

Designing A Constitution for a Self-Governing Crowdsourcing Marketplace

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1. INTRODUCTION

Paid crowdsourcing platforms such as Upwork and Amazon Mechanical Turk must jointly serve workers, requesters, and platform owners. However, design and governance decisions tend to be made only by the owners, and in the business interests of the requesters, so the many stakeholders' issues often remain unaddressed. In response to the resulting frustration and power imbalances, platform users created external tools for communication and platform monitoring [Irani and Silberman 2013], as grassroots alternatives to an improved platform design [LaPlante et al. 2016]. Similar solutions emerged in most paid crowdsourcing platforms [Yin et al. 2016], despite top down controls (e.g., [Amazon 2014; Upwork 2016; Vakharia and Lease 2013]). This trend of asymmetric governance undermines the anticipated future of paid crowdsourcing [Kittur et al. 2013].

In contrast to the top-down governance structures that paid crowdsourcing platforms currently use, we explored a bottom-up approach: open source governance [Rushkoff 2003]. We describe a crowdsourcing platform where constituents have full access to governing documents and participate in writing legislation through an iterative community process akin to how open source software is developed [O'Mahony and Ferraro 2007]. Open source governance has been used in online communities such as Jupyter [Jupyter 2015], and in physical communities such as in Iceland [Landemore 2015]. Crowdsourced democratic deliberation [Aitamurto and Landemore 2016] offers an effective bridging of these approaches into a mechanism driven by participant stakeholders.

We introduce the Daemo constitution, a governance document designed to create a formal process for paid crowdsourcing marketplaces that allows and manages operational changes, driven by its users' preferences. The Daemo constitution provides a set of laws governing the community and a mechanism for those laws to evolve through an amendment process. Workers and requesters may craft arguments for platform changes through amendments. The constitution frees the platform owners to make any design changes or improvements, as long as they do not violate the constitution or its amendments. A jury system arbitrates disagreements on interpretation of the constitution between the workers, requesters and the platform. We implemented the newly introduced Daemo Constitution on top of the open source crowdsourcing marketplace Daemo[Gaikwad et al. 2015].

With support from stakeholder communities, we have written and ratified the Daemo constitution and we are rolling out this approach to governance as the Daemo platform makes its public debut in 2017. This paper aims to discuss the underlying design of the Daemo constitution and the process we have used to develop and validate it so far.

2. RELATED WORK

Open source governance structures exist in communities such as open sciences [Seidel et al. 2013] and political governance [Landemore 2015]. However, collective efforts in crowdsourcing marketplaces

have focused their efforts external to the marketplaces themselves [Salehi et al. 2015]. Many efforts have been distributed and maximize individual independence rather than collective effectiveness [Amazon 2014; Vakharia and Lease 2013]. However, crowd workers do support each other collectively off-platform [Gray et al. 2016]. Alienation between requesters and workers moves counterpublics off-platform, as on Turkopticon [Irani and Silberman 2013] and We are Dynamo [Salehi et al. 2015].

Asymmetric trust and power in crowdsourcing market places challenges the process of governance. For example, Turkopticon generates a reputation report for requesters. Occasionally, when a requester receives numerous calls by workers to sanction services, they will react; however, the Mechanical Turk platform does not itself take punitive action. These solutions also arise downstream, after the problem has occurred: by changing the design of the platform, it may be possible to mediate these issues upstream before they affect others.

The underlying Daemo platform reflects these lessons [Gaikwad et al. 2015]. Thus far, its efforts have been to create worker guilds to manage quality [Whiting et al. 2016] and improve reputation signals through incentive-compatible interaction design [Gaikwad et al. 2016]. During the early development of Daemo, to mitigate the inherent trust issues, a representative democratic governance model was tested [Gaikwad et al. 2015]. It used an elected leadership board composed of three workers, three requesters, and a member of the development team. However, initial feedback on the leadership board found it to be too bureaucratic—preventing the platform from testing out new ideas—without a constitution that could support decisions and resolve conflicts.

3. THE DAEMO CONSTITUTION

The Daemo constitution aims to address the key challenges of governance in crowdsourcing marketplaces: balancing power between the stakeholder groups (workers, requesters, and the Daemo platform), and providing an official, platform wide conduit for discussion. To achieve this, it was necessary to develop mechanisms for making decisions about changes influencing the 3 stakeholder groups and for dealing with conflicts if they arose. It was also critical to set the tone of Daemo governance by providing initial overarching community standards.

We have produced and democratically voted to ratify an initial constitution that formally specifies a process for decision making, conflict resolution, and a protocol for its own evolution through amendments. The constitution is setup with initial community standards which are designed to evolve and mature as Daemo gains more users.

3.1 A separation of powers

Crowdsourcing platforms are generally interested in making design decisions allowing them to continue developing and improving the platform to remain competitive. Workers are interested in a well-orchestrated work environment and having enough power to deal with problematic requesters and platform issues when they occur [Salehi et al. 2015]. Requesters want to get good results from workers without spending too much time navigating individual worker issues and without paying more than they need to. In this way, the three stakeholder groups have different but intertwined interests.

The Daemo constitution aims to support democratic deliberation among its users (workers and requesters), while also affording sufficient technical freedom for the platform to develop quickly. As a consequence, the active workers and requesters are the voting constituency, submitting ideas, developing amendments, and voting on which ones to add to the constitution. On the other hand, the platform team is tasked with operationalizing the latest version of the constitution through technical changes to the platform. Important in this relationship is that the vast majority of design, product and technical goals for the platform team (e.g., improved designs, new experimental features) operate within the constitution's constraints and are not slowed.

3.2 Enabling evolution

The Daemo constitution evolves via an amendment process. New ideas can be added anonymously by anyone to a public idea listing. The listing supports discussion and enables platform stakeholders to indicate interest by upvoting. After reaching an upvote threshold, the idea evolves into a potential amendment, and a voluntary task force sets out to draft changes to the constitution formalizing the idea. Changes are made directly to the document as open pull requests to the constitution on GitHub.

Amendments develop over time, and require a feasibility check conducted by the platform team, but they are eventually submitted for a vote from the community. If a majority of both the worker and requester voting groups support the amendment, the pull request is merged and the platform team are then tasked with platform updates to ensure it adheres to the updated constitution.

3.3 Resolving conflicts

When Daemo workers or requesters disagree with how the platform team have interpreted the constitution, they may present the issue as a conflict for the *resolution jury* to arbitrate. A resolution jury is a group of 2 requesters, 2 workers, and 2 members of the platform team that are randomly selected for each conflict. The jury discusses the conflict until each of the three stakeholder groups has reached a position. Each group then gets one collective vote, avoiding deadlock. This mechanism aims to encourage each of the stakeholder groups to understand the others' positions and motivations, as opposed to leading to purely party based voting.

3.4 Realizing the constitution

The Daemo constitution is hosted publicly on GitHub¹, allowing anyone to see its history, and to engage with it. The discussion, deliberation, voting and amendment processes are conducted on a forum hosted using the Discourse forum engine² with some minor modifications to enable specific voting features. Single Sign On (SSO) allows Daemo members to use a single account when working with Daemo and when governing Daemo. All users with Daemo accounts have full access to these tools.

4. INITIAL EVALUATION

We solicited feedback from worker and requester communities in an attempt to understand how we might improve the design of our constitution. To reach workers we used Turker Nation (7 respondents) and /r/mturk on reddit (6 respondents). To reach requesters we emailed 41 industrial and academic requesters we knew off-platform (4 respondents).

The resolution jury model was popular with both worker and requester respondents, who rarely have access to formal mediation channels. For example, one respondent stated, "I love this idea and think it's a very fair way to engage in conflict resolution." Several respondents also mentioned that providing such direct service might involve a lot of support staff from the platform team. Some respondents, so-called "lone wolves" [Whiting et al. 2016], expressed concern with potential power grabbing (as opposed to the more free-for-all nature of Mechanical Turk) and potential anonymity issues. We felt these tradeoffs could be mitigated through our hierarchy-free design and anonymity when suggesting ideas, but we adjusted wording in the constitution to clarify these features.

As we roll out our platform through 2017 we hope to continue to evaluate the reaction to and utilization of the constitution as it is designed. In particular, we aim to track the effectiveness of the design at enabling revision and evolution, and we aim to query participant stakeholders about to what degree they feel supported by this mechanism and ways in which they feel it could do a better job.

¹<http://github.com/crowdresearch/open-gov>

²<http://daemo.stanford.edu/forum>

5. CONCLUSIONS

A key principle of Daemo is to provide crowd workers and requesters with a means of governing the development and evolution of the platform into the future. To facilitate this, we introduced the Daemo constitution, outlining the goals of the platform, relationship between members of the community and its standards, methods for seeking ideas, amending the constitution and resolving conflicts.

The Daemo constitution has been a collaborative effort by the Stanford Crowd Research Collective. However, we have also endeavored to solicit feedback from the MTurk worker and requester communities via TurkerNation, Reddit and other channels. The Daemo constitution is publicly available now, and we are constantly seeking feedback to make it better.

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