

Upwork just did what? Studying digital platforms (or how to observe something that does not want to be observed)

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In Spring 2022 we logged on to Upwork to contact a new-to-the-space online freelancer about their experiences on the platform. We noticed they had a new “Availability:” badge that had appeared on their profile since the previous day’s contact. We then learned this change was announced that day via Upwork’s Twitter account, was documented in Upwork’s FAQs, and was being discussed by several people in YouTube videos, as well as a number of grumpy people posting to a Reddit sub-thread.

Upwork is a well-managed and remarkably successful online labor platform, so this is not a random event. Upwork intermediates those seeking a job (workers) and those looking to hire someone to complete a job (employers or ‘clients’ in Upwork’s term). Upwork is also a market-maker: their intermediation sustains an online-only labor market. This dual role - as market-maker and intermediary, means the Upwork has access to extensive data about jobs being posted, issues that arise, clients who post jobs, people who seek jobs, and the flow of these efforts. What seems random is more likely a lack of our - outsider - understanding of what Upwork learns from these data.

Here we ask how to best study a digital platform, pursuing two contributions. First, we seek to contribute empirical and conceptual insights about online digital platforms. Second, we seek to know more about how to track changes to online platform’s functionality. We pursue this work for at least three reasons. First, as noted, these are increasingly found in many aspects of our digital lives. Second, digital platforms intermediate social and economic action - with great power and little oversight. Third, platforms rely on data and that inform algorithms. These aid the platform owners to design the interfaces and interactions, guide use, and mediate the social and economic activities of those that use (and rely) on them. To do this we first provide an overview of digital platforms. Then, we explain how digital platforms gain and sustain market power. Last, we review of what we have been doing to study Upwork and its changes over time.

The empirical focus is Upwork¹, the digital platform at the center of the online freelance labor market one of the largest online digital labor markets². This market involves 8,000,000 freelancers and more than 2,500,000 businesses (clients), with approximately 152,000 active clients who are spending at least \$5,000/year on contracts³.

Online Digital Platforms

Online digital platforms are proliferating, becoming so well embedded into

¹ Upwork website: <https://www.upwork.com/>

² Other popular online freelancing platforms/ labor markets include: Fiverr (<https://www.fiverr.com/>), Toptal (<https://www.toptal.com/>), Freelancer (<https://www.freelancer.com/>), among many others.

³ See <https://www.upwork.com/press/releases/53-million-americans-now-freelance-new-study-finds-2> and <https://upwork.gcs-web.com/static-files/11fe6ce1-8e50-40e5-9f4e-2710de4e27c8>.

contemporary society it is hard to remember most are less than 20 years old. Amazon, Facebook, Ebay, Etsy, AirBnB, Pinterest and others have helped reshape social relations, and created or overtaken existing market structures. While the features and functions differ, these platforms share at least four similarities: 1) integrated and complementary feature sets, 2) a set of standard interfaces that allows for modularity, 3) a set of core functionalities that define the platform's value, and 4) predefined user accounts that provide the platform owner with varying amounts of data about those who use the platform (Plantin et al., 2016). Platforms are further distinguished by their governance: they are owned by a company. This means platforms have a clear hierarchy of decision-making. This difference in governance helps further distinguish platforms from the more open and generative notion of infrastructure (Andersson Schwarz, 2017).

Upwork's roles in shaping the online freelance job market underscores how digital labor platforms play an increasingly important role in (re)structuring work arrangements in the rapidly growing gig economy. Today, this gig economy includes platforms for an array of services, including location-based services like ridesharing of Uber and Lyft, food delivery of DoorDash and GrubHub, and offering accommodations via AirBnB or Vrbo. Gigwork platforms allow micro-tasking such as that found on Amazon Mechanical Turk (AMT). And, then there are the freelancing sites for professional services like Upwork that are our focus. These different platforms position themselves as work mediators, connecting consumers with available workers (and their services) (Abraham et al., 2018; Dunn, 2017; Jarrahi et al., 2020; Lehdonvirta, 2018; Sweet & Meiksins, 2020).

These platforms serve as market-makers that determines the architecture of work transactions (Brown et al., 2021; Lampinen et al., 2018; Veen et al., 2020). In doing so, these platforms use data from workers, employers, and jobs to guide and structure what the market participants see, without needing to provide transparency about their processes, reasoning, or decisions. This market-making architecture is both invisible to the market participants and is fundamental to how the market operates (Bar, 2001).

This lack of transparency is enabled by minimal regulatory guidance or scrutiny for operating in these new digital work environments (Murillo et al., 2017). In the platform-mediated labor markets in the US, online freelance workers are classified as "independent contractors." That is, online labor platforms are not required to provide worker or workplace protections or benefits, even as workers must agree to adhere to the platform's rules (e.g., being subject to surveillance and evaluations or risk losing their work on the platform)(Rahman, 2021). This means platforms themselves do not have to bear costs traditionally associated with having 'employees' (e.g., benefits) and are able to avoid legal liability from issues arising from the work (e.g., equal opportunity) (Bertram, 2016; Dubal, 2017; Duggan et al., 2020; Kondo & Singer, 2019-2020).

Given their privileged roles, Murillo et al. (2017) argue that platforms introduce a new playing field. "Driven by big data and dynamic pricing models set by algorithms, it is not only the rules of the economic game that are rewritten but the whole interplay between the regulator and regulated". Our goal is to learn how to study these opaque, yet increasingly powerful market-making platforms. This means paying attention to the types and uses of data, algorithms, features, and functions of these platforms.

Research has mostly focused on platform-mediated work such as ridesharing (Peticca-Harris et al., 2020), food delivery (Griesbach et al., 2019; Milkman et al., 2021; Veen et al., 2020), and micro-tasking (Fieseler et al., 2019; Gray & Suri, 2019; Rani & Furrer, 2019). Less attention has been paid to online freelancing. Freelancing jobs are easily decomposed into tasks; typically requires a range of conceptual skills, creativity, problem-solving; and often requires routine interactions between clients and workers (Alvesson, 2004; Blackler, 1995; Powell & Snellman, 2004). And, platform-mediated freelance work can be completed remotely, location independent. Thus, the mechanisms for job-matching and workforce management in platform-mediated freelancing are more complex (D'Cruz & Noronha, 2016; Jarrahi et al., 2020; Kalleberg & Dunn, 2016; Wood et al., 2019).

Platform Power

Platform power is a core topic of the literature on digital platforms, and is visible in three ways: 1) the platform's role as a market-maker, 2) its control over the data about clients, workers, jobs, bids, and outcomes that can be used to develop the algorithms central to the platform functionality, and 3) the other mechanisms that create information asymmetries between the players in the freelancing transactions (per Bar, 2001). Wood, et. al. (2019) note the platform's ability to collect data that are then used to support proprietary algorithms magnifies this architectural control.

The market-making ability of online labor platforms is also visible through the human-computer interactions that frame these two-sided labor market of freelancers and clients interacting through the digital labor platform. The platform's interfaces provide the negotiating space for freelancers and employers to come together. The exchange that is at the center of this transaction is, thus, both market and interface. This means that any study of online labor is also a study of the market-making platform. So, changes in the negotiating space are also changes to the market space: for example, allowing freelancers to have multiple profiles provides them more opportunities to be found by employers.

This conceptualization of interfaces as negotiating spaces makes clear that there are implications of power embedded in these work platforms. The control over the mediation between clients and workers has been termed "platformic management" or "algorithmic management" (Lustig, 2020; Jarrahi et al., 2019; Jarrahi & Sutherland, 2019; Kinder et. al., 2019).

Platforms work hard to capture and keep market share

Online labor platform owners are aware of their privileged status, even as they are also aware their location in an under-regulated market space is hard to protect. Data provide platforms like Upwork significant power. These data encompass information about platform users, clients, and transactions. Upwork also has access to data about what clients seek, what they pay for different jobs, the frequency of job postings, etc. This means the platform has detailed insights into user behavior and metrics to help improve their platform and maintain control over the market.

Platforms leverage these data to improve their algorithms. Algorithms are a significant element of platform architecture, as these automated processes drive which

jobs freelancers are recommended, guide whether applicants see posted jobs, etc. Understanding algorithms is complicated given that these are key to maintaining the platform's market position but are largely opaque to outsiders. Van Dijck et al (2018) note “Although platform owners may lift a veil on how their algorithms work, they are often well-kept trade secrets and are everything but transparent. Moreover, algorithms have become increasingly complex and are subject to constant tweaking”.

Another way that platforms maintain control is through platform change. Data enables the platform to add, modify or remove features. One example of this on Upwork was the sudden introduction and pricing changes to “Connects”⁴. Connects were introduced to the Upwork platform as a requirement to apply for different jobs; these Connects are used to regulate the number of jobs each freelancer could apply to each month. Initially, freelancers are awarded a number of Connects at sign up so they can begin applying for jobs and they were also awarded a number of these Connects each subsequent month so freelancers could keep applying to new jobs. Then, in May 2019, Upwork reduced the number of free monthly Connects and began to charge for each additional Connect. That is, freelancers on Upwork now have to pay to bid for or apply to a job (at \$.15 per Connect). Upwork has also changed the number of Connects required to apply for each job now ranging from one to six Connects depending on the size of the job.

Another example of how Upwork is constantly changing is the introduction of different types of badges. These badges connote some level of accomplishment (e.g., *Rising Talent*, *Top Rated*, *Top Rated Plus*, and *Expert Vetted*) and are status markers that represent different levels of “proven talent and expertise” as calculated by different platform metrics and requirements. While Upwork has published some criteria for how these badges are calculated and awarded, the platform ultimately has control over how and when to change, update, and add to the metrics that constitute each of these status demarcations or introduce entirely new status badges, as the platform's owners see fit. It remains unclear how this new badge will impact freelancers with and without the other types of talent badges. But, Upwork will be monitoring what comes of these badges.

How best to study a moving (digital) object?

As intimated at the start, our interest in Upwork stems from our ongoing panel study of online freelance worker’s career paths and labor strategies (Dunn et al., n.d., 2021; Munoz et al., 2022; Sawyer et al., 2020). The more than 200 interviews we have had with more than 130 different workers has shown us the importance of tracking changes to Upwork. What comes clear from this is that the platform logics, features, functionalities, and policies put in place by Upwork are steadily evolving in response to ongoing data analysis regarding the particulars of - and interactions among - clients, jobs, bids, workers, and issues. And, Upwork’s owners are making these changes in the context of a competitive and fast-evolving online market space that includes hundreds of other platforms and players whose capabilities and market positioning continues to evolve.

The burgeoning literature on digital platforms, including our own work, shows it is possible to study a platform’s change over time by studying how its users - freelancers

⁴ Connects: <https://support.upwork.com/hc/en-us/articles/211062898-Use-Connects>

and their employers - interact with that platform over time (e.g., Howcroft & Bergvall-Kåreborn, 2019; Jarrahi et al., 2020; Mansell & Steinmueller, 2020; Plantin et al., 2016). These studies focus attention on mapping the functions and features of the interface, the presentation of participant's profiles, the structuring of the transaction - including feedback and data presentation, and the roles of performance metrics like ratings.

Building from these, our primary approach to studying a digital platform has been digital ethnography (Burrell, 2009; Góralaska, 2020; Murthy, 2008; Ritter, 2021). We do so because the evidence of the robustness and rigor of this approach (Ito, 1996; Nardi, 1996). Our approach to digital ethnography centers on interviews using ethnographic techniques, per (Spradley, 2016).

This multi-year engagement is combined with sustained secondary and trace data collection. We track changes to Upwork, relying on Upwork's social media to learn about changes. We then read Upwork's online FAQ, follow Upwork sub-Reddits and search YouTube (and, more recently, TikTok). We participate in several Facebook groups devoted to online freelancing or working on Upwork. Finally, we must be mindful of our responsibilities to the participants who are on Upwork (and who rely on this platform for some or all of their income), so we are not going to violate or challenge terms of use.

References

- Abraham, K. G., Haltiwanger, J. C., Sandusky, K., & Spletzer, J. R. (2018). *Measuring the gig economy: Current knowledge and open issues*. National Bureau of Economic Research.
- Alvesson, M. (2004). *Knowledge Work and Knowledge-Intensive Firms*. OUP Oxford.
<https://books.google.com/books?id=deUSruSwCZYC>
- Andersson Schwarz, J. (2017). Platform logic: An interdisciplinary approach to the platform-based economy. *Policy & Internet*, 9(4), 374–394. <https://doi.org/10.1002/poi3.159>
- Bar, F. (2001). The construction of marketplace architecture. *Tracking a Transformation: E-Commerce and the Terms*.
https://scholar.google.ca/scholar?cluster=14069040417388041339&hl=en&as_sdt=0,5&sciodt=0,5
- Bertram, E. (2016). The Political Development of Contingent Work in the United States: Independent Contractors from the Coal Mines to the Gig Economy. *E-Journal of International and Comparative Labour Studies*, 5(3).
- Blackler, F. (1995). Knowledge, Knowledge Work and Organizations: An Overview and Interpretation. *Organization Studies*, 16(6), 1021–1046. <https://doi.org/10.1177/017084069501600605>
- Brown, S., Davidovic, J., & Hasan, A. (2021). The algorithm audit: Scoring the algorithms that score us. *Big Data & Society*, 8(1), 2053951720983865. <https://doi.org/10.1177/2053951720983865>
- Burrell, J. (2009). The Field Site as a Network: A Strategy for Locating Ethnographic Research. *Field Methods*, 21(2), 181–199. <https://doi.org/10.1177/1525822X08329699>
- D'Cruz, P., & Noronha, E. (2016). Positives outweighing negatives: the experiences of Indian crowdsourced workers. *Work Organisation, Labour and Globalisation*, 10(1), 44–63.
- Dubal, V. B. (2017). Wage slave or Entrepreneur?: Contesting the dualism of legal worker identities. *California Law Review*. <https://www.jstor.org/stable/24915689>
- Duggan, J., Sherman, U., Carbery, R., & McDonnell, A. (2020). Algorithmic management and app-work in the gig economy: A research agenda for employment relations and HRM. *Human Resource Management Journal*, 30(1), 114–132.
- Dunn, M. (2017). Digital Work: New Opportunities or Lost Wages? *American Journal of Management*, 17(4), 10–27.
- Dunn, M., Munoz, I., & Sawyer, S. (2021). Gender Differences and Lost Flexibility in Online Freelancing During the COVID-19 Pandemic. *Frontiers in Sociology*, 6, 738024. <https://doi.org/10.3389/fsoc.2021.738024>
- Dunn, M., Stephany, F., Sawyer, S., Munoz, I., & Raheja, R. (n.d.). When motivation becomes desperation: Online freelancing during the Covid-19 pandemic. *Osfi.io*. <https://osfi.io/preprints/socarxiv/67ptf/>
- Fieseler, C., Bucher, E., & Hoffmann, C. P. (2019). Unfairness by design? The perceived fairness of digital labor on crowdworking platforms. *Journal of Business Ethics: JBE*, 156(4), 987–1005. <https://doi.org/10.1007/s10551-017-3607-2>
- Góralaska, M. (2020). Anthropology from Home. *Anthropology in Action: Newsletter of the British Association for Social Anthropology in Policy and Practice (BASAPP)*, 27(1), 46–52. <https://doi.org/10.3167/aia.2020.270105>
- Gray, M., & Suri, S. (2019). *Ghost Work: How to Stop Silicon Valley from Building a New Global Underclass*. Houghton Mifflin Harcourt.
- Griesbach, K., Reich, A., Elliott-Negri, L., & Milkman, R. (2019). Algorithmic Control in Platform Food Delivery Work. *Socius*, 5, 2378023119870041. <https://doi.org/10.1177/2378023119870041>
- Howcroft, D., & Bergvall-Kåreborn, B. (2019). A typology of crowdwork platforms. *Work Employment And Society*,

- 33(1), 21–38. <https://doi.org/10.1177/0950017018760136>
- Ito, M. (1996). Theory, Method, and Design in Anthropologies of the Internet. *Social Science Computer Review*, 14(1), 24–26. <https://doi.org/10.1177/089443939601400107>
- Jarrahi, M. H., Sutherland, W., Nelson, S. B., & Sawyer, S. (2020). Platformic management, boundary resources for gig work, and worker autonomy. *Computer Supported Cooperative Work: CSCW: An International Journal*, 29(1-2), 153–189. <https://doi.org/10.1007/s10606-019-09368-7>
- Kalleberg, A. L., & Dunn, M. (2016). Good jobs, bad jobs in the gig economy. *LERA for Libraries*, 20, 1–2.
- Kondo, A., & Singer, A. (2019-2020). Labor without Employment: Toward a New Legal Framework for the Gig Economy. *ABA Journal of Labor and Employment Law*, 34, 331. <https://heinonline.org/HOL/Page?handle=hein.journals/lablaw34&id=355&div=&collection=>
- Lampinen, A., Lutz, C., Newlands, G., Light, A., & Immorlica, N. (2018). Power Struggles in the Digital Economy: Platforms, Workers, and Markets. *Companion of the 2018 ACM Conference on Computer Supported Cooperative Work and Social Computing*, 417–423. <https://doi.org/10.1145/3272973.3273004>
- Lehdonvirta, V. (2018). Flexibility in the gig economy: Managing time on three online piecework platforms. *New Technology, Work and Employment*, 33, 1, 13–29. <https://doi.org/10.1111/ntwe.12102>
- Mansell, R., & Steinmueller, W. E. (2020). *Advanced introduction to platform economics*. Edward Elgar Publishing.
- Milkman, R., Elliott-Negri, L., Griesbach, K., & Reich, A. (2021). Gender, Class, and the Gig Economy: The Case of Platform-Based Food Delivery. *Critical Sociology*, 47(3), 357–372. <https://doi.org/10.1177/0896920520949631>
- Munoz, I., Dunn, M., & Sawyer, S. (2022). Flexibility, Occupation and Gender: Insights from a Panel Study of Online Freelancers. *Information for a Better World: Shaping the Global Future*, 311–318. https://doi.org/10.1007/978-3-030-96957-8_27
- Murillo, D., Buckland, H., & Val, E. (2017). When the sharing economy becomes neoliberalism on steroids: Unravelling the controversies. *Technological Forecasting and Social Change*, 125, 66–76. <https://doi.org/10.1016/j.techfore.2017.05.024>
- Murthy, D. (2008). Digital Ethnography: An Examination of the Use of New Technologies for Social Research. *Sociology*, 42(5), 837–855. <https://doi.org/10.1177/0038038508094565>
- Nardi, B. A. (1996). *Context and consciousness: Activity theory and human-computer interaction*. https://books.google.ca/books?hl=en&lr=&id=JeqcgPIS2UAC&oi=fnd&pg=PR7&ots=e0dbWxC_Hu&sig=H_0r66H82Hjmoi-VMLbqf2VUYak
- Peticca-Harris, A., deGama, N., & Ravishankar, M. N. (2020). Postcapitalist precarious work and those in the “drivers” seat: Exploring the motivations and lived experiences of Uber drivers in Canada. *Organization (London, England)*, 27(1), 36–59. <https://doi.org/10.1177/1350508418757332>
- Plantin, J.-C., Lagoze, C., Edwards, P. N., & Sandvig, C. (2016). Infrastructure Studies Meet Platform Studies in the Age of Google and Facebook. *New Media & Society*, 10, 1–18.
- Powell, W. W., & Snellman, K. (2004). The knowledge economy. *Annual Review of Sociology*, 30, 199–220.
- Rahman, H. A. (2021). The invisible cage: Workers’ reactivity to opaque algorithmic evaluations. *Administrative Science Quarterly*. <https://journals.sagepub.com/doi/abs/10.1177/00018392211010118>
- Rani, U., & Furrer, M. (2019). On-demand digital economy: Can experience ensure work and income security for microtask workers? *Jahrbucher Fur Nationalokonomie Und Statistik*, 239(3), 565–597. <https://doi.org/10.1515/jbnst-2018-0019>
- Ritter, C. S. (2021). Rethinking digital ethnography: A qualitative approach to understanding interfaces. *Qualitative Research: QR*, 14687941211000540. <https://doi.org/10.1177/14687941211000540>
- Sawyer, S., Dunn, M., Munoz, I., Stephany, F., & Raheja, R. (2020). *Freelancing online during the COVID-19 pandemic*. <https://www.microsoft.com/en-us/research/publication/freelancing-online-during-the-covid-19-pandemic/>
- Spradley, J. P. (2016). *The Ethnographic Interview*. Waveland Press. <https://play.google.com/store/books/details?id=KZ3ICwAAQBAJ>
- Sweet, S., & Meiksins, P. (2020). *Changing contours of work: Jobs and opportunities in the new economy*. Sage Publications.
- van Dijck, J., Poell, T., & de Waal, M. (2018). *The Platform Society: Public Values in a Connective World*. Oxford University Press. <https://play.google.com/store/books/details?id=wLhwDwAAQBAJ>
- Veen, A., Barratt, T., & Goods, C. (2020). Platform-capital’s “app-etite” for control: A labour process analysis of food-delivery work in Australia. *Work Employment And Society*, 34(3), 388–406. <https://doi.org/10.1177/0950017019836911>
- Wood, A. J., Graham, M., Lehdonvirta, V., & Hjorth, I. (2019). Good Gig, Bad Gig: Autonomy and Algorithmic Control in the Global Gig Economy. *Work Employment And Society*, 33(1), 56–75. <https://doi.org/10.1177/0950017018785616>