

The Role of Digital Work Platforms in Negotiating New Power Dynamics: Experiences from a Social Digital Skills Platform in South Africa

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ABSTRACT

Digital platforms can serve as a mediating agent between workers and employers, increasing the trust between parties previously unknown to each other. Platform developers also make many design decisions that have the potential to impact the power dynamics between workers and employers. We report on our experience with piloting a social digital platform, VASTBlu, that enables workers from 3 marginalized communities in Johannesburg to access work opportunities in the nearly mainstream economy in three township communities in Johannesburg, South Africa. We also explore the ways in which choices like symmetry of review between parties and frequency of review could be consciously chosen to change the power dynamics between parties in a digital work platform, reducing unfair practices in work activities and bringing increased power and dignity to workers.

Author Keywords

Digital platforms; South Africa; power dynamics; design choices

CSS Concepts

• **Human-centered computing~Ethnographic studies; Social and professional topics~Computing/technology policy;**

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1 INTRODUCTION

Digital work platforms, like Uber, Lyft, Grab, GoJek, Care.com and many others, connect workers to individuals desiring their services and form a key component of the larger sharing economy [7,8]. The impact of these platforms on workers around the world is increasingly studied [2,4,7,9]. Hsiao et al. focused on the way in which the benefits of the sharing economy are uneven in society and may be limited to certain populations [4]. Qadri focused on how the relationships of workers to each other and these digital work platforms is different in the Global South [2]. Rosenblat focused specifically on Uber [9] and Ticona et al. examined how tech shapes labor across domestic work and ridehailing more broadly [12]. Winner explored the politics of technical artifacts more broadly than digital work platforms [14]. Ekbja and Nardi explore the connection between HCI and social inequality [3]. Dombrowski et al investigated socio-technical means to mitigate wage theft [1].

In this paper, we have two primary goals. First, we describe our experience with VASTBlu, a digital work platform, which was piloted in three township communities in Johannesburg, South Africa. VASTBlu was specifically designed to address the barriers individuals living in these communities reported to accessing work opportunities in nearby neighborhoods. Second, beyond the VASTBlu prototype, we explore the potential for design choices made by digital work platforms to consciously impact the power dynamics between workers and employers. We

argue that the design choices made by platforms are far from neutral implementation details. Choices for example to facilitate symmetric review of both employers and workers or to require employers of long-term workers to report reviews regularly rather than waiting until the end of the employment relationship actively influence the power dynamics between the parties and can be used to negotiate new power dynamics, reducing unfair practices in work activities and bringing increased power and dignity to workers.

In Section 2, we describe some background and context for the VASTBlu pilot in Diepsloot, Alexandra and Tembisa, three township communities in South Africa. In Section 3, we describe the results of focus group interviews in these communities that influenced the design of the VASTBlu prototype and our pilot deployment in July through December of 2018. In Section 4, we discuss a range of design decisions all digital work platforms make and the implication of these choices on the power dynamics between workers and employers. In Section 5, we discuss some especially relevant related work and in Section 6, we conclude.

2 BACKGROUND

Before describing our experience with VASTBlu, we would like to set some background for its design and pilot deployment in the context of South Africa. In 1994, South Africa emerged from a period of extreme racial segregation and express governmental policies dedicated to benefiting the minority white population at the expense of the majority black population. Apartheid was introduced as a formal legal system beginning in 1948, but racial segregation and white supremacy had become central aspects of South African policy long before this.

Even today, South Africa has one of the widest gaps between rich and poor. According to World Bank’s Poverty and Shared Prosperity report [10], South Africa has the second highest Gini coefficient, a measure of income inequality, after

only Lesotho, a small country completely by South Africa itself. There is also high unemployment (close to 30%).

Approximately 80% of the population in South Africa lives in economically marginalized communities including over 350 communities that are locally referred to as “townships”. Townships have a rich history dating back to Apartheid and are densely populated areas, deliberately located on the fringes of affluent suburbs and industrial areas as a source of cheap labor – skilled, semiskilled and unskilled.

Townships are literally across the road from wealthy communities/economic hubs and yet workers who live there are frequently unable to “cross the road” and access the nearby economic opportunities. Many township residents are unbanked, but almost all (97%) of the townships residents have access to a cell phone.

Figure 1 shows a map of Johannesburg, highlighting the location of Diepsloot, Alexandra and Tembisa, the three communities with whom we worked. They are all situated in the periphery of Sandton, one of the economic hubs of Johannesburg.

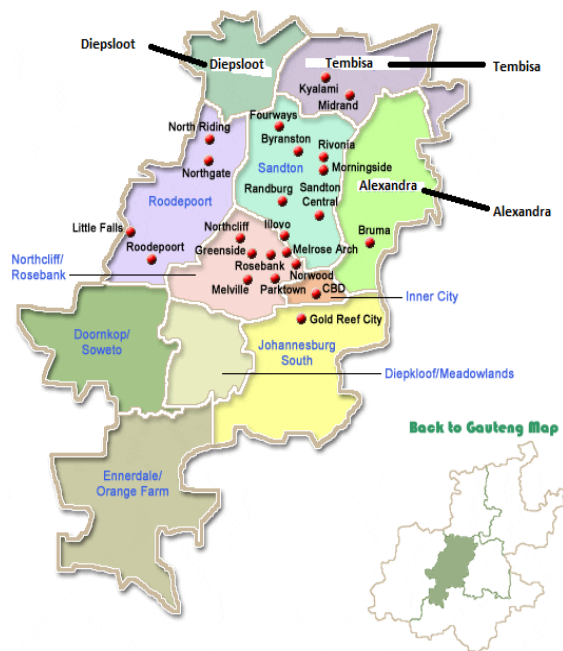


Figure 1. Map of Johannesburg highlighting the three pilot communities of Diepsloot, Alexandra and Tembisa.

3 DESIGN AND PILOT DEPLOYMENT OF VASTBLU

VASTBlu was conceptualized and developed to facilitate resources based in low-income communities to access work opportunities in the mainstream economy. It takes advantage of the high rate of penetration of mobile technology into such communities. Mobile technology has enabled low-income workers to be in position to access cloud-based digital platforms.

VASTBlu is a digital platform that enables workers to assemble a skills passport or digital portfolio of work completed. The platform itself is an intermediary or mediating agent that allows participants who don't know each other to bootstrap their trust in the platform to establish sufficient commercial trust in each others. It allows workers in economically-marginalized communities to access work opportunities and transact with the mainstream economy. For customers/employers, it is an alternative marketplace to enable looking for skilled, profiled and socially-verified resources at great rates. The digital platform is mediated by local agents in the community that provide various services to the workers.

VASTBlu enables workers to create a dynamic profile of their skills and work experience. They can then share this profile with potential employers using various communication and social networks. Their performance is rated by employers for whom they have done work and in turn formalizes their work experience and activities.

Focus Groups to Identify Barriers and Mitigation Strategies

The first phase in the design of VASTBlu was a series of focus group interviews conducted in the communities of Diespoot, Alexandra and Tembisa between January and March 2018. We held 9 focus group interviews of 15-20 people each (3 focus groups in each community).

Marginalized communities face huge challenges in accessing opportunities and we asked the focus group participants to talk about the barriers they face in accessing work opportunities in nearby communities.

Table 1 lists the most common barriers mentioned by focus group participants. For each barrier, we also list how the technology platform was designed to mitigate that barrier.

It is important to set VASTBlu in the context of the options more traditionally available in South Africa. Workers often stand by the side of the road hoping that potential employers will stop and ask about their services. They may find themselves working in unsafe conditions because they cannot assess the trustworthiness of a potential employer. It is very difficult for them to capitalize on their past experience to command higher wages or safer conditions. VASTBlu is designed to enable workers to save/accumulate reputation. It provides digital reputation and work identity, collecting and dignifying the experiences of workers.

There are substantial benefits for employers as well. They can select their preferred candidates from a number of well-profiled resources and engage them directly. They can negotiate cost, timeframes and other terms directly with chosen candidates. Alternatively, they can post job requirements on a jobs board and invite candidates to bid on the jobs. The platform is well-suited for employers that have short, medium and long term resource requirements. They also can feel safer inviting workers into their home or business when they see the documented history of workers' past experiences with other employers.

Table 1. Barriers and Technology Platform Mitigations.

Barrier	Technology Platform Mitigation
Lack of access to information about opportunities (unaware of opportunities).	Technology platform provides information about opportunities available.
Lack of access to social network or connections in mainstream economy.	Technology platform enables workers to connect to potential employers in the mainstream economy.
Low level of education.	Technology platform mitigates this barrier by recognising the skills, experience and other factors instead of just education.
Access to technology (smartphone, Internet access).	The workers in the community need to be computer-literate and have access to technological tools. The high diffusion and adoption of mobile technology in low-income communities has mitigated the problem of access to technology itself.
Distrust by potential employers because of the high crime rate attributed to members of the low-income communities (Perceptions & stereotyping)	New trust relationships are created on the technology platform (digital space), which are different from the interpersonal type of trust relationships.
Inability of workers in low-income communities to market themselves. Mainstream economy not aware of the skilled workers in low-income communities.	Workers from low-income communities can market their skills on the technology platform.
Lack of references and records of the work activities of the workers in the low-income communities.	Technology platform keeps a history of the work activities and copies of the identity documents of the workers.
Perceptions that workers from low-income communities have questionable skills and are unprofessional.	The skills of the workers are socially verified on the technology platform.
Personal attributes of the workers that are often associated with growing up in a low-income community such as low self-esteem, lack of ambition, lack of choices, fear.	Technology platform tends to be less personal as the workers and the employers interact in the digital space.
Language barriers and cultural difference.	The information about the workers is conveyed via the technology platform, not through talking.
Racism/socialisation.	Race is not much of an issue on the technology platform because employers are able to focus more on skills, experience, performance and cost of the work they require.
Exploitation	Workers are able to negotiate better rates with the employers on the technology platform. Technology platform can also set policies (terms and conditions) that mitigate exploitation of workers.

Pilot Enrollment Campaigns

Between July and December 2018, we organized enrollment events in the same communities, Diepsloot, Alexandra and Tembisa. We enrolled approximately 1000 workers (~300 from each of the 3 communities). Each enrollment event took place in a busy public place such as a shopping center in the community. We had a team of 30 people who worked together to enroll workers with roughly 10-20 of them attending for each event. Figure 2 contains two photos of the enrollment team for an event in Alexandra on November 3 2018. On that day, there were 17 people on the team (11 women and 7 men).

For each potential worker, the enrollment team recorded the worker’s name, cell phone number, address and profession. We did not specifically record age or other official identity document information. Common professions reported by workers included plumbing, painting, housekeeping, pool pump repairs, electrical repairs, gardening, car repair, gate motor repairs, child-minders and many others. Women were roughly 12% of the workers enrolled and more often reported skills and experience as domestic workers than as artisans.

Table 2 lists the number of people enrolled in each community.

Table 2. Workers enrolled

	Workers Enrolled	Women Enrolled (Percentage)
Diepsloot	324	36 (11%)
Alexandra	341	47 (14%)
Tembisa	361	38 (11%)
TOTAL	1027	121 (12%)

Our focus was on enrolling workers and not employers. We enrolled 10 employers, but through personal connections known to the facilitators, rather than through enrollment events focused on employers. Our intention was to focus first on the communities of workers and specifically the receptivity of workers to a digital

platform like VASTBlu, centering this initial pilot enrollment on the needs of workers and marginalized communities. Enrollment pilots for employers would be an important next step.



Figure 2. Enrollment team photos from Alexandra in November 2018

Our experience with these limited pilot enrollment events demonstrated encouraging levels of interest among workers. Workers demonstrated technical resources to install and use the application on their smart phones. We saw interesting differences between the professions we anticipated and the professions reported by workers. For example, we were surprised by a lack of workers specializing in cell phone repair, a profession we expected to see more represented. We found that both women and men were successful in enrolling workers, but we did see that women were more successful in enrolling women as workers. This suggests the potential need for strategies tailored to reach out to specific groups of workers.

4 DIGITAL WORK PLATFORM DESIGN CHOICES

Software developers and designers of digital platforms to support the sharing economy often begin with a focus on ease of use and enrollment. This is understandable because these platforms only offer value when there is a community of people enrolled and invested in using the platform. VASTBlu was no different in this regard.

In this section, however, we would like to look beyond the initial VASTBlu pilot to consider a range of design decisions that platform developers make along the way and highlight the ways in which these decisions can have profound impacts on the level of trust and power dynamics between participants in the platform. We would especially like to highlight the potential and responsibility that platforms have to assist in negotiating new power dynamics. This is especially relevant in places like South Africa where there is such an entrenched history of social and economic inequality, but all over the world, workers often come to the negotiation in a disadvantaged position. Platforms have an opportunity to help level the playing field and contribute to reducing unfair labor practices and unsafe working conditions.

This may not happen over night, but digital platforms can play an important role in moving the needle towards increasing the power and dignity of workers who have been disadvantaged by hundreds of years of unfairness and discrimination. In this section, we pose a problem statement that we hope can lead to new research directions. Specifically, what design decisions exist in digital platforms that can be deliberately and consciously made to shift the power dynamics in favor of marginalized communities?

Design Decision #1: Symmetry of review

One key design decision made by platforms is the symmetry of review between parties. For example, in Airbnb, hosts and guests each write reviews of each other, but they don't see the others review until they have written their own. There is a limited window of time in which a review can be written. There is an opportunity for one rebuttal statement. It is clear that changing parameters like this could change the balance of power between parties, for example, if only guests could rate hosts and not the other way around or if one party could read the other's review before writing their own.

A systematic study of this aspect of platform design and its impact on power dynamics in the sharing economy would be an excellent topic of future research. We don't see these aspects of platform design regularly highlighted as key comparison points between digital work platforms like Uber, Lyft, Grab, GoJek, Care.com and many others.

Design Decision #2: Type of reviews/ Validation of reviews

Another key design decision made by platforms is the type of review that is possible. For example, are ratings/feedback limited to a single numerical value (e.g. 1-5 stars)? Are participants rated in one or multiple dimensions (e.g. quality of work, professionalism/punctuality, value, etc.)

In digital work platforms, different employers may value different attributes of workers (e.g.

prioritizing experience, cost or quality, etc.). Similarly, different workers may value different attributes of employers (e.g. proximity, high wages, track record of fair treatment, etc.) In this way, the design decisions of platform developers to surface a particular attribute for review can have a large impact on how the platform mitigates issues faced by marginalized workers.

Another key design decision is the way in which reviewers are validated. Can anyone write a review for a worker or employer at any time? Can only participants who have had a validated interaction with another participant review them? Can participants see the history of anyone reporting a review (e.g. to see if they have a track record of reporting unusually bad reviews for workers who have otherwise good track records, etc.)

Similarly, platform designers decide what opportunities there are to dispute poor reviews or provide alternate evidence (e.g. is it even possible to dispute? Is there a limit to the number of back and forth responses? Does the platform do anything to intervene/validate the facts of a dispute? Does that answer depend on the nature of the allegations if for example criminal behavior is alleged? Is there a limited window of time for response?)

Platforms could also play a role in validating the description of jobs. Ticona et al's Beyond Disruption Report documents instances of employers who said a project would only take 3 hours and negotiated a complete project costs only for workers to find out it took well over the agreed upon time but they were not paid for more or workers were asked to do jobs not explicitly negotiated through the platform [12].

These design decisions can impact the degree to which reviews in the platform are susceptible to manipulation by competitors or to deliberate misinformation from malicious parties. Given that workers are often socially and economically disadvantaged in negotiations, we would like to see platforms consider design decisions that level the playing field by giving additional power to workers.

Design Decision #3: Timing of reviews

There are a set of key design decisions surrounding the timing of reviews. For example, how long is the window of opportunity for writing a review.

We would like to highlight one key design decision that is especially relevant in the context of longer term employment. For example, domestic workers may often work for the same employer for a longer period of time (e.g. providing childcare or cleaning services). In such a situation, an employer could withhold a good recommendation to gain additional and inappropriate leverage over the worker. In such a situation, a platform decision to enable or even require periodic review (e.g. monthly or quarterly) could have a dramatic impact on the ability of workers to accumulate good reviews over a period of time, making them less vulnerable to exploitive employers at the end of their employment.

Design Decision #4: Enrollment requirements

Another key design decision is the information that platforms collect from participants on enrollment. For example, do they collect information such as age that might lead to inappropriate discrimination in hiring? Do they collect information for the purpose of verifying identity that they do not make visible to other participants (e.g. a photo of an individual's government identity documents)? Do they allow or require individuals to link to identities on other social networks, allowing consideration of other forms of social capital? More generally, what existing sources of trust from governmental sources, societal sources (e.g. testimonial statements) or social media sources are they prepared to consider/integrate? Do they have a real name policy? Do they have exceptions for individuals who may have legitimate reasons for protecting some aspects of their identity to prevent workplace discrimination, harassment or targeting for abuse?

A similar design question is related to the degree of integration of banking and measures of

financial credit versus social credit. It is not uncommon to use credit cards, bank account information or credit scores as proxies for identity and responsible behavior. It is important to consider the impact of these decisions on the participation of unbanked individuals in these platforms as well as the tradeoff between financial credit history and social credit history.

The sharing economy relies on the ability to create trust between parties that don't know one another based on the trust that they each have in the platform and its review and vetting processes. This can interact with labor law and other laws and policies in complex ways. Platforms of all kinds could more consciously surface the design decisions they make and the implications of these decisions on the power dynamics between participants and especially on the impact of these decisions on marginalized communities.

Design Decision #5: Support for overcoming language and cultural barriers in complex negotiations

Platforms offer the potential for allowing participants from different backgrounds to negotiate complex aspects of a transaction despite language and cultural barriers. For example, in the South African context, a platform like VASTBlue could allow workers and employers to discuss bids for time and materials ahead of time in ways that would be impossible when a worker is asked to jump in the employer's truck to do a job. In a transaction like that language barriers, cultural barriers, lack of trust, common misperceptions and fears and even just lack of time all work to disadvantage workers from marginalized communities. Platforms give them an opportunity to negotiate a bid rather than simply jump in a truck, do the work and then take whatever is given to them at the end.

Platforms make a array of design decisions (e.g. interfaces to enable posting of jobs, submission of bids, comparison of competing bids, etc.) that influence the degree to which workers can negotiate favorable conditions based on their

experience without the interference of language barriers and cultural barriers.

Design Decision #6: Establishment of minimum standards including processes for deplatforming

Platforms have the ability to set minimum standards for the interactions of participants. In the context of a digital work platform, platform developers could develop policies (e.g. terms and conditions, review procedures, etc.) that support local labor law and fair employment practices as well as mitigate exploitation of workers by setting policies around wages, minimum hours, overtime and conformity to description of tasks.

One important and related design decision relates to the conditions under which platform participants could be deplatformed or removed from the online community. These are increasingly critical questions in a world, where some platforms like Facebook and Google have more "citizens" than most countries and in which the removal of platform access/identity could have huge impacts on the life and livelihood of individuals. Do rights do the "citizens" of these platforms have to vote on, influence or understand the policies that govern these decisions? What rights do they have to appeal a decision or present alternative evidence? In a digital work platform in particular, what rights/ability to platform participants have to export the contents of their skills portfolio to an open format that could be for example imported into a competing digital work platform.

Design Principles Can and Should Drive Design Decisions

We have given an initial list of 6 important design decisions that platforms throughout the sharing economy regularly encounter. We would love to see more data comparing how and why current platforms make the decisions they do as well as further research into the impact of these decisions on the platform participants.

Beyond that, we would like to make the point that there is an opportunity for high level design principles to drive lower level design decisions,

rather than arbitrary implementation decisions made by software developers in the moment. For us, the high level design principle we followed was that those who have been disadvantaged in society should not be further disadvantaged by the implementation of digital platforms and that where possible, these platforms should endeavor to mitigate barriers faced by marginalized communities and that platforms should be active agents of negotiating new power dynamics that aid in reducing inequality and leveling the playing field in society as a whole.

We argue that platforms have the potential and responsibility to consciously consider their design decisions from the perspective of broader societal impacts. Platforms derive their power and influence from the participation of large groups of individuals and should consider their impact on society. Digital work platforms, in particular, have the opportunity to increase the dignity and power of workers. Through deliberate design decisions rather than accidental choices, they could increase their impact on high-level goals such as the United Nations' Sustainable Development Goals (SDGs, especially #10 Reduced inequalities and #8 Decent work and economic growth. We consider this an incredibly rich and promising area for future research.

5 RELATED WORK

Digital work platforms are increasingly the target of academic study and research. In this section, we will mention just a few that are especially relevant to our work.

Some studies such as Alex Rosenblat's 2019 book "Uberland: How Algorithms Are Rewriting the Rules of Work" focus on platforms such as Uber and their impact on workers [9]. Rida Qadri's presentation "Algorithmized but not Atomized? How Digital Platforms Engender New Forms of Worker Solidarity in Jakarta" at the 2020 ACM/AAAI Conference on AI, Ethics, and Society found that the experience with platforms like Grab and GoJek are substantively different and demonstrates the risk of applying lessons

from other regions of the world to the Global South.

Hsiao et al. investigated how the benefits of the sharing economy can be limited to certain populations including younger populations and populations. Drawing from survey data with 508 participants, they demonstrated the ways in which trust in institutions, computer self-efficacy and ease of use positively correlate with individual's past use of and willingness to pay for future sharing economy services [4]. Unlike some other researchers, they did not see positive correlation with factors like higher incomes, higher education or higher trust in strangers.

Arun Sundararajan discusses how branded digital platforms like Airbnb, Tujia, Couchsurfing and BlaBlaCar can facilitate commercial trust [7]. He documents trends in shifting away from trust in institutions towards trust through digital community. He finds for example that BlaBla car users trust stranger with full BlaBla car profiles at a level higher than colleagues or neighbors and only slightly below family and friends. He discusses how the key innovation of these platforms is innovation around building trust, enabling strangers to trust each other in high stakes situations like staying in someone's home.

It is also important to consider not only the benefits that digital platforms might bring, but also potential damage. Ticona et al's Beyond Disruption Report highlights ways in which the interests of platforms can be at odds with the interests of workers [12]. Many platforms collect fees and would have an incentive to increase those fees. Sometimes those fees and penalties are a means of controlling behavior that may not be applied fairly. Platforms also have incentives to highlight workers or employers that pay for top ranking while penalizing others.

6 CONCLUSION

In this paper, we describe our efforts to deliberately design a digital work platform to address the barriers that workers in marginalized communities in South Africa face in accessing

commercial opportunities in wealthier communities located near them. We discuss the results of focus groups with community members in which they discussed these barriers and the technical platform mitigations we proposed to address exactly these barriers. We also report on our experience with a set of 9 pilot enrollment events in the townships of Diesploit, Alexandra and Tembisa in Johannesburg, South Africa between July and December of 2018. Beyond this, we identify a set of design decisions that most platforms in the digital sharing economy must make and discuss how the decisions made can impact the power dynamics between participants in the platform. We argue that platforms have the potential and responsibility to assist in negotiating new power dynamics, especially in regions with an entrenched history of social and economic inequality. We propose a problem statement that we hope can lead to new research directions. Specifically, what design decisions exist in digital platforms that can be deliberately and consciously made to shift the power dynamics in favor of marginalized communities?

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