzing are open letters. These are written documents, oftentimes publicly published in order to garner greater attention, outlining demands made by a group of workers who attach their names. By the nature of them, open letters require much less organizational capacity than strikes or protests: it takes a lot less effort to write a statement and get your coworkers to simply sign onto it rather than convincing them to take direct, confrontational action against someone who could potentially fire them. The risks, therefore, are lower, but what about the rewards?

Case 1: Facebook

The first open letter I looked at was penned by former workers at Facebook in early June, 2020. This involved nearly three dozen signers who were among the early workers at the company, including authors of Facebook's original Community Standards, presumably giving them more rhetorical sway on the issue compared to more recent hires. The cause of this letter was related to Facebook's treatment of then President Trump's account around the time of the George Floyd protests in Minneapolis and around the country. Just days after George Floyd was murdered, Trump wrote a post saying "when the looting starts, the shooting starts."⁵⁷ This post, among many others around this time, the letter argued, "[threatened] violence by the state against its citizens", and should be labeled as such by the tech company, similarly to how Twitter had handled the same message.⁵⁸

In this particular instance, Facebook decided not to take any action regarding Trump's post. They did, however, remove one of his posts paying tribute to George Floyd several days later for copyright violations on images used in a video.⁵⁹ Later on in 2020, Facebook began to

more proactively label the President's posts, particularly those making false statements about voting and the election.⁶⁰ This culminated with the assault on the US Capitol in Washington DC by Trump supporters in January, 2021, prompting Facebook to remove his account entirely. Of course, this was done just weeks before the end of his term, at which point there was little to no possibility he would remain in office. The letter penned in June of the previous year can be seen as part of an escalating campaign of pressure on Facebook to be more forceful with Trump's account.

Case 2: Google

The next open letter I looked at involved over 2300 workers at Google. These Google employees were pushing for commitments from the company to be carbon free by the year 2030, to stop doing business with fossil fuel companies, to stop funding political activities involving climate deniers, and to stop doing business with entities like ICE and CBP. This letter was written in November, 2019, about a month after the strike undertaken by Amazon workers on a similar issue. This indicates a growing trend among software workers, as well as their collective awareness around the issue of climate change and their companies' responsibility in it.

In the long term, it appears as if the pressure on Google to decarbonize indicated by this open letter was at least partially successful in affecting change. In September, 2020, almost a year after the letter was written, Google announced they would eliminate all carbon emissions from their business by 2030.⁶¹ Additionally, Google pledged in May of 2020 not to provide customized artificial intelligence to companies that extract fossil fuels.⁶² As CNBC notes, however, this had less to do with the worker petition than a negative report by an environmental

organization. Furthermore, this does not mean that Google is completely stopping all business with fossil fuel companies nor does it mean that Google would carry out the other two demands.

Case 3: Slack

Third, I examined an open letter involving baristas at Slack in March, 2020. Slack is a tech company with a couple thousand employees that produces communication software primarily for businesses. Like many tech companies, many of the non-white collar and software workers tend to be contracted out to other companies, whether they be janitors, cafeteria workers, security guards, or, like in this case, baristas. While most of these kinds of contracted jobs tend to limit the pay and benefits to workers, these baristas were treated fairly well, earning \$28 an hour and receiving healthcare benefits, making it “one of the best [positions] available to baristas in San Francisco” according to Vice.⁶³

What prompted this specific letter, similar to many actions around March, 2020, was the precarity related to the COVID pandemic. The five baristas were being laid off, most likely because they would not be needed if there was no one in the office to drink coffee, and the workers disliked Slack leaving them without jobs at a time when the service industry was not hiring and without healthcare at the beginning of a deadly public health crisis. In the letter, they demanded three months of severance pay and healthcare.

Slack agreed to these demands upon learning that the workers were planning to go public with their complaints. From this case and many other cases related to the pandemic, some interesting conclusions can be drawn. For many companies, bad press is extraordinarily undesirable, particularly in these moments of crisis. While these moments are fleeting and uncertain, they also appear to be useful leverage points for workers to extract concessions from

companies. Furthermore, this does not necessarily need to be large and dramatic demonstrations or strikes. There were only five baristas at Slack that managed to garner media coverage through a letter and subsequently win their demands. It is not as if crises comparable to the COVID pandemic come along all the time or are at all predictable, but, if capitalized on properly, can be at least somewhat fortuitous for workers, rather than completely miserable.

Case 4: Palantir

The fourth case that I looked at involved workers at Palantir in August, 2019. Palantir is a tech company that produces data and cloud software. Some of its largest customers include government agencies, such as the Army, Customs and Border Protection, Immigrations and Customs Enforcement (ICE), and Health and Human Services.⁶⁴ As Business Insider notes, the software that Palantir provides has been used by ICE to screen immigrants as well as conduct workplace raids around the country in search of undocumented workers for deportation.⁶⁵

These contracts, particularly those related to the military and law enforcement, have come under increased scrutiny in recent years, particularly those related to immigration, especially as the Trump administration implemented its family separation policy. This was the context for 60 Palantir employees to write a letter arguing that the profits Palantir made from contracts with ICE should go towards charity. Although this is a small portion of Palantir's workforce of over 2000 employees, this kind of internal pressure seems significant for a company that is so obstinate to most forms of popular pressure related to these contracts, as well as for a company that's business is so interconnected with these agencies. Indeed, the year before a similar letter had been circulated internally that received over 200 signatures.⁶⁶

Ultimately, Palantir refused to stop doing business with these agencies or even to redirect profits to charity. The failure of an open letter like this at Palantir provokes several interesting questions, especially for white-collar software workers who are generally fairly comfortable in their jobs: is it worth taking more confrontational actions as workers against your company over these kinds of ethical issues? If not, and if open letters remain unsuccessful in certain circumstances, are there other avenues besides worker action that might be successful? And if it is more difficult to affect change around ethical issues of this kind in the workplace, are there other issues that could compel more colleagues to take action as well?

Case 5: Amazon

The very last case I looked at involved an open letter penned by Amazon workers in multiple different countries towards the end of April, 2020. Of course, this was a couple of months into the pandemic. Before this point, Amazon had made several changes in response to the emergence of the public health and economic crises. Workers were literally putting their lives on the line by going into work everyday, so Amazon offered \$2 of hazard pay on top of the normal hourly wage and paid sick leave for those with or suspected of having Covid.⁶⁷ However, Amazon explicitly said these benefits would only last until the end of May.

Thus, in late April, a newly formed group called Amazon Workers International (AWI) sent a letter to Amazon executives arguing that these reforms should be made permanent, that there should be far greater transparency around the disease and Amazon's warehouses, and that warehouse workers should more generally have stronger workplace rights.⁶⁸ Ultimately, Amazon did not accede to the demands made here - hazard pay was notably cut off, something workers continued to protest.⁶⁹ Analyzing this action under the previous framework reveals several flaws

in the efforts of this letter. First, while some of these demands are not inherently crippling to Amazon institutionally, some such as workers' classification would be. Furthermore, a simple letter is not very damaging to Amazon's bottomline, especially when it was only signed by 8 workers total spread across the world.⁷⁰

Chapter 7: Unions

Up to this point, I have written extensively about individual actions taken collectively by tech workers. These have primarily come in the form of strikes, protests, and open letters. A single action, or, potentially, a series of escalating actions as a part of a campaign, can have a significant effect in compelling the employer to implement the demands made by the workers. Ultimately, however, this model of seeking demands through discrete actions, as tech workers often engage in, is somewhat flawed in that if the company later decides to change its mind and roll back some of the changes made as a result of the action, there is no organized body or legal protections in place to preserve the gains made by worker struggle. Throughout American history, workers in many industries have organized with their coworkers to solve this problem: unions, a trend only beginning to emerge in the tech industry.

In this chapter, I plan to more deeply analyze unions in the tech industry. Importantly, why have unions been absent from tech? What is the relationship between the emergence of the tech industry and the broader economy at the time and since, as well as the larger organized labor movement. What is happening more recently with unions in tech, and why? And finally, what could the future look like for workers in the tech industry with regards to collective action. Hopefully, exploring these questions will provide a fuller and clearer picture of the state of the labor movement in the tech industry.

Where are the unions?

To start out, it is useful to examine the current state of unions in the tech industry. According to the Bureau of Labor Statistics, 3.8% of workers in “computer and mathematical occupations” belonged to a union in 2020.²¹ This figure is likely imprecise because of the

definitions used by the Bureau of Labor Statistics - for instance, actuaries, statisticians, and mathematicians are grouped in the same category as computer programmers, database administrators, and data scientists.⁷² Additionally, this figure only allows us to more closely examine software workers (and other similar computer workers), excluding the Uber drivers, Amazon warehouse workers, and Instacart shoppers (and so many more) that could conceivably fit into the category of “tech worker”. Nevertheless, this figure is still useful in comparing software workers to workers in other industries.

In comparison to the broader economy, the percent of computer workers belonging to unions is notably low. At a high level, 10.8% of all workers in the United States were members of unions in 2020, almost 3 times the rate of computer workers. Of course, this 10.8% is not evenly distributed throughout the entire economy. As the Bureau of Labor Statistics notes, 34.8% percent of public sector workers, those working for federal, state, or local governments, were unionized. In contrast, only 6.3% of private sector workers - basically, everyone else - were members of a union. While this private sector figure is similarly abysmally low in comparison to the public sector, it is still almost twice as large as that of computer workers. At a high level, clearly, the rate of computer workers in unions is significantly low.

When looking deeper at the data from the Bureau of Labor Statistics, it is clear that the percent of computer workers in unions is much lower than that of similarly educated and professional workers. The category that computer occupations is a part of, “professional and related occupations,” for example, had 15.9% of workers in unions, almost 5 times as much as for computer workers. This broader category of professional occupations included fields such as healthcare, education, law, and engineering. The next closest percentage of workers in unions to computer occupations among professionals was in legal occupations in 2019 at 4.9%, a number

that increased to 6.9% in 2020 while computer occupations remained flat. At the other end of the spectrum among professionals were education, training, and library occupations with 35.9% of workers in a union. Even within the category of highly educated, professional workers, unions are scant in the tech industry. This leads to an important question - why is that?

To answer the question of why unions are hard to come by in the tech industry, it is important to consider the context of the emergence of the tech industry, particularly within the broader political economy of the time. With the successive invention of the technology that made computers possible in the mid-20th century, tech companies like Xerox, Apple, Atari, and Oracle began emerging in Silicon Valley around the 1970s.⁷³ As the Economic Policy Institute notes, organized labor was at the beginning of a long and ongoing decline at this point. From its peak of about 33% in the early 1950s, union density in the US had fallen to 27.9% in 1970, to 23.6% in 1980, and to 10.8% in 2020. Along similar lines, public approval of unions followed a similar trend, falling from a high point of about 75% in the 1950s to 60% in 1972, 55% in 1981, and to a low point of 48% in 2008 (although this figure has increased steadily since 2008).⁷⁴ Around this time, as Georgetown professor Lane Windham notes⁷⁵, the rate of profit for businesses began to decline due to globalization, inflation, and the oil crisis. Additionally, the rise of Reaganism brought with it a sharply anti-union sentiment to the presidency, notably with Reagan firing 11,000 unionized air traffic controllers who were on strike. All of this resulted in a veritable assault on organized labor by employers that has resulted in the low union density that we see today.

All of this context, particularly rising anti-union sentiments, provides a better understanding for why unions did not form in the tech industry in the 70s and 80s, but the broader societal conditions, of course, are not the full story. Software jobs, traditionally, are fairly

well paid and prestigious, requiring a fairly substantial amount of education to be considered. Furthermore, as it is a highly skilled occupation with, at least in the past, far more demand for workers than workers to fill those jobs, individual workers have a significant amount of leverage with their employer in securing better pay and working conditions. If a worker does not like how their employer is treating them, they can simply find another company that will give them what they want. This is one possible explanation for why software workers have traditionally not seen unionization as an avenue worth exploring. Another could be that many people associate unions with factory work and other kinds of manual labor. Software work, on the other hand, is notably white collar and does not require anywhere near as much manual labor. Tech workers, thus, could have simply not seen unions as right for them.

Something that must be said for why unions are so rare in the tech industry is that tech companies will go to extraordinary lengths to prevent them from forming. A notable example of this is Amazon, particularly at the recent union campaign in Bessemer, Alabama. RWDSU, the union organizing this campaign, alleged that Amazon managed to convince the local government to change the traffic lights around the warehouse so that union organizers would not be able to take with workers as they left the facility.⁷⁶ Another tactic they employ is outright intimidation. At a different unionization campaign in 2015, Amazon managers “followed workers around, pretending to be friendly but only seeking to know their position on the union drive.” At a meeting, “several technicians recalled being told... ‘You vote for a union, every one of you will be looking for a job.’” With the threat of losing their jobs if they chose to join a union hanging over their heads, it is very understandable why workers would vote against a union, even if a union would be in their interest. Putting your job in jeopardy when you desperately depend on it as a source of income in a country with an insufficient social safety net would make you very

hesitant to take a risky action. Of course, this kind of outright intimidation is illegal for Amazon to do, but the inadequate penalties and lax bureaucratic capabilities of the National Labor Relations Board give a massive and resourceful company like Amazon little incentive not to break the law when the alternative is unionization.

Another example of tech companies pushing against unions is among gig companies like Uber, Lyft, Doordash, and Instacart. For one thing, the very nature of working as a gig worker is very different from working at an Amazon warehouse or most other workplaces for that matter for the simple reason that there is no workplace. There is little ability for an Uber driver to interact and build relationships with other Uber drivers necessary to form a union because each worker is inherently physically isolated from other workers. Aside from the nature of gig work, many of these gig companies rely on a large amount of contracted labor for drivers, delivery people, and shoppers. Aside from costs related to pay and benefits, a large reason that gig companies do this is to prevent their workers from organizing into unions, as independent contractors are not covered under the National Labor Relations Act⁷⁷ - the legislation that outlines workers rights - although there is legislation currently to change this.⁷⁸

A good example of the lengths gig companies will go to prevent their workers from being classified as employees instead of independent contractors is Prop 22 in California in 2020. The year before, the California legislature had passed AB5 which required these kinds of independent contractors to be classified as full employees, something these tech companies outright ignored. The companies subsequently organized a ballot proposition to carve out an exception to AB5 for app-based workers, the exact workers they depend on. They ultimately poured \$200 million into the campaign for Prop 22, outspending their opponents 10 to 1.⁷⁹ In the end, the ballot proposition passed by 17 points. An interesting aspect of Prop 22 is that although only 58% of

California voters voted in favor of it, it would require seven eighths of the state legislature to vote to amend the proposition in the future, a margin that is next to insurmountable.⁸⁰

Unions in Tech Today

While unions are relatively rare in the tech industry as laid out above, they are not nonexistent. The very first notable instance of tech workers forming a union involved contracted software workers in Pittsburgh working for Google through a company called HCL in September, 2019.⁸¹ The animating reasons behind worker discontent that led to unionizing included things such as pay, paid time off, and job security. As Quartz notes, the contracted workers made as little as \$40,000 a year with less than a 1% raise per year. While they did not have paid sick days, their managers would still expect them to come into work sick and isolate themselves from their coworkers, a practice that is clearly dangerous and reckless considering the ongoing pandemic. Furthermore, the workers were expected to use personal vacation time, of which they only had 10 days per year, on national holidays like Labor Day when Google offices close. With regards to job security, one worker is quoted as saying “at any moment, they could let me go for any reason.” All of this is in sharp contrast to full employees at Google, with whom the contracted workers work alongside, who are guaranteed far better and more secure pay and benefits. Discrete collective action may have affected these concerns, but the workers ultimately decided to form a union, with two thirds of the 80 eligible workers voting to join the United Steelworkers union. While unions may help workers form longer lasting organizations to win demands in the long term, they by themselves, of course, are not a catchall to solve all workplace abuses, especially in the globalized society we live in. A year after the Pittsburgh workers unionized, the National Labor Relations Board issued a complaint that HCL had shifted some of

the contractors' work abroad to Poland.⁸² While this was a promising first example of unionization in the tech industry, much is still to be done to ensure workers are guaranteed good pay, benefits, and job security as the workers initially demanded.

A second notable union formed in the tech industry was at the crowdfunding platform Kickstarter in February, 2020.⁸³ While the Google/HCL union was motivated by issues like pay and benefits, Kickstarter's workers sought to have a greater say in the operations and decisions of the company. One example of this was a product being developed called Drip. After the workers expended considerable work on this project, the new CEO unilaterally decided to scrap it with "no consultation" with the involved employees. A similar incident that occurred involved the unilateral cancellation of a project on Kickstarter called "Always Punch Nazis" after pressure from right wing news sources like Breitbart, an issue that drew the interest of the entire company. Having a single manager make that decision seemed to the workers to violate the culture of openness, communication, and collaboration they believed Kickstarter to embody. Following these incidents, workers began to organize a union in order to achieve this level of worker input in company decisions that they desired. Ultimately, a slim majority of about 80 workers voted to join the Office and Professional Employees International Union (OPEIU). While they have yet to secure a contract through collective bargaining, the union did ensure that workers laid off amid the coronavirus pandemic were guaranteed four months of severance, a release from non-compete agreements, and six months of healthcare.

A final tech union worth mentioning is the Alphabet - Google's parent company - Workers Union (AWU) that went public in January, 2021. Notably, AWU, a part of the Communication Workers of America, is not a traditional union in the sense of a majority of workers deciding to organize together to take part in legally protected collective bargaining.

Instead, it is a minority union, meaning it largely exists as a structure and organization to facilitate worker activism at Google, with legal recognition and collective bargaining potentially coming down the line.⁸⁴ Initially, the union started out with about 200 members, quickly ballooning to over 800 following the public launch of the union.⁸⁵ Obviously with a workforce above 100,000 at Google, it is difficult to imagine organizing a majority of workers, particularly white collar software workers, to agree to join a union. For reference, the largest union election (not restricted to tech) in the last 30 years in which a majority of workers voted in favor of unionizing involved just 7,000 workers in June, 1991.⁸⁶ Organizing a company as large and vast as Google is an ambitious project, and it remains to be seen what is possible.

The Future of the Tech Labor Movement

Trying to glance into a crystal ball and predict the directions that the tech industry and its workers will go in the future is bound to be riddled with flaws. Extenuating circumstances that radically reshape the dynamic and relationship between workers and companies are bound to emerge. The coronavirus pandemic, for instance, has upended workplace relations, as frontline workers have been forced to expose themselves to the risks of the pandemic in order to sustain themselves in such a precarious time. On the flip side, traditional workplaces have become impractical for white collar workers amid the public health crisis as working from home has become more normalized. As a result of this change, workers have experienced increased productivity, as well as a greater devotion of their pre-pandemic free time to work, more often than not outside of the traditional 9-5 workday.⁸⁷ These kinds of shocks to the system are difficult to forecast, but there are a couple trends within the tech industry that signal where labor relations is likely headed.

The first is in the gig economy. As previously noted, gig companies like Uber, Lyft, and Doordash rely on contracted labor in order to limit labor expenses and give the pretense of being a valuable company (as Uber does not make a profit). Ideally, these companies would like to completely eliminate labor costs, hence the investment in self-driving cars, a technology that always seems to be right around the corner.⁸⁸ Until the day comes when drivers no longer need to be behind the wheel of a car, Uber and Lyft and all the other gig companies that have yet to automate their workforce must pay their workers, something they would like to do as little as possible. Thus, these companies pushed hard for measures like Prop 22 in California to prevent their workers from being classified as employees, far costlier than being classified as an independent contractor because of things like pay, benefits, and the ability to form a union. Days after Prop 22 passed in California, Uber and Lyft launched a Super PAC to enact a similar law in Illinois.⁸⁹ Whether this will go anywhere remains to be seen, but if the \$200 million these companies were willing to spend is any indication, these companies will likely spend whatever is necessary to guarantee their workers are not classified as full employees. Complicating this even further is the position of the Biden administration on this issue. While Biden himself has denounced Prop 22, he has surrounded himself with multiple advisors that have connections with Uber and the fight against Prop 22 specifically.^{90, 91} Further, multiple relatives of Vice President Harris have connections with Uber as well.⁹² It remains to be seen exactly what the Biden administration will do with regards to gig workers, but the trends and power of these companies are potentially worrying signs for these workers.

Another trend worth considering in the tech industry is the small but growing number of unionization efforts. As I write this, it is becoming apparent that the union vote at the Amazon warehouse in Bessemer, Alabama is not likely to succeed. While the Alabama warehouse

unionizing might have sent shock waves throughout the tech industry, spurring union efforts around the country, it seems like those efforts may proceed regardless, albeit at a slightly less energized pace. The Teamsters Union, for instance, has spearheaded a campaign to organize Amazon workers at warehouses in Iowa.²³ More notably, as Bloomberg reported²⁴, as many as 1000 workers around the country, from Baltimore to New Orleans to Portland and Denver have reached out to RWDSU, the union organizing in Alabama, expressing interest in organizing their warehouses. From all appearances, it does not seem as if Bessemer, Alabama will be the last union campaign that Amazon experiences. And if the results of union efforts among white collar workers at places like Kickstarter and Google become apparent, it seems more likely than not that unionization will spread even further among software workers. In summation, there is much to be concerned about with regards to the future of workers' rights in the tech industry, but, at the same time, the beginnings of a labor movement with near limitless potential leaves much to be optimistic about as well.

Chapter 8: Conclusions

Throughout this thesis I have attempted to analyze the state of the labor movement in the tech industry. In this section, I will circle back on the questions posed in the introduction and provide more concise answers based on the previous chapters.

The first question I aimed to answer was whether there has been a significant increase in labor actions in the tech industry in recent years. Based on Figure 2.1 and 2.2 from the data analysis chapter, it seems fairly safe to say that yes, worker actions in the tech industry have increased substantially in recent years. As the two graphs show, actions were fairly sparse until about 2014, and even then, there was never consistently more than 5 in a single month until 2019, with the most being in March, 2020 at the beginning of the pandemic. It will be interesting to see how this trend changes in the years to come. Will the amount of worker actions increase, or will they begin to taper off as the public health crisis begins to subside?

The second question I posed was if this increase is happening, why is it happening? What is motivating workers to take action? As Figure 2.6 shows, the main driving factors pushing workers into collective action is, in nearly equal amounts, pay and benefits, working conditions, and ethics. Unfair labor practices, discrimination, and job security were the other possible categories pushing workers, but they occurred in substantially lower. These results do not seem fairly surprising. Pay, benefits, and working conditions, particularly for non-software workers, seem like the most basic needs and expectations workers might have around their job. Ethical concerns, similarly, make more sense as motivators for software workers, as their income and benefits are fairly secure but they could desire more say in the operations of their company.

The next question was about the tactics that the workers used as a part of the action. At a high level, Figure 2.3 showed that actions largely came in the form of protests, open letters, and

strikes, with protests and open letters occurring about 2-3 times more than strikes. Broken down by type of worker, this data produced interesting results. While both software and non-software workers engaged in protests at about the same rate, software workers penned open letters about 2.5 times as often as non-software workers, and non-software workers struck 2.5 times as often as software workers. It will be interesting in the future to watch how these numbers change, and whether or not software workers will engage in more confrontational actions similarly to their non-software counterparts.

Another question was how successful were these different kinds of actions at winning the demands made. Figure 2.9 does a decent if somewhat imperfect job at capturing how successful different actions are. Strikes and protests seem to be far more successful for non-software workers across the board, while open letters have tended to be the most successful for software workers. Of course, this measure simply looks at the proportion of demands won for a given action, saying little about the surrounding context to say specifically why the demands were won.

To answer the question of why a given action was successful or not, I attempted to lay out the beginnings of a framework for evaluating collective actions. The primary factors in this framework, in the order of their relevance and impact on the result, were the cost of implementing the demands, the cost of the action itself, the proportion of workers participating in the action, and the media coverage of the action. It's currently somewhat difficult to say exactly how these factors interact with one another - i.e., with costlier demands, what exactly is needed to win demands compared with less costlier demands, where less support from the other factors may be needed to compel success - but they can certainly serve as a roadmap for workers when planning an action.

Aside from these main questions I aimed to answer throughout this thesis, I also sought to provide some kind of explanation for the tech industry and its long nonexistent but growing connection to organized labor unions. After showing that unions are far less prevalent in tech compared to other sectors of the economy, I hypothesized that the reasons for this disparity included the political and economic context that the modern tech industry emerged in the 1970s and 80s, the association of labor unions traditionally with factory and manufacturing work rather than higher skilled white collar labor, and the aggressive anti-union practices of tech companies. While unions are hard to come by in the tech industry, they are very slowly forming, as indicated by unionization efforts at companies like Kickstarter, Google, and Amazon.

While the future of the tech labor movement can go in many possible directions, at least two things seem highly likely. First, companies will continue attacking their workers' pay, benefits, and job security, as is clear with the campaign around Prop 22 in California, in order to secure profitability for the long term future. Second, and largely in response to these attacks and the growing precarity of tech work, both software and non-software alike, the level of worker activity and unionization is bound to sustain itself, and very likely increase. The old world of techno-optimism is dying, the new world of worker empowerment struggles to be born; now is the time of monsters.

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