# Stuck in the middle with you: The transaction costs of corporate employees hiring freelancers

CAITLIN LUSTIG, University of Washington, USA
SEAN RINTEL, Microsoft Research, UK
LIANE SCULT, Microsoft, USA
SIDDHARTH SURI, Microsoft Research, USA

Corporations are increasingly empowering employees to hire on-demand workers via freelance platforms. We interviewed full-time employees of a global technology company who hired freelancers as part of their job responsibilities. While there has been prior work describing freelancers' perspectives there has been little research on those that hire them, the "clients", especially in the corporate context. We found that while freelance platforms reduce many administrative burdens, there are number of conditions in which using freelance platforms in a corporate context creates high transaction costs and power asymmetries that make it difficult for clients to negotiate work rights and responsibilities. This leads corporate employee clients to feel "stuck in the middle" between their employer, the platform, and the freelancer. Ultimately, these transactions costs are a potential barrier to wider adoption. If corporations want to leverage the value of the freelance economy then better guardrails, guidelines, and perhaps even creative technology solutions will be needed.

CCS Concepts: • **Human-centered computing** → **Empirical studies in HCI**; **Computer supported cooperative work**; **Empirical studies in collaborative and social computing**.

Additional Key Words and Phrases: freelance economy; on-demand economy; future of work; Upwork

## 1 INTRODUCTION

Traditionally, corporations have used well established policies, practices, and regulations to hire both full-time employees and contingent workers. Larger companies have entire legal, procurement, and human resources departments to aid in handling the relationship between the corporation and the workers. Recently there has been a marked rise in corporations using freelance platforms to hire on-demand workers because of the apparent benefits in the cost and speed of getting work done. On-demand platforms disrupt the burden of hiring by providing APIs to handle practical functions such as sourcing, scheduling, shipping, and billing [10, 41]. However, they provide little

Authors' addresses: Caitlin Lustig, celustig@uw.edu, University of Washington, Seattle, Washington, USA; Sean Rintel, serintel@microsoft.com, Microsoft Research, Cambridge, UK; Liane Scult, lidona@microsoft.com, Microsoft, Redmond, Washington, USA; Siddharth Suri, suri@microsoft.com, Microsoft Research, Redmond, Washington, USA.

aid for managing the relationships between clients and freelancers[1]. While this tends to be of limited relevance for individuals and small organizations, in a large corporate setting there is real danger that industry best practices and infrastructure for navigating work responsibilities—some of which protect the rights of workers—might be stripped away or sidestepped. The burden of negotiating between corporate fealty, platform requirements, and responsibility to freelancers are transaction costs that fall on individual employees. Originating in economic theory [37], the concept of transaction costs refers to "expenses associated with managing the production of goods and services" [10]. While transaction costs are traditionally thought to be incurred by corporations, with the on-demand economy—in which management is partially offloaded to algorithms and platforms—some of these transaction costs are passed on to clients and freelancers [10].

In this paper we explore the unique challenges being faced by corporate employees who hire freelancers using online platforms. We argue that if corporations want to enjoy the benefits of on-demand hiring, there are a number of challenges with their employees being "stuck in the middle" that corporations and platforms will need to address using regulations, training, and new work processes.

We conducted interviews with full-time employees who had engaged or were considering engaging a freelancer in the course of their job duties. Typical tasks that client employees wanted freelancers to undertake included writing customer support documents, web development, graphic design, content creation, and translation. We found that employee clients most often hired freelancers to save time rather than money. However, in exchange for those time savings, they had one major concern and they took on two major transaction costs. Their concerns stemmed from power asymmetries between themselves and the freelancers—in other words, clients have more influence over the actions of freelancers than freelancers do over clients. (For example, both clients and freelancers are rated by one another, but poor ratings are perceived as more consequential for freelancers than they are for clients [22, 35].) As a result, their main concern was how to work with a freelancer responsibly. They had to navigate mitigating risk for the company (e.g., intellectual property risk and employee classification risk) and their own sense of ethical responsibility to freelancers. We found that they sometimes feared the potential "race to the bottom" that the freelance economy might enable, and thus they wanted their corporation to provide guardrails and guidelines about responsible use of the freelance economy.

One major transaction cost they encountered was, as we have termed it, the "task definition problem". That is, they had to carve out part of their own work, write a job description for it, define milestones, and set a pay rate. The task definition problem manifested in different ways depending on whether the employee client knew how to do the task themselves or whether they did not have the skills or experience to accomplish the task themselves. The second major transaction cost was the overhead of managing a freelancer. It was not clear to many of the clients we interviewed to what extent they can manage freelancers and in what ways they can manage freelancers that abide by the client company worker compliance guidelines.

Little is understood about how corporate employees can leverage the benefits of the freelance economy, primarily because most companies are understandably reluctant to open their internal business processes to external scrutiny. At the time of writing this paper we were all affiliated with a global technology company that is partnering with the freelance platform Upwork to run an internal pilot program to help employees work with freelancers to accomplish tasks. The program is called Freelance Services, which is also dedicated to setting industry standards for corporate use of

---

[1]We call those who do work in the freelance economy "freelancers" and call those who create the work to be done "clients". This is the nomenclature used by Upwork, one of the most popular freelance economy platforms, and the platform used by the clients that we studied.

the freelance economy. Our unique access to employees using the program, program staff, and the program's support resources allows us to understand the issues facing corporate employee clients, thereby adding their voice to the conversations in CSCW about the freelance economy. This paper contributes to ongoing conversations in CSCW about transaction costs and power asymmetries in the on-demand economy by providing scalable recommendations for companies that use the freelance economy, as well as recommendations for freelance platforms. By taking the approach of looking at the perspectives of the employee clients we argue, similar to Woodruff et al. [40], that companies ought to care about these issues not simply because it is the right thing to do, but because it is good business sense.

## 2 RELATED WORK

A variety of research has analyzed the transaction costs faced by *workers* in the on-demand economy. For example, Gray and Suri [10], Gray et al. [11], and Gupta et al. [12] conducted ethnographic fieldwork and described interview data showing how workers collaborate and communicate to provide social support, swap best work practices, and to reduce the amount of time it takes them to find good work. Furthermore Martin et al. [28] did an in-depth analysis of online forums, where the workers congregate, to show how they use them to find reputable requesters who post tasks with good pay. Gray et al. [11] took this a step further by mapping the collaboration network that workers organically created largely to reduce the search costs of finding good work. Entire systems like TurkOpticon [18] and Dynamo [33] have been built to help workers reduce their transaction costs. TurkOpticon was built to remove an information asymmetry in the MTurk platform where requesters get reputation information about workers but not *vice versa*. Dynamo was a system where workers could come together and collaborate for their own common good. What sets our work apart from these previous studies is that we are focusing on the transaction costs that those who create the work, the clients, incur. In addition, most of these studies focus on micro-task platforms like MTurk whereas we focus on Upwork where the tasks are of higher complexity.

There is prior work in the CSCW and HCI communities that describes transaction costs from a broader perspective than just that of the workers. Much of it is focused on the power asymmetries between on-demand platforms, those that hire on-demand workers, and on-demand workers themselves. In this section, we discuss some of this research, both broadly and as related to Upwork.

The on-demand platforms' mediation between clients and freelancers is a form of what is referred to as "platformic management" [20] or "algorithmic management" [19, 32]. Jarrahi et al. describe Upwork as a system that performs "platformic management" on workers, referring to a platform that may incorporate algorithms to maintain control over workers (e.g., Upwork's online reputation system [8]) but may also use "technological and social mechanisms" to control work [20]. For example, Upwork tracks whether freelancers' time is being spent on actually working on tasks that are paid by the hour by automatically and regularly taking screenshots during the times they say they are working [2, 24]. Freelancers have considerable choice over which jobs they accept and they can set their own rates; however, the reputation system is not transferable to other platforms, and freelancers are encouraged to remain active on the platform, otherwise their accounts may be deactivated [20]. Reputation and account maintenance are examples of transactions costs the workers bear resulting from these power asymmetries. Platformic management on Upwork occurs through the platform managing transactions, channeling communication, evaluating freelancer performance, gatekeeping (i.e., deciding whether user accounts are legitimate and should remain active), providing information (e.g., matching freelancers and clients; giving best practice recommendations), and resolving conflict between clients and freelancers [20].

Platformic and algorithmic management lead to several kinds of asymmetries (e.g., power and information [6, 15, 23, 25]) that impose costs on both freelancers and clients (albeit not equally).

These asymmetries may constrain freelance workers' rights in various ways which are now reasonably well-known [7, 9, 27, 30, 38]. For example, Lampinen et al. state that "while some platform workers appreciate the flexibility promised by these new forms of work, workers nevertheless face substantial risks, such as low payment, a lack of protection and insurance, unpredictability of demand, stress, and the difficulty of collective organization" [25]. While platformic and algorithmic management are sometimes portrayed as a way to avoid human bias against workers, in the case of platforms like Upwork there may be significant bias because clients have the option to select the specific freelancers themselves and rate them, which has been shown on other platforms to be biased against Black people and women [13]. On platforms in which both clients and freelancers can be rated, this bias may go both ways [14]. Furthermore, D'Cruz and Noronha found that Indian workers on Upwork had a different experience than those typically reported in the literature on Western workers: "Aversive racism from clients and fellow freelancers, calling into question workers' competence, bid amounts and remuneration rates, accompanied by divergences linked to ethos, language and time, bring a negative tenor to work-related Work organisation, interactions and make it more difficult to complete tasks that are already complicated by their virtual and often asynchronous forms" [3]. The on-demand economy also requires substantial emotional labor from freelancers who are trying to get a good rating [31]. These risks, overheads, biases, and emotional tolls are all transaction costs, stemming from platformic and algorithmic management that the freelancers bear.

In order to address these asymmetries, reduce the transaction costs, and have greater control over their work, freelancers and corporate employee clients disintermediate platforms [2, 18, 19, 26, 28]. Users "repeatedly subvert Upwork's imposed communication channels, transaction fees, and file sharing services, prompting an array of alliances between clients, freelancers, and nonhumans (external digital platforms)" [22]. Upwork freelancers develop methods for making sense of, circumventing, and manipulating algorithms that manage them [19]. Sutherland et al. [35] also found that clients valued being able to establish long-term with relationships with freelancers and that "gig workers and clients complemented (or circumvented) Upwork's provided structures by substituting third-party task management technologies, and implementing their own organizational techniques." This disintermediation presents a problem for the platforms but also speaks to the broader issue of how the use of platformic management constrains both clients' and freelancers' abilities to handle their working relationships. In effect, clients and freelancers are incurring transactions costs by disintermediating the platform to reduce other transactions costs that were imposed by the platform in the first place. In the corporate setting, platformic constraints add a layer of complexity because the corporate employee client has moral and legal responsibilities to both the freelancer and their employer.

Taking a broader perspective, little is known about: (1) the nature of corporate employee clients' tasks and the value they seek from freelance workers; (2) how the nature of those tasks has a bearing on clients' responsibilities to both freelancers and their employers—(e.g., how corporate employee clients are constrained by corporate freelance use policies designed to protect IP, labor relationships)—and how clients navigate these responsibilities affects freelancers; and (3) what the transaction costs are when clients are trying to leverage freelance work.

## 3   RESEARCH CONTEXT

The standard Upwork workflow involves a client writing a job description which specifies their task, budget, milestones, deadline, and the skills required of the freelancer. Clients can then either browse freelancer profiles and invite qualified freelancers to bid for the task, or clients can choose from a list of freelancers supplied by the platform. Clients then vet the freelancers by reviewing the profiles where they can see "job success" scores, reviews, job experience, and portfolios. Optionally, clients

can interview freelancers. Once a freelancer is chosen, the work begins. Clients and freelancers either communicate off-platform or by using Upwork's chat program, which also allows file sharing. When the work is completed the client pays the freelancer using Upwork's payment API. The pay rate can either be specified on an hourly basis or a fixed price for the whole task.

As we noted in the introduction, the company we researched has a pilot Freelance Services program, which allows their employees to hire freelancers on Upwork to aid in their job duties. The first step in using the Freelance Services program is for an interested employee to view a training video which gives a brief introduction to the freelance economy and the Upwork platform. The video describes what types of tasks are suitable for using a freelancer and also covers topics like maintaining data privacy, IP, and the security of high impact business decisions. After finishing the training, employees are made aware of support personnel at their company and at Upwork to contact with any questions. Employees who are using the Freelance Services program for the first time get access to funding for their first project. In this way employees can try out the Freelance Services platform without having to ask their managers for funding.

As is the case with many global technology companies, many of the groups, teams, and organizations in the company we studied have a history of hiring contract workers. Unlike freelancers, typically these contract workers are vetted by and sourced from a staffing agency and have a fixed length contract on the order of one year or so. Also unlike freelancers, some contract workers work on the company premises in a dedicated work space, get an official ID badge, and gain access to internal software tools, databases, and the corporate intranet. Since using contract workers is standard practice in this company, many of our interviewees compared hiring a freelancer to a contract worker hired from a staffing agency. However, we found that although these two types of contingency work seemed similar, there were unique transaction costs associated with freelance work due to the lack of infrastructural support.

## 4 METHODS

This was an exploratory qualitative study of a new aspect of the freelance economy. We conducted 46 interviews in total with full-time employees at a global technology company. The second author conducted ten 30-45 minute pilot interviews to identify which groups of employees we should research and to refine the interview protocol for a full study. For the full study, the first author then conducted 36 interviews with a variety of employees from different parts of the company and with a variety of levels of experience with the platform. Both studies were approved by the company's IRB. In this paper we report results and quotes only from the full study, although the themes are informed in part by the pilot.

### 4.1 Interviews

For the 10 pilot interviews we recruited the following participants: One employee who had completed the training but not hired a freelancer, two employees who had posted a single job, and seven employees who had posted multiple jobs.

For the full study we recruited 36 participants from nine categories:

(1) Employees who showed interest in the freelancer program but never did the training (5 interviewed).
(2) Employees who did the training but never hired a freelancer (2 interviewed).
(3) Employees who put a task on Upwork and are waiting for the work to be done (1 interviewed).
(4) Employees who successfully completed one task on Upwork (6 interviewed).
(5) Employees who successfully completed two to five tasks on Upwork (6 interviewed).

(6) Employees who successfully completed more than five tasks on Upwork but have stopped doing so (5 interviewed).
(7) Employees who successfully completed more than five tasks on Upwork and are continuing to do so (4 interviewed).
(8) Employees who champion hiring freelancers (4 interviewed).
(9) Members of the team that created the Freelance Services program (3 interviewed).

To recruit participants from category 1, we reviewed the badge scans from our events for employees who were interested in learning more about freelance economy and also recruited through snowball sampling.

For categories 2-7, we used internal data analytics on Upwork to find employees with a wide range of experience with posting jobs. With the exception of those that were snowball sampled, we did not interview people who were in the same group as many of the team who created the Freelance Service program because we felt that their experiences would not be representative, especially because they were often heavily encouraged to use it and because some of them had access to some pilot features that streamlined the experience for them.

The cut-off for category 5 was selected based on where usage of the platform had a significant drop off (i.e., there was a discontinuity in the histogram of usage after 5 jobs). Category 6 was determined by whether someone had used the platform in the last three months.

The "champions" were selected based on the recommendations of the team that created the Freelance Services program, who had engaged extensively with them and knew that they were heavily involved in encouraging their teams to use the platform and had helped a number of people learn how to use it.

The Freelance Services program was launched by an internal team spanning human resources, procurement, research, legal, and various product groups. The team was developed to help employees at the company learn how to use the freelance economy, create corporate policies that promote responsible use and ensure legal compliance, and work with freelance platforms that the company had partnered with to develop new features that better served the employees of the company. Several of the quotes we will present refer to members of, or interactions with, this team.

For the 36 interviews in the full study, we reached out to potential participants over email in April and May 2019 and offered a $25 Amazon gift card. The semi-structured interviews were primarily conducted in person, although some were conducted via video meeting for participants who were not in the offices local to the interviewer. Interviews were generally 25-40 minutes long. All interviewees were located in the U.S., and the interviews were audio recorded with the participants' consent. During the interview, we asked participants about a number of topics, including their role in the company, what they had used the platform for, how they had selected people and decided how much to pay them, how they decided to rate them, how their use of the freelance economy differed from their experiences with contractors and other types of contingent labor, and their thoughts on the future of work. Participants may have been more likely to emphasize the benefits of the freelance economy because the interviewer was associated with their company (although the interviewer also represented an outside academic institution and was not a permanent employee). While it is impossible to completely mitigate this effect, the interviewer emphasized that, as an outsider, they did not have a vested interest in the freelance economy and would not be sharing identifying information with the company.

## 4.2 Participants

The 36 participants (23 men and 13 women) in the full study spanned 32 teams in the company. There were 15 managers, with anywhere from 1 to 270 people who reported to them, and 21

non-managers (i.e., even if participants had "manager" in their job title, they did not have anyone reporting to them). For more details, see Table 1.

Participants used Upwork for a variety of tasks, including video creation, translation and localization, reports written by subject matter experts, logo design, and presentation design.

## 4.3 Analysis

As noted above, given the relative novelty of the area under investigation, our analytic goal was to be systematic enough to pull out a first set of relevant themes that would unlock the area for the CSCW field and provide a useful foundation for future investigations. We hired transcriptionists on Upwork to transcribe the interviews and to get a sense of what it was like to use the platform. Having experience with hiring and working with freelancers on the platform helped the first author empathize with participants and develop more salient questions about the selection, payment, and rating processes. The first author coded the 36 interviews, with codes generated inductively based on the participants' own words.[2] All of the authors met regularly to discuss the codes, and we used axial coding to find larger themes in the data and grouped codes into thematic categories. We did not develop a code book or have multiple coders compared using inter-rater reliability, as this exploration is too early to warrant such procedures.

We organized our data in three ways: looking at the overall themes, themes by experience level with the Upwork platform, and themes for managers and non-managers (based on how frequently codes were brought up and how strongly they were stated by participants in each of these categories). For each of these ways of "slicing" the data, we conducted another round of axial coding to categorize the codes (e.g., immediately visible benefits versus deferred benefits) according to our own understanding of the higher themes of the data, rather than the participants' own words. We also tried slicing the data by task type, but found it difficult to do so because in some interviews participants discussed many different job types (e.g., coding, presentation design) and the job types were varied enough that it was difficult to make any claims about any particular category. We also tried slicing by whether a participant had experience doing the type of job that they had posted (e.g., a web developer hiring a freelance web developer), but found that "experience" was not always clear cut. The "slices" we did chose were straightforward to categorize and had a clear difference of findings between categories (e.g., managers and non-managers).

We did not include data from the champions and team members responsible for building the Freelance Services program when slicing the data by experience because there was a wide range of experiences that champions had with using the freelance economy directly—they had posted anywhere from 6 to 37 jobs—and two of the members of the Freelance Services team that we interviewed had never used the platform. We also chose to collapse the "one job" categories (3 and 4) into one category, as well as combining the "many jobs" categories (6 and 7) into one category.

When slicing the data by level of experience with the platform, we noted which codes had been mentioned by at least two participants. When slicing the data by managers and non-managers, we decided that a code was represented if it was mentioned by at least five participants. We chose this cutoff point because it was the largest cutoff at which the top overall benefits, concerns, and transaction costs had been represented.

## 5 FINDINGS

Findings are divided into benefits, concerns, and transaction costs. We describe the benefits, concerns, and transaction costs that all participants most frequently described when we aggregated

---

[2]We chose not to code the pilot interviews because they were conducted by a different interviewer, we used a different interview protocol, and because we did not retain some of the data about participants in order to protect their privacy.

|                              | ID  | Gender | Manager? | Jobs |
|------------------------------|-----|--------|----------|------|
| No training                  | P26 | Male   | No       | 0    |
|                              | P34 | Female | Yes      | 0    |
|                              | P36 | Male   | Yes      | 0    |
|                              | P38 | Male   | No       | 0    |
|                              | P42 | Female | Yes      | 0    |
| Training only                | P17 | Female | No       | 0    |
|                              | P32 | Male   | Yes      | 0    |
| Waiting on first job         | P12 | Female | No       | 1    |
| One job                      | P11 | Male   | No       | 1    |
|                              | P15 | Male   | No       | 1    |
|                              | P19 | Male   | No       | 1    |
|                              | P33 | Female | No       | 1    |
|                              | P40 | Male   | No       | 1    |
|                              | P43 | Male   | Yes      | 3*   |
| Two to five jobs             | P13 | Female | No       | 2    |
|                              | P16 | Male   | No       | 4    |
|                              | P22 | Male   | No       | 5    |
|                              | P25 | Male   | No       | 3    |
|                              | P37 | Female | Yes      | 0*   |
|                              | P46 | Female | Yes      | 2    |
| More than five jobs, stopped | P20 | Male   | Yes      | 9    |
|                              | P29 | Female | Yes      | 7    |
|                              | P30 | Male   | No       | 6    |
|                              | P31 | Female | No       | 8    |
|                              | P39 | Male   | No       | 1*   |
| More than five jobs, current | P14 | Female | No       | 3*   |
|                              | P23 | Male   | No       | 11   |
|                              | P27 | Male   | Yes      | 1*   |
|                              | P28 | Female | No       | 11   |
| Champions                    | P18 | Male   | Yes      | 20   |
|                              | P21 | Male   | No       | 37   |
|                              | P24 | Male   | Yes      | 14   |
|                              | P41 | Male   | Yes      | 6    |
| Freelance Services team      | P35 | Male   | Yes      | 11   |
|                              | P44 | Male   | Yes      | 0    |
|                              | P45 | Female | No       | 0    |

Table 1. Participant demographics. Note that * refers to participants whose number of jobs were not accurate because they used someone else's account, used the platform before coming to the company we studied, or had to create a second account.

all of our interview data together. After that we describe the issues that were more apparent to people with more experience with the freelance economy and how reports by non-managers and managers differed.

## 5.1 Benefits

After thematically coding our interview transcripts, we found that saving time was the underlying reason behind the most frequently reported benefits. Some of these benefits were *immediately visible* to participants without any or much experience with the platform; however, others were *deferred* because they were only apparent after participants had posted one or more jobs. We found that managers and non-managers had similar views of benefits, but managers were more focused on cost savings and providing opportunities for freelancers; whereas non-managers cared more about hiring quickly and using the freelance economy to experiment with different kinds of projects than they might otherwise.

*5.1.1 Overall Benefits.* There were four different dimensions as to how working with freelancers helped clients save time. Clients described how: (1) the volume, scale, and pace of their work was increased; (2) working with freelancers enabled clients to focus on higher impact and more specialized work; (3) clients could leverage outside skills a freelancer possessed but they did not have themselves; and (4) it allowed for faster hiring and onboarding than using a staffing agency.

*Volume, scale, and pace of work were increased*: Participants reported that with the freelance economy, more work could be done in less time than it would take them normally. Working with a freelancer simply meant there was more brain power available to get work done which allowed clients to complete projects that they would be unable to otherwise. A senior program manager in sales and marketing, who focused on user experience and needed a freelancer to help in a time where his team was fully occupied with other tasks, said:

> I just sort of multiplied what I was able to do by tenfold. Probably even more than that [...] I was able to complete something that I would not have been otherwise able to devote as much time on. (P30)

The freelancer allowed this client to complete a project that he did not have the time to do himself. This is similar to how P11, a software developer, needed a freelancer to build documentation website for a project he was working on. In both cases, hiring a freelancer temporarily increased their workforce when the in-house resources were not enough to complete a particularly time-consuming project. Freelancers were also hired for fairly "routine" tasks as well; such as P14 who hired freelancers to create videos to support the content that her team published. She found that they were much quicker than using full-time employees of the company she worked for:

> I was floored by how well it worked, how quick it was. It was way faster turnaround than we could do with employees. Because basically, I would hand off stuff on a Tuesday afternoon and I would come on Wednesday morning and have something to look at. [...] what we found out is that with internal resources, within design or whatever, we could not meet the pace basically. (P14)

When freelancers were in other time zones, work could be done "around the clock". As we discuss later, working across different time zones could create logistical challenges, but for participants who had short or straightforward tasks that did not involve much back and forth discussion, working with freelancers in other time zones could take what would normally be unproductive hours of the day and make them productive.

*Freelancers enabled clients to focus on higher impact and specialized work*: Participants told us that they wanted to be able to do the jobs that they were trained to do, and not focus effort on tasks that they felt were repetitive, did not require creativity, or did not fully utilize their unique talents.

> I wouldn't have been able to meet my deadline and I felt like, 'I'm just creating this documentation website. That's not a good use of my time because I'm sort of in this real specialized mindset of everything they've trained me for over the last year.' [...] I should be working on the stuff I was really trained for. But this stuff's just really common, generalized; many people can do this work. (P11)

P11 explained to us that while he could have developed a website himself, many people have the skills for that task, and he could provide what P26 referred to as "higher-value add" by spending more time doing work that he excelled at. Some participants also noted that it allowed them to spend more time on tasks that were creative.

*Clients could leverage outside skills they do not have*: Around 2/3 of participants used the freelance economy for tasks that they did not have the skills to do themselves. In fact, using freelancers meant that clients did not need to learn new skills in order to do projects that they were interested in. For example, P23 wanted to do a market research project; however, he did not have the skills to do so, and he felt excited that he could use the freelance economy to fill the gap in his expertise. Using freelancers also allowed clients to fill gaps in their team's expertise as well:

> I would [use the freelance economy for] atomic tasks that needed to be done in a particular time frame, where clearly the skill set is not optimized on our team. (P32)

Translation and localization were two skills that were often needed but were not always available inside the company. Because the freelance economy is global, participants found it particularly useful for these two task types—although as we explore later, there were some challenges that especially impacted clients who hired freelancers for translation and localization. Participants could hire people who were native speakers of languages and had specialized knowledge relevant to the product, such as native French-speaking gamers who would translate English video game console warnings into French with an informal tone. This kind of work fit the criteria in P32's quote. It had a clear endpoint (i.e., translating a specific corpus) and the team did not have knowledge of French.

*Freelancers allowed for faster hiring and onboarding than contract workers*: The speed of onboarding freelancers, particularly international freelancers, was greatly reduced from what it would take to hire someone from a staffing agency. For example, P16 wanted to hire someone in the Philippines, but he felt that if he was to hire the person on as a contract worker, the "amount of work was not worth it" for him or for the individual:

> The biggest benefit was that we were able to get around our procurement pains, especially when we want to hire an individual that is not part of a large organization, and we want that individual specifically, and when they don't live in the US. (P16)

Participants mentioned that hiring a contract worker through a staffing agency could take weeks or even months; whereas hiring a freelancer could happen in a matter of hours. As P43 stated, "We reduce the gap between when I want to start something and when I get something." Freelancers could be brought in on short notice when clients had pressing deadlines that they could not meet.

> The normal process we have of hiring someone for three months as a [contract worker], it's very like bureaucratic and lengthy and kind of represents this big commitment and everything, and then you have to onboard people into the building and stuff, and that just seems like a lot of overhead, so much overhead. (P11)

In addition, when a client wanted to hire a specific individual, who was not part of the freelance economy, that person could sign up for an account on Upwork and start working much more

|  | Not used | 1 job | 2–5 jobs | 6+ jobs |
|---|---|---|---|---|
| *Immediately visible benefits* | | | | |
| Clients can focus on higher impact and specialized work | × | × | × | × |
| Clients could leverage skills they do not have | × | × | × | × |
| *Deferred benefits* | | | | |
| Cost savings | | × | × | × |
| Faster hiring and onboarding than contract workers | | × | × | × |
| Volume, scale, and pace of work are increased | | | × | × |
| Allows for low-risk experimentation | | | × | × |

Table 2. Top benefits for participants with different levels of experience with the freelance economy divided into immediately visible benefits and deferred benefits. We placed an × in a cell if at least two people with the experience level described by the column reported the benefit described by the row.

quickly than if they first had to onboard with a staffing agency. Participants also stated that they enjoyed that freelancers could be brought on for short engagements, like producing one video that takes a couple of days to create—participants did not have to make a large time and resource "commitment" for a task that would not take long to complete.

*5.1.2 Level of experience with the platform.* We also analyzed our interview data to understand the benefits reported by clients with different levels of experience with the platform. Doing so revealed two different types of benefits: immediately visible benefits and deferred benefits. Immediately visible benefits are ones that motivated people to use the freelance economy in the first place. When participants were relatively new to working with freelancers the immediate benefits they reported were that (1) it enabled them to focus on higher impact and specialized work and (2) they could leverage outside skills they do not have. (See Table 2.) Both of these benefits were focused on how clients can use the freelance economy to do tasks they would not be able to get done otherwise and were focused on saving time.

However, (1) cost savings; (2) faster hiring and onboarding than contract workers; (3) increase in volume, scale, and pace of work; and (4) low-risk experimentation were all "deferred benefits" that participants only saw once they gained experience with the freelance economy. While participants noticed cost savings, faster hiring and onboarding than contract workers after they had done one job, the other two benefits—volume, scale, and pace of work were increased and allowed for low-risk experimentation—were discussed only after participants saw efficiency gains from using the freelance economy a number of times. (See Table 2.) Although participants did not talk about these benefits as much if they had not used the freelance economy, it is possible that they did not mention them not because they did not know about the benefits but because they did not deem them important enough to mention. In other words, it could be that people who are more likely to use the freelance economy are the same people who care more about those benefits. Table 2 shows the benefits of hiring freelancers to those with varying levels of experience and introduces two benefits that were not previously discussed: cost savings and low-risk experimentation.

*The freelance economy provided cost savings*: Most of the conversations about cost savings were about hiring freelancers over contract workers hired from staffing agencies, rather than about hiring freelancers over employees. In many respects, participants saw freelancers as similar to

contract workers, except that, as previously mentioned, they were faster to hire and onboard and could work on shorter tasks. In addition, participants cited two main reasons for why the freelance economy provided cost savings over contract workers: not being on location and not going through a staffing agency.

> So whenever we hire [contract workers] who stay on [our] campus, the cost of having them with us, like we have to get a desk, we have to monitor how they work, that itself is a big thing that you do not have to oversee the work being done. (P29)

Overhead is an issue that we will come back to in Section 5.3, as the freelance economy produced different kinds of overhead than staffing agencies. But as P29 demonstrated, it also saved participants from certain types of operational and managerial overheads, such as setting up a physical space for a contract worker and supplying them with the tools that they need to do their job.

> And you're able to get that specific body of work done in a faster period of time, and also, generally at a lower cost because we're not engaging with a really large company who is finding these contractors for this short-term workforce. We're engaging directly through the Upwork platform. (P45)

Interestingly, the cost savings of hiring someone from another country or region were not as frequently discussed as benefits. This could be because one of the key concerns that participants had about working with freelancers was that they wanted to do so responsibly, which we will discuss further in Section 5.2.

*Low-risk experimentation*: Participants who were experienced with using the freelance economy felt that there was a low cost of failure if their engagement with a freelancer did not work out.

> I think the other benefit of this platform is I can also try other freelancers and kind of see how they are. [...] So I guess the nice thing is that like it's fairly low cost to experiment in this format and then, you know, we can also just see like what kind of work quality we get back from different individuals and then sort of go from there without having to commit like an enormous amount of budget all at once. (P13)

In fact, some participants felt the monetary cost and time commitment were so low that it made sense to hire multiple freelancers to do the same job, and then select the work of the freelancer(s) they liked the most.

*5.1.3 Managerial experience.* As shown in Table 3, we found that managers and non-managers saw many of the same benefits, but managers were more likely to talk about (1) cost savings and (2) how the freelance economy provides opportunities for freelancers; whereas, non-managers cared more about (1) faster hiring and onboarding than contract workers and (2) low-risk experimentation. In other words, non-managers primarily cared about wanting to do their jobs faster and try projects and tasks that were new to them. We discussed most of the benefits earlier in Section 5.1.1, with two exceptions—providing opportunities to freelancers and cost savings.

*Providing opportunities to freelancers*: Managers described the freelance economy as a way to "democratize work" (P40) because it allowed them to hire people who were not close to the region that the company was located in. They expressed that they appreciated that they were able to hire freelancers who may have more diverse viewpoints than full time employees. (P18)

> I think there's a lot of really, honestly, some really interesting opportunities in terms of how we're working with freelancers to be on the positive side of the narrative where the work we're doing is not limited to the geography of [city in the West coast of the United States], for example. So talent that physically is not able to be located here, but is otherwise available and has great skill and let's say they're living in the Southeastern United States or San Diego or Fargo, North Dakota. They have an opportunity to engage

| Managers | Managers and non-managers | Non-managers |
| --- | --- | --- |
| Cost savings | Volume, scale, and pace of work were increased | Faster hiring and onboarding than contract workers |
| Provided opportunities for freelancers | Enabled clients to do higher impact and specialized work | Low-risk experimentation |
| | Clients could leverage skills they did not have | |

Table 3. Top benefits for managers (n=15), non-managers (n=21), and the benefits both groups discussed.

> doing work with [our company], and in their economy, I think it could have actually
> has the opportunity to create a positive impact. In their personal economy, but also in
> their local economy too. (P35)

They felt that they had access to highly skilled people whom they would not normally have access to, and they also had ideas about what the freelance economy could do for people in less well-off regions. Some of our participants grew up in the Global South, and they felt that the freelance economy could bring economic benefits to people in the countries they were from, and they typically tried to focus their personal hiring practices so that they were hiring freelancers from those countries. They also expressed that they felt that this was also good for freelancers because in addition to the economic opportunities, they had the freedom to work wherever they would like, although as we discussed in the related literature, the reality is more complicated. As we discuss in the responsible use section in 5.2, other participants had concerns about the effects of globalization.

*Cost savings*: Interestingly, there are tensions between the two benefits that managers uniquely perceived (i.e., cost savings and providing opportunities for freelancers), although these tensions were not always acknowledged by managers. The primary tension was between the idea that the freelance economy was mutually beneficial to freelancers and the clients that hire them—and that they could use the freelance economy to pay freelancers less money than they might pay a contract worker or employee, especially if the freelancer was located in an region where the cost of living was lower. As we explore in the concerns section (5.2), many participants felt uneasy because they were uncertain about how much to pay freelancers and they wanted to make sure they were working with freelancers responsibly. And one notable difference between managers and non-managers was that some non-managers actively disliked the rhetoric around cost savings; they expressed that they did not care if the company was saving money because it did not benefit them personally and that they were more concerned about freelancers' well-being as we discuss in the responsible use section in 5.2.

## 5.2 Concerns

Our interviewees expressed that their key concern with hiring freelancers is how to do so responsibly. This was a common topic where employees voiced that they were stuck between their responsibilities to their company and the freelancer. They wanted to be sure they gave the freelancers a fair deal while being a responsible steward of corporate resources.

*Responsible use*: Our participants expressed that they *did not know how much they could or should pay freelancers*. As we discuss later, this issue was also related to both task definition and management overhead. We'll see that concerns about payment amount led to concerns about

companies seeking out cost savings which led to concerns about the future of the freelance economy and the workforce as whole. A "champion" of the freelance economy said to us:

> So, nobody knows how much to pay for a job. No one has the first idea. And I know that Upwork is not allowed to tell us, for some reason, how much we should be paying for a job, but without that, there's a huge amount of uncertainty. $250 for an icon, is that a lot or a little? I have no idea. (P18)

P18 showed us about 10 icons that he had different freelancers make for the same product, with the idea that he would pick the one he liked the most. (In the end, he did not use any of them.) Even though he had extensive experience with the platform, it was difficult for him to decide what to pay. Nonetheless, other employees (e.g., P37) relied on P18 for help with payment guidelines.

Participants had further anxiety about how much to pay people in countries with different living wages and whether to pay people different amounts who lived in different parts of the Us.

> The problem with the gig economy, it's a worldwide economy. You have people from Bangladesh where $5 is a lot, competing against people from France, for instance, where $5 is nothing. When they both come to you as the creator, you'll find people that are going to have competing offers, one of them could be $5, the second one could be $5,000. They are supposed to do the same thing and they would probably do the same thing. It's weird because it's tough for me pay someone only five bucks. You see what I mean? It's not slavery, but it's... There is something missing in the story here. (P43)

Furthermore, they often said they wished there were guidelines for "tiers" of payment based on the freelancer's experience level. This wish was borne out of a desire to give freelancers a "fair deal", which they felt meant not promoting a culture in which freelancers were pressured to lower their rates, paying freelancers a rate that was at least a livable wage, and providing freelancers with benefits and opportunities for professional growth.

There was a tension between their responsibility to the company (i.e., not to spend too much money) and their desire to give freelancers a fair deal—especially because they did not know what a fair deal was and whether that aligned with the company's spending policies or expectations (and what the policies or expectations were). They felt there little guidance. Participants simply did not know how much their managers would let them pay someone or how the payment process was approved. Thus, not only do an employee's notions of fairness affect the decision of how much to pay, but their managers' notions of fairness do as well:

> My fear here is overpaying. Like, if I throw a grand at them, is someone at [company] gonna come follow up and say, "What'd you pay on that for?" [...] So we feel very lost on what things are worth. And there's a real human on the other side. And so, I don't want to lowball that person who's really helping me a lot at work. (P21)

Although P21 had expressed to us that he was concerned about paying freelancers a high wage, his concern was not entirely altruistic—he was also concerned that he would no longer be able to work with the freelancer if there was someone who could pay the freelancer more. This concern was in part due to the bidding process, which was a double edged sword. On the platform, clients have the option of setting how much they will pay for a task (either hourly or a fixed rate for the project), but freelancers still have the option to put in bids, which are sometimes substantially higher or lower. P43 described how this bidding process could lead to a "race to the bottom":

> We should not have a bidding process. We should say, "Okay, we have this job to do. You're going to get $5,000 for that." And then, people that are interested can come and say, "I'm interested," but there is no more discussion about the price. (P43)

Concerns about how much to pay led to concerns about cost savings, which in turn, led participants to worry about what the growth of the freelance economy meant for their own jobs. Despite being explicitly told they would not be laid off in favor of hiring a freelancer to do their work for them, a minority of our participants worried that would happen anyway.

> I did not like to hear the cost savings. It was always a turnoff, like, "Am I cost savings, huh? So you're trying to run me out of the building here?" [...] It just sounds like I'm undermining someone. (P21)

Some participants were unconcerned because they were hiring freelancers to do something so different than their own job or because they had highly specific skills or tacit knowledge about the business that a freelancer would not have, so they felt their jobs were secure. But they also may have not expressed as much concern to the interviewer because, despite making it very clear that the team that set up the pilot program with Upwork would not have access to any identifying information, they may have nonetheless felt concerned about repercussions.

Participants worried about how the future of the freelance economy will impact members of the future workforce's job prospects:

> As those people [contract workers hired via staffing agency] get laid off because we are migrating to a gig workforce, what happens to that entry level person? I worry about that because I have kids. (P12)

Participants expressed that freelancers were already expected to be experts in their particular areas. They worried that the freelance economy did not provide freelancers with opportunities for professional growth. Other participants expressed that they were concerned that freelancers were in a precarious position with regard to job security and having a steady income. In all of these cases we see, again, that employees felt a responsibility towards the freelancer and their well-being.

> I think as a [client], it's great. It's cheaper, it's faster, it's lower commitment. I don't really have to commit to anything. It's more or less on demand. I would not want to be a [freelancer]. I feel like there's a lot of risks I would take as a service provider [freelancer] versus working in a corporation. I appreciate the trade-offs as you have your own hours and your own time, but less security. It's harder to differentiate. I feel like the prices are all being commoditized and it just being pushed down and down with each new feature that comes out or each new service that comes out. I would say, as a consumer [client], that's awesome. As a service provider [freelancer], I wouldn't do it. (P26)

While, like P26, some participants expressed they would never want to be a freelancer, we did have participants who had been freelancers in the past, and one participant had decided that she would work as a freelancer on the platform for a little while before using it to hire a freelancer herself. We conducted a followup interview with her after she had begun using it, and what she said aligned well with our findings about clients—the problems that she had mirrored the problems that freelancers had in part due to difficulties with task definition which we describe next.

There was a tension between how participants wanted to use the freelance economy and how they actually used it—they wanted to use it responsibly but they also did not always feel that they lived up to their own standards. Participants frequently brought up their concerns about use of the freelance economy, but none of them said that it stopped them from using it or would prevent them from trying it, if they had not tried it already. In part, this was because participants were encouraged to use the program by their managers and members of the team that setup the pilot program with Upwork. But also participants felt that learning to use the platform responsibly was an iterative process. As we discuss in our section on task definition (in 5.3.1), participants blamed

**How would you describe the work to freelancers?**

Include an overview and a list of key deliverables.

> I'm looking to complete Desktop Software Development work. I anticipate the project will last less than 1 week.

✓ Must be at least 200 characters                                    4889 characters left

**Example**
I need a PowerPoint presentation that will be presented on a projector in front of 150 people in 2 weeks. The presentation must be in PowerPoint format, be approximately 50 slide, and includes illustrations and images.

Fig. 1. Screenshot of user interface with suggestions for how clients could describe a job.

themselves when tasks were not completed to their satisfaction, but that did not deter them from using the platform either—instead, these were taken as opportunities for growth.

In summary:

(1) *Clients had concerns about the future of work*
(2) *Clients wanted to pay a fair amount*

## 5.3 Transaction Costs

We first describe the key transaction costs participants experienced when we aggregated all of our data together: problems with task definition and management overhead. We then looked at transaction costs reported by interviewees at different levels of expertise with the platform. We found that there were ongoing costs that everyone experienced, and upfront costs that were part of the learning process. And lastly, we discuss how managers wanted consistent results; whereas non-managers were more concerned with management overhead.

*5.3.1 Overall.* In this section, we discuss the most frequently mentioned issues.

*Task definition*: Recall, that we define "task definition" to be the act of carving out a piece of one's work, describing it in a job description, defining the milestones, setting the pay rate, and putting it on a freelance platform. This is a transaction cost that clients had to bear almost entirely on their own. Clients were shown the interface in Fig. 1, which provided some guidelines for task definition, but were generally insufficient for people who not experienced with the platform. Furthermore, it was difficult for clients to find tasks that others had made to base their own descriptions off of.

We saw many instances of participants hiring people to do tasks that they could not do themselves, such as technical writers hiring videographers—as mentioned earlier, this describes about 2/3 of our participants. The irony was that the very reason that brought the client to the platform—to get something done they could not do themselves—meant they were also unfamiliar with managing people working in that role and they were less able to describe what they wanted done, both of which made a positive outcome less likely. For example, although P43 was a programmer, he had significant issues because he had hired someone to do a programming task he and his team were mostly unfamiliar with how to do themselves, and he felt that he had "to define what you want and pray to get what you expect" and could not course correct when things went wrong. In the end, he had to throw out the work, and his team scrambled to get the project done and produced a lower quality product than they had hoped for. In contrast, P11 was a programmer who hired a freelance programmer to complete a website for him that he could have completed himself, so it was not difficult for him to specify what he wanted.

Task definition issues had cascading effects: when clients did not know how to specify what they wanted they also did not know *how to select freelancers* and determine whether they could do what the client wanted, or what would constitute a *fair amount to pay*.

> I think you certainly need to know how to do the work for the most part, if you really want the best results. Like I wouldn't be able to provide that laundry list of what I was expecting if I hadn't already had some experience like search optimizing a blog and if I didn't already have a good sense of like editorially how should things sound. (P13)

Participants said that they did not know how to course correct when things went wrong because they were *unclear on how much they could manage* freelancers. The training that employees took before they were able to use the platform had confusing legal language that led to many employees to feel unclear about what it meant to "manage" and whether they were allowed to do so. Here we see another tension from being stuck in the middle. The employee wanted to obey the confusing guidelines provided by the company but they also want to help the freelancer get the job done by providing guidance. They felt that with contract workers hired from staffing agencies they could have iterative and interactive processes in which they refined what the task entailed. With freelancers, however, clients often felt that they had to define the task perfectly ahead of time because they could not interact with the freelancers in the same way.

> I've never felt the need to manage what time he's working, where he's working. And I think they're very explicit about that in the Upwork Agreement. You agree that you're not going to tell him when and where, and how to work, what kind of computer to use. (P11)

However, some participants took these restrictions to mean that they could not manage at all. As we mentioned earlier, P11 and P43 had freelancers do similar tasks, but had very different experiences, in part because of how much they felt they could manage freelancers.

> I would have loved to [manage the freelancers]. But definitely, on Upwork, we are not supposed to do that. I get why. But when you are working with a 'bad' freelancer, I would have loved to be able to drive him more. We'll get more frequent checkpoints to make sure that they understand what we want, etc. but that's not the case. *You have to define what you want and pray to get what you expect.* [...]
>
> It's not management. I just want to make sure that what they will produce is what I expect. I call that a checkpoint: clearly checking as we work once a week. "Where are you? You are on time. What you did was what I was expecting." "If it's not the case, then we can define." "Maybe I was unclear. Maybe you misunderstood. Let me rephrase or be precise in what I want." That's what I call management. Not the way they do it. I don't care. They can do that wherever they want, with whatever way they want. I don't care. I just want to make sure that checking the deliverables is more often than just at the milestones. [...]
>
> When you hit the milestone, if there is a problem, it's probably too late because they maybe worked two weeks. If something is wrong, we call that the "tunnel effect". You enter the tunnel and you get everything at the end of the tunnel. But while they are inside this tunnel, there is no way for you to help them go back to the correct road. (P43)

When the product was not what participants were expecting, often as a result of being stuck between navigating corporate policies and guiding the freelancer, they tended to blame themselves

for not defining the task well enough. As a result, many were still interested in using the freelance economy because they felt that they needed to improve themselves, rather than there being an inherent issue with the platform, the freelancers, or the corporate policies. Not all that infrequently, participants mentioned (generally rather offhand) that they had to completely throw out the work that they received, and they paid the freelancer and gave them a good rating because it was not their fault. For example, P15 had to throw out the work of multiple freelancers:

> I don't know if it was like full five stars or not, but I rated them anyway because I felt like, you know, they depended on Upwork in some sense for their work. They still got the job done even though we weren't necessarily planning to use their work, but they still got the task done. So because of that I was, you know, I felt obligated to still rate them as needed. [...] It didn't really work because I am not personally technical. (P15)

P15 went on to say that she felt that she could have filtered candidates better if she had had more technical experience. P28, one of the strongest critics of the freelancer economy that we spoke with, described some of the failures she had experienced as "not a fair ask" because how would person in another country have tacit knowledge about the norms at her company? As a result, though, it made ratings less trustworthy. In general, our participants said that they did not look at the ratings, but at the portfolios of prospective freelancers.

Another issue for task definition was that our participants often worked with substantial amounts of *IP (intellectual property) and PII (personally identifiable information)*, and how they interacted with these data was also impacted by GDPR. Participants often described that they did not know how to divide up tasks such that they could avoid sharing IP/PII with freelancers, and it would take substantial work to determine how to do that; so it was easier to do a task themselves.

> How do you know how to carve out that specific kind of work where they're not getting exposure to this highly sensitive data and information, yet they have enough information to produce whatever it is that you need them to produce, be it, say, a survey or an engagement survey or a video or some kind of content? (P45)

Some participants simply did not use the platform at all because of they could not imagine how to divide up the work to avoid giving the freelancer IP/PII. Others needed help from the Freelancer Services team to determine how to do it. In either case, employees were stuck between corporate policies around IP and PII (some of which stemmed from GDPR requirements) and adequately defining their task for a freelancer to do it.

In sum, our participants had the following issues with task definition:

(1) *Clients do not know how to define tasks*
(2) *Clients do not know how much to pay*
(3) *Clients do not know how to vet freelancers*
(4) *Clients believe they have restrictions on how much managing they can do*
(5) *Clients work with too much IP or PII or have concerns about GDPR*

*There is significant management overhead to working with freelancers*: Our last major theme was about overhead. Working with freelancers had different overhead than working with contract workers hired from a staffing agency or with other employees. As mentioned in the sections on responsible use (in 5.2) and task definition (in 5.3.1), clients had to determine *how much to pay freelancers*, which was not overhead that any of the employees we spoke with had to manage when working with contract workers. Furthermore, they had to *select the freelancers* themselves which they did not normally do with contract workers as the staffing agency usually did that. In order to vet freelancers, they often had to examine their portfolios and see who they had worked with—they tended to look for freelancers who had already worked with their company or similar companies

because they would be more likely to have *tacit knowledge* about the norms and culture of the company. Some participants had to prepare extensive materials for freelancers to teach them about the brand standards and expectations of the company or else they ran the risk of having to answer the same questions over and over again, such as P31, who was using freelancers to translate text from English into ten different languages:

> I have to post the same job for each language: that means for 10 languages I posted this job 10 times. I have to respond to questions from different gig freelancers. Most of time the question is the same or similar. I just write the answer once, but I have to copy paste it to each person's channel. (P31)

P31 said she received "a few hundred emails from the Upwork platform" and that it was overwhelming. However, with contract work, she would have worked with one person and that person would have managed the 10 translators for her, and that person would have likely had knowledge about her company's workflows already.

Working with people across time zones was also difficult for participants. Even though working in different time zones meant the jobs could sometimes be completed quickly, it also meant that there could be substantial delays when freelancers needed a significant amount of feedback.

> Since I was already working 80 hours a week, I was up at midnight every night when [freelancers] were messaging me. If you're trying to do it on just West Coast time, just expect the turnaround times to be slower because it is going to be a once a day back and forth kind of email with a lot of the freelancers, at least the ones we used. (P39)

Participants were drawn to the freelance economy because they wanted to save time, and working odd hours in order to be able to communicate with freelancers (for the participants who believed it was even possible to give freelancers feedback) ran contrary to that benefit.

Another major issue is that *freelancers do not have access to internal software or databases*. For example, P11 described having the freelancer send him zip files of his code, and then P11 would have to check in the files to the company's internal source code management software repository. (In actuality, P11 could have given the freelancer access to this repository, but he was unaware that was an option.) This method was difficult and created issues with tracking the provenance of the code because P11 would check it in under his account even though the freelancer wrote the code. P17 expressed that she did not feel she was able to use the platform because:

> Like we're not a team that works from home a lot and it's because throughout the day we're always kind of running in and out of each other's offices and things. So it's hard to think about how can I break off some of this work for someone in a way that's like I'm not communicating with them or like checking in too much. (P17)

P29 also wished that freelancers could come to the company's campus, which was in tension with the idea that the freelancer economy provided cost savings because freelancers did not need to be hosted on-site.

To summarize, these are the transaction costs that we found that related to management overhead:

(1) *Clients do not know how much to pay*
(2) *Clients do not know how to vet freelancers*
(3) *Freelancers do not have tacit knowledge about the company*
(4) *Working across time zones slowed progress*
(5) *Freelancers do not have access to internal tools or resources*

*5.3.2 Level of experience with the platform.* When analyzing our data from the perspective of participants' level of experience with the platform we found that we could categorize the transaction costs in terms of upfront costs and ongoing costs. Some transaction costs were only prevalent for

|                                             | Not used | 1 job | 2–5 jobs | 6+ jobs |
|---------------------------------------------|----------|-------|----------|---------|
| Responsible use                             | ×        | ×     | ×        | ×       |
| *Ongoing costs*:                            |          |       |          |         |
|    Task definition           |          | ×     | ×        | ×       |
|    Selecting freelancers     |          | ×     | ×        | ×       |
|    Management overhead       |          |       | ×        | ×       |
| *Upfront costs*:                            |          |       |          |         |
|    Do not know how much to pay |        | ×     | ×        |         |
|    Restrictions on managing  |          | ×     | ×        |         |
|    Lack of continuity/consistency of quality | × | × |      |         |
|    Work has IP/PII or issues with GDPR | × |     |          |         |

Table 4. Top concerns and transaction costs for participants with different levels of experience with the freelance economy measured in terms of number of jobs posted, and divided into responsible use, ongoing costs, and upfront costs. We placed an × in a cell if at least two people with the experience level described by the column reported the benefit described by the row.

participants who had not completed many jobs and were still learning to use the platform; we refer to these as *upfront costs*. These costs were associated with learning how to use the platform, and some, namely concerns about lack of continuity/consistency of quality (as explained later in this section) or work having IP/PII or issues with GDPR. These costs potentially prevented people from even using the platform in the first place. Notably, participants who had used the platform even once did not discuss IP/PII as a major concern. There are two explainations for this. First, it may be that participants who mentioned IP/PII were genuinely unable to use the platform because of the nature of their work, such as P36, who worked with sensitive data about cyber crimes. However, it may also be that some of these participants had misconceptions about IP/PII and the ones that went on to use the freelance economy found that they were mistaken. The other upfront costs, such as not knowing how much to pay and learning how much they could manage, were only apparent after clients had used the platform at least once. These costs might not have been obvious before ever hiring a freelancer, but after a client posted one job they experienced them. Thus, it does seem possible for some employees to navigate around some of the transaction costs with experience.

Task definition, selecting freelancers, and management overhead were examples of *ongoing costs* that were not necessarily readily apparent to participants who had not used the platform, but once they had experience, they noticed them and the problems persisted. More experienced clients often had established relationships with freelancers that they worked with frequently, which reduced some of these ongoing costs, but they still found it difficult to use the platform whenever they had to find new freelancers to work with or define new types of tasks.

The new transaction cost that we introduce in this section is *lack of consistency/quality*, which was less of a cost once participants realized that it was common to rehire the same freelancer multiple times. As we discuss in the next section, this cost was primarily a concern for managers. P26 explained this issue: "the output is very dependent on the individual you work with, because it's not necessarily like you're going to a company with company standards." Participants worried that they might invest a significant amount of time in teaching a freelancer the company norms,

| Managers | Managers and non-managers | Non-managers |
|---|---|---|
| Lack of consistency/quality | Task definition | Do not know how much to pay |
| | Responsible use | Do not know how to vet freelancers |
| | Work has IP/PII or issues with GDPR | Freelancers lack access to internal tools |
| | Management overhead | No reason to use it |
| | Restrictions on management | |

Table 5. Top transaction costs for managers (n=15), non-managers (n=21), and the transaction costs both groups discussed.

and thus might have successfully navigated one tension between the company and the freelancer, and then have to start over again with a new freelancer if they did not want to work with the person again or if the freelancer was unavailable in the future. Furthermore, P15 wanted to be able to get in contact with freelancers after jobs had ended if he needed information about why a freelancer had made a certain design decision. P14 wished she could have freelancers "on retainer". Participants were even concerned that freelancers might be "poached" by others in the company:

> Well, do I want to recommend my freelancer out [to people in other teams at the company]? Not really. I don't want him to get taken away from us or go to, let's say, marketing. God forbid marketing grabs him, and when they slap down three times as much money per thing and then he's like, "No way am I coming back." It's not like I don't trust him, but I wouldn't come back if I was him. (P21)

P21 had a long-standing relationship with a videographer but was concerned about recommending him to other people in the company—while this was not a particularly common issue, we did have other participants who expressed the similar things. It was more than just wanting to work with the same person because they were good at their work—sometimes participants had rapport with the freelancers, and at least in one case had met in person and even knew about each other's families. For these participants, the role of the freelancer was more than someone they were managing (to the extent that they could)—the freelancer was seen as a colleague and friend.

*5.3.3 Managerial experience.* The only transaction cost that was reported uniquely by managers was a fear of lack of consistency and quality in the work freelancers produced. We found that non-managers had significantly more transaction costs. More specifically, non-managers were inexperienced with deciding how much to pay people and selecting who to hire, and this lack of experience was reflected in their difficulties with the freelance economy. Non-managers also struggled with finding ways to work around issues with providing access to internal tools.

Another transaction cost unique to non-managers was simply that they felt that there was *no reason to use the freelance economy*. For example, P41 was on the team that helped build the Upwork pilot program and had never used it because "the nature of the things that I do does not lend well to freelancers". For the most part we did not find that the people who said they had no reason to use it were people who had *never* used it—instead, they had used it a small number of times for either pet projects or projects with very tight deadlines that they needed help on, and once the project was done, they had no need for it anymore. They did not see it as fitting in with their day-to-day tasks. For example, P19, an economist, used it to hire an academic that he knew to write up a summary of

the academic's research. He planned to use it again to hire someone else for another report that he needed, but otherwise he did not see a use for it. Similarly P39 used the platform to hire a large number of subject matter experts for a product evaluation, and even though the work went quite well, he had not used it because "I haven't had another project since then, and honestly I don't know when I will."

We conclude this section with a quote from P35, a senior member of the Freelance Services team, who said that it was natural that there were "times of tension between a desired use and [how it was designed to be used]". We agree. The benefits, such as lower overhead for hiring and onboarding, were often in tension with the transaction costs, such as higher management overhead for freelancers than for contract workers. While cost savings was sometimes described as a benefit, participants were also concerned about paying fair wages. And even though the freelance economy was appealing because it allowed clients to leverage skills they do not have, they also struggled with task definition as a result.

## 6  DISCUSSION

Prior work [17, 23] has shown that on-demand economy platforms are characterized by a few requesters who are responsible for posting the overwhelming majority of the work. This results in the requesters holding the power in the market [6]. We found that clients did not take advantage of the power asymmetry to the degree that one might have expected and stated instead that they wanted to reduce the gap in power. In order to help clients (and freelancers) achieve this goal, we discuss implications for practice—what companies that hire freelancers and what freelancer platforms can do to address these power asymmetries and reduce the transaction costs that stem from them. There will need to be a multi-pronged effort to tackle issues of power asymmetries. Perspectives from different disciplines are complementary and each part of a solution. We believe our research to be one piece of that puzzle.

Rosenblat and Stark state that "Policymakers should take note of the power of automated systems to incentivize, homogenize, and generally control how workers behave within the system despite claims to systematic freedom or flexibility" [32]. However, Doorn [5] argues that government regulation and litigation have not done much to change companies' behaviors or improved the lot of platform laborers. Instead, Doorn suggests that corporate self-regulation might be a better avenue for change if companies involve workers in the decision-making process. De Stefano argues, "Calls for self-regulation in this context are worth exploring but the fundamental voice of workers must not be overlooked and self-regulation cannot be unilaterally set by businesses or aimed at satisfying only the 'consumer' part of the stakeholders" [4]. Wood et al. [39] found that unions are not currently "important to the collective organisation of online freelancers and only a minority of workers feeling unions would be beneficial. The apathy most workers feel towards unions stemmed from a combination of pre-existing perceptions of unions, identification with being 'freelancers' and 'entrepreneurs' and an expectation that the benefits of unionisation would not outweigh the risks in terms of job loss and greater taxation." Researchers have called for more study of how platforms control the information that both sides of the market have access to [1]. Some researchers have suggested design interventions for platforms, primarily for Amazon Mechanical Turk (e.g., [14, 18, 33]). In summary, change can happen through laws, corporate self-regulation, the organizing efforts of freelancers, and redesign of on-demand platforms; and we believe all these avenues for change should be pursued. Based on the data we gathered, we propose corporate policies and platform redesigns that could effect positive change in the freelance economy.

## 6.1 Giving freelancers a fair deal

The most important issue that came up across the concerns and transaction costs (i.e., responsible use, task definition, and management overhead) was that clients did not know how much to pay freelancers. Clients and freelancers would benefit from any number of possible solutions. One would be for companies or platforms to institute a minimum rate to pay for certain types of work. Similarly, our participants frequently suggested pay ranges based on freelancers' levels of experience. A difficulty in implementing suggestions or requirements for fair wages is simply determining what a fair rate is, particularly given that some jobs are paid hourly, whereas others are a fixed amount regardless of how much time the task takes. The global nature of freelancing also adds complexity in determining a fair wage, although Silberman et al. [34] argue that a minimum rate could be based on the minimum wage at the client's location. A survey of USA-based Amazon Mechanical Turk workers found that workers generally felt that $15 USD an hour was an appropriate rate [36]. In addition, in order to determine what fair rates should be, we urge platforms to publicly publish data on wages, which would allow companies to compare themselves against other companies or against the average rate.

Participants were also concerned about providing freelancers steady income and benefits. The company the participants worked at had a "talent pool" that allowed people to find freelancers who had previously been hired by the company (and would allow them to provide freelancers with more steady work—although it would also promote a "rich get richer" scenario). However, it was not used by many participants. They found it overwhelming because there were so many people in the talent pool. Multiple participants suggested that platforms could use a recommender system to suggest freelancers instead.

The most obvious solution is that platforms could classify freelancers as employees and provide them benefits, as many platforms have begun to do (e.g., Upwork Payroll). Platforms have reported that one reason for hiring workers as employees is that employees can receive extensive training [21]. CSCW researchers have also suggested that there should be computer-supported career development opportunities for on-demand workers and other workers who typically have less power [16]. Client companies also could provide pathways for freelancers to be hired as full time employees. However, we know that people freelance for a variety of reasons, and not all would like to work with a company as an employee [8]. Therefore, more organizations could support portable benefits, which allow benefits to be tied to individuals rather than the companies that they work for. In other words, benefits can be taken from job to job and thereby avoid tying freelancers to any one platform.

## 6.2 Implications for the future of work

As we noted, clients had concerns about the stability of their own jobs and how the future of work would more generally change society. Whether employees have job security is tied to the culture of the company that they work for, but we have five suggestions for improving company norms around hiring freelancers. First, use the freelance economy just for tasks that would not be completed otherwise by an employee. Since, it may not always be readily apparent what can be done in-house, one participant suggested that companies develop something similar to an internal LinkedIn, which would allow employees to readily locate which other employees have the skillsets they need for a task. Second, have different parts of the company (like the Freelance Services team at the company we researched) come together to put in policies to promote responsible use. In the company we researched, this team included people from product groups, procurement, legal, and human resources. Third, provide better performance reviews for people who use the freelance economy responsibly. We want to stress that we are not suggesting that people simply use the

freelance economy "because they can". Therefore, we suggest that employees' reviews could be tied to the rating that the freelancer gives them. Although, as noted in Hanrahan et al. [14], ratings can be biased against women and racial minorities, so the implementation of our suggestion must be carefully considered. Fourth, provide employees with information about when it is appropriate to use the freelance economy versus other types of labor. The freelance economy is most appropriate for short projects that can be clearly defined. And finally, provide employees who are not managers with training on how to become managers. For the company that we researched, the video training that employees received before they were able to use Upwork was very brief and emphasized how they were not allowed to "manage". However, as we saw, clients often do run into problems if they are too hands off and, conversely, some do manage the freelancers. We believe that providing employees training on the types of managing that they can do would create better experiences for freelancers and clients alike, and it would provide training opportunities for employees would like to become managers. Freelancers are negatively impacted when employees cannot define tasks well or manage appropriately.

## 6.3 Examples and guidelines for task definition

Task definition was a key transaction cost that clients faced. It is in the best interest for all parties involved in the freelance economy—clients, freelancers, and platforms—to have tasks defined as clearly as possible. It is in the clients' best interest to make sure they clearly specify the projects and milestones to ensure a quality output. Freelancers want well-defined tasks to avoid wasted work, for which they may not be paid or may receive bad ratings. Finally, platforms want well-defined tasks to ensure that transactions on their platform operate as smoothly as possible to entice repeat use. Thus, we suggest that clients' companies *and* platforms engage with freelancers to give examples of good and bad task definitions, in a variety of problem domains, for clients to use as models. These examples would provide crucial guidance to clients, especially in the case where the task is one they do not know how to do themselves. Employees need incentives to share examples of job descriptions that did and did not work well—especially in the case of the ones did not work that well, as employees may be too embarrassed to share them.

Companies in very different domains may use the same freelancer platforms for similar tasks (e.g., video creation), but we can imagine that the clearest ways to define the tasks might differ by company. Thus, although we suggest that platforms provide some guidance for task definition, companies should also provide their own guidelines, including information about what is not appropriate to ask freelancers to do. Although our participants were often annoyed by the compliance checks that they had to go through before a job could be posted, these compliance checks are still necessary because freelancers are located across the world and are subject to different laws. We believe another benefit of having companies provide their own help with task definition is that it allows more portability between platforms. Lastly, there is a legal risk to platforms if they provide task definitions that result in poor work.

## 6.4 Access to tools and IP/PII

We found that clients need a better understanding of what is intellectual property and personally identifiable information. Platforms and client companies may also want to investigate whether there is a legal and ethical way for freelancers to gain access to IP/PII.

In order to have better collaboration with remote freelancers, companies should also give freelancers temporary (i.e., for the duration of the project) access to internal tools and resources. For example, our participants' company gave access to the internal chat client, which greatly improved collaboration. Version control systems are another type of tool that our participants noted were helpful for collaboration.

## 6.5 Highlighting benefits

To create a more egalitarian marketplace, freelancers need more power. One way to do that is to provide more work and more different sources of work. Making the benefits of the freelance economy more clear could attract more clients to the market. Doing so would provide freelancers with more choices in who they work for and would not be as beholden to taking whatever wages a few clients give.

If companies want their employees to use the freelance economy, companies may want to educate them about deferred benefits (i.e., cost savings [for managers]; faster hiring and onboarding; higher volume, scale, and pace of work; and low-risk experimentation). In addition, we suggest that companies provide a special budget for clients' first job postings, which allows them to experiment in a low-risk setting.

## 6.6 Limitations and future work

First, participants were all from one large software company. Clients at other companies of different sizes, in other industries, and with varied work cultures may have very different experiences. A second limitation is that the company had a cross-functional Freelance Services team dedicated to helping employees learn how to use Upwork (although not all participants knew about or used their services)—and most companies do not have such teams. We do suggest that companies create similar teams in order to implement policies that better the experience for clients and freelancers. Third, participants only used one platform (i.e., Upwork), although some had used other platforms in previous workplaces. Different platforms have different affordances. However, we believe our findings are broadly applicable across platforms because they are focused on best practices. And lastly, we acknowledge that the work of implementing ethics into corporate policies and practices in the tech sector is currently constrained by what Metcalf et al. [29] call the logics of market fundamentalism (i.e., an undue focus on how ethical policies impact "the bottom line"), meritocracy (i.e., a belief that technologists are the best suited to solve ethical dilemmas), and technological solutionism (i.e., framing ethics as a problem that can be "solved once and for all" by technology). While there are no easy solutions, our hope is that the tech industry will acknowledge and seriously grapple with tensions between ethics and profit, such as the ones we have described in our work.

## 7 CONCLUSION

The key benefit to clients in using freelancers was to save time, and this time savings came in a variety of ways. First, it came through simply having more people available to work. Having access to more brainpower meant more work could get done faster. Second, it came through clients using their time more efficiently. For example, clients could hire a freelancer with the skills necessary for the task at hand when the client might not have had those skills themselves. This saved the client the ramp up time of learning new skills, which, in turn, allowed the client to focus their time on the core parts of their job, utilizing the specialized skills they already built up. Finally, there was less overhead and faster on-boarding time in hiring a freelancer than using a traditional staffing agency. With these myriad benefits, one might have expected clients to rampantly hire freelancers to improve the speed and efficiency of their business while reducing costs. Instead clients moved more cautiously due to their concerns about responsible use and transaction costs like task definition and management overhead.

We also saw that clients care about working with freelancers responsibly both in terms of making sure the freelancer is getting a fair deal and in terms of contemplating what the growth of the freelance economy means for themselves and their careers. It is not the case that clients are

simply trying to take advantage of labor arbitrage and just get work done cheaper. In fact, some non-managers were explicitly turned off by talk of cost savings.

A common use case is for clients to work with freelancers when they need a task done that they do not know how to do themselves. We found that in this case clients do not know how to adequately describe the task, how to set milestones for it, how to vet freelancers who apply, or how to set the payment amount. Thus the very reason that brought the client to the freelance platform was a key reason that the outcome was not what the client hoped for and the work output of the freelancer was discarded. Often in this case the client blames themselves for this outcome. Since clients were unclear as to how much they could manage and how they could manage, they found it difficult to course correct when a project got off track. This, combined with the general amount of overhead clients faced in managing freelancers, only exacerbated the problem of task definition. If the task was not clearly defined from the beginning it was hard to make changes during the course of the project.

In order to address these issues, we have made a number of recommendations, all which come back to the issue of responsible use, which was the most prevalent of all of the issues that clients faced. Recently the plight of the workers in the on-demand economy has received much attention from the media and academics alike. We agree that workers should have better benefits and more rights. We argue that creating a marketplace with a more equal power dynamic between clients and freelancers would also help freelancers and is not mutually exclusive or at odds with efforts such as unionizing freelancers or changing legislation. Companies and platforms have the power to create a more equal power dynamic, and we urge them to take our suggestions into consideration. We also urge the CSCW community to broaden its research to further examine the freelance economy and the experiences of clients.

## 8   ACKNOWLEDGEMENTS

## REFERENCES

[1] Ajay Agrawal, John Horton, Nicola Lacetera, and Elizabeth Lyons. 2015. Digitization and the Contract Labor Market: A Research Agenda. *Economic Analysis of the Digital Economy* (April 2015), 219–250. https://www.nber.org/chapters/c12988

[2] Brett Caraway. 2010. Online labour markets: an inquiry into oDesk providers. *Work Organisation, Labour & Globalisation* 4, 2 (2010), 111–125. https://doi.org/10.13169/workorgalaboglob.4.2.0111

[3] Premilla D'Cruz and Ernesto Noronha. 2016. Positives outweighing negatives: The experiences of Indian crowdsourced workers. *Work Organisation, Labour and Globalisation* 10, 1 (2016), 44–63.

[4] Valerio De Stefano. 2015. The Rise of the Just-in-Time Workforce: On-Demand Work, Crowdwork, and Labor Protection in the Gig-Economy. *Comparative Labor Law & Policy Journal* 37, 3 (2015), 471–504. https://heinonline.org/HOL/P?h=hein.journals/cllpj37&i=507

[5] Niels van Doorn. 2017. Platform labor: on the gendered and racialized exploitation of low-income service work in the 'on-demand' economy. *Information, Communication & Society* 20, 6 (June 2017), 898–914. https://doi.org/10.1080/1369118X.2017.1294194

[6] Arindrajit Dube, Jeff Jacobs, Suresh Naidu, and Siddharth Suri. 2020. Monopsony in Online Labor Markets. *American Economic Review: Insights* (2020). https://doi.org/10.1257/aeri.20180150

[7] Ingrid Erickson, Deepti Menezes, Raghav Raheja, and Thanushree Shetty. 2019. Flexible Turtles and Elastic Octopi: Exploring Agile Practice in Knowledge Work. *Computer Supported Cooperative Work (CSCW)* 28, 3 (June 2019), 627–653. https://doi.org/10.1007/s10606-019-09360-1

[8] Alessandro Gandini. 2015. Assessing the Job Quality of «Digital Professions»: A Case of Extreme Work. *Studi di Sociologia* 53, 4 (2015), 335–352. https://www.jstor.org/stable/43924096

[9] Mark Graham, Isis Hjorth, and Vili Lehdonvirta. 2017. Digital labour and development: impacts of global digital labour platforms and the gig economy on worker livelihoods. *Transfer: European Review of Labour and Research* 23, 2 (May 2017), 135–162. https://doi.org/10.1177/1024258916687250

[10] Mary L. Gray and Siddharth Suri. 2019. *Ghost Work: How to Stop Silicon Valley from Building a New Global Underclass.* Houghton Mifflin Harcourt.

[11] Mary L. Gray, Siddharth Suri, Syed Shoaib Ali, and Deepti Kulkarni. 2016. The Crowd is a Collaborative Network. In *Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing (CSCW '16).* ACM, New York, NY, USA, 134–147. https://doi.org/10.1145/2818048.2819942

[12] Neha Gupta, David Martin, Benjamin V. Hanrahan, and Jacki O'Neill. 2014. Turk-Life in India. In *Proceedings of the 18th International Conference on Supporting Group Work (GROUP '14).* ACM, New York, NY, USA, 1–11. https://doi.org/10.1145/2660398.2660403

[13] Anikó Hannák, Claudia Wagner, David Garcia, Alan Mislove, Markus Strohmaier, and Christo Wilson. 2017. Bias in Online Freelance Marketplaces: Evidence from TaskRabbit and Fiverr. In *Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing (CSCW '17).* ACM, New York, NY, USA, 1914–1933. https://doi.org/10.1145/2998181.2998327

[14] Benjamin Hanrahan, Ma Ning, and Yuan Chien Wen. 2017. The Roots of Bias on Uber. In *Proceedings of 15th European Conference on Computer-Supported Cooperative Work-Exploratory Papers.* European Society for Socially Embedded Technologies (EUSSET).

[15] Julie Hui, Justin Cranshaw, Yasmine Kotturi, and Chinmay Kulkarni. 2019. The Future of Work (places): Creating a Sense of Place for On-demand Work. In *Conference Companion Publication of the 2019 on Computer Supported Cooperative Work and Social Computing.* ACM, 487–491.

[16] Julie Hui, Elizabeth M. Gerber, Lynn Dombrowski, Mary L. Gray, Adam Marcus, and Niloufar Salehi. 2018. Computer-Supported Career Development in The Future of Work. In *Companion of the 2018 ACM Conference on Computer Supported Cooperative Work and Social Computing.* ACM, 133–136.

[17] Panagiotis G. Ipeirotis. 2010. *Analyzing the Amazon Mechanical Turk Marketplace.* SSRN Scholarly Paper ID 1688194. Social Science Research Network, Rochester, NY. https://papers.ssrn.com/abstract=1688194

[18] Lilly C. Irani and M. Six Silberman. 2013. Turkopticon: Interrupting Worker Invisibility in Amazon Mechanical Turk. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '13).* ACM, New York, NY, USA, 611–620. https://doi.org/10.1145/2470654.2470742

[19] Mohammad Hossein Jarrahi and Will Sutherland. 2019. Algorithmic Management and Algorithmic Competencies: Understanding and Appropriating Algorithms in Gig Work. In *Information in Contemporary Society (Lecture Notes in Computer Science),* Natalie Greene Taylor, Caitlin Christian-Lamb, Michelle H. Martin, and Bonnie Nardi (Eds.). Springer International Publishing, 578–589.

[20] Mohammad Hossein Jarrahi, Will Sutherland, Sarah Nelson, and Steve Sawyer. 2019. Platformic management, boundary resources, and worker autonomy in gig work. *Computer Supported Cooperative Work* (2019). https://doi.org/10.1007/s10606-019-09368-7

[21] Adi Kamdar. 2016. Why Some Gig Economy Startups Are Reclassifying Workers as Employees. https://onlabor.org/why-some-gig-economy-startups-are-reclassifying-workers-as-employees/

[22] Eliscia Kinder, Mohammad Hossein Jarrahi, and Will Sutherland. 2019. Gig platforms, tensions, alliances and ecosystems: an actor-network perspective. *PACM on Human-Computer Interaction* 3 (2019). https://doi.org/10.1145/3359314

[23] Sara Constance Kingsley, Mary L. Gray, and Siddharth Suri. 2015. Accounting for Market Frictions and Power Asymmetries in Online Labor Markets. *Policy & Internet* 7, 4 (2015), 383–400. https://doi.org/10.1002/poi3.111

[24] Kristine M. Kuhn and Amir Maleki. 2017. Micro-entrepreneurs, Dependent Contractors, and Instaserfs: Understanding Online Labor Platform Workforces. *Academy of Management Perspectives* 31, 3 (June 2017), 183–200. https://doi.org/10.5465/amp.2015.0111

[25] Airi Lampinen, Christoph Lutz, Gemma Newlands, Ann Light, and Nicole Immorlica. 2018. Power struggles in the digital economy: platforms, workers, and markets. In *Companion of the 2018 ACM Conference on Computer Supported Cooperative Work and Social Computing.* ACM, 417–423.

[26] Min Kyung Lee, Daniel Kusbit, Evan Metsky, and Laura Dabbish. 2015. Working with Machines: The Impact of Algorithmic and Data-Driven Management on Human Workers. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems (CHI '15).* ACM, New York, NY, USA, 1603–1612.

[27]  Vili Lehdonvirta. 2018. Flexibility in the gig economy: managing time on three online piecework platforms. *New Technology, Work and Employment* 33, 1 (2018), 13–29. https://doi.org/10.1111/ntwe.12102

[28]  David Martin, Jacki O'Neill, Neha Gupta, and Benjamin V. Hanrahan. 2016. Turking in a Global Labour Market. *Computer Supported Cooperative Work (CSCW)* 25, 1 (Feb. 2016), 39–77. https://doi.org/10.1007/s10606-015-9241-6

[29]  Jacob Metcalf, Emanuel Moss, and Danah Boyd. 2019. Owning Ethics: Corporate Logics, Silicon Valley, and the Institutionalization of Ethics. *Social Research: An International Quarterly* 86, 2 (Aug. 2019), 449–476. https://muse.jhu.edu/article/732185

[30]  Pawel Popiel. 2017. "Boundaryless" in the creative economy: assessing freelancing on Upwork. *Critical Studies in Media Communication* 34, 3 (May 2017), 220–233. https://doi.org/10.1080/15295036.2017.1282618

[31]  Noopur Raval and Paul Dourish. 2016. Standing Out from the Crowd: Emotional Labor, Body Labor, and Temporal Labor in Ridesharing. In *Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing (CSCW '16)*. ACM, New York, NY, USA, 97–107. https://doi.org/10.1145/2818048.2820026

[32]  Alex Rosenblat and Luke Stark. 2016. *Algorithmic Labor and Information Asymmetries: A Case Study of Uber's Drivers*. SSRN Scholarly Paper ID 2686227. Social Science Research Network, Rochester, NY. https://papers.ssrn.com/abstract=2686227

[33]  Niloufar Salehi, Lilly C. Irani, Michael S. Bernstein, Ali Alkhatib, Eva Ogbe, Kristy Milland, and Clickhappier. 2015. We Are Dynamo: Overcoming Stalling and Friction in Collective Action for Crowd Workers. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems (CHI '15)*. ACM, New York, NY, USA, 1621–1630. https://doi.org/10.1145/2702123.2702508

[34]  M. Six Silberman, Bill Tomlinson, Rochelle LaPlante, Joel Ross, Lilly Irani, and Andrew Zaldivar. 2018. Responsible research with crowds: pay crowdworkers at least minimum wage. *Commun. ACM* 61, 3 (2018), 39–41.

[35]  Will Sutherland, Mohammad Hossein Jarrahi, Michael Dunn, and Sarah Beth Nelson. 2019. Work Precarity and Gig Literacies in Online Freelancing. *Work, Employment and Society* (Nov. 2019), 0950017019886511. https://doi.org/10.1177/0950017019886511

[36]  Mark E. Whiting, Grant Hugh, and Michael S. Bernstein. 2019. Fair Work: Crowd Work Minimum Wage with One Line of Code. *Proceedings of the AAAI Conference on Human Computation and Crowdsourcing* 7, 1 (Oct. 2019), 197–206. https://wvvw.aaai.org/ojs/index.php/HCOMP/article/view/5283

[37]  Oliver E. Williamson. 1981. The Economics of Organization: The Transaction Cost Approach. *Amer. J. Sociology* 87, 3 (Nov. 1981), 548–577. https://doi.org/10.1086/227496

[38]  Alex J Wood, Mark Graham, Vili Lehdonvirta, and Isis Hjorth. 2019. Good Gig, Bad Gig: Autonomy and Algorithmic Control in the Global Gig Economy. *Work, Employment and Society* 33, 1 (Feb. 2019), 56–75. https://doi.org/10.1177/0950017018785616

[39]  Alex J. Wood, Vili Lehdonvirta, and Mark Graham. 2018. Workers of the Internet unite? Online freelancer organisation among remote gig economy workers in six Asian and African countries. *New Technology, Work and Employment* 33, 2 (2018), 95–112. https://doi.org/10.1111/ntwe.12112

[40]  Allison Woodruff, Sarah E. Fox, Steven Rousso-Schindler, and Jeffrey Warshaw. 2018. A qualitative exploration of perceptions of algorithmic fairness. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*. ACM, 656.

[41]  Ming Yin, Siddharth Suri, and Mary L. Gray. 2018. Running Out of Time: The Impact and Value of Flexibility in On-Demand Crowdwork. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (CHI '18)*. ACM, New York, NY, USA, 430:1–430:11. https://doi.org/10.1145/3173574.3174004