

HOW DO COMMUNITIES BUILD RESILIENCE USING TECH?

DISPATCHER PILOT
NAIROBI, KENYA.



EXECUTIVE SUMMARY

Dispatcher is a new tool being built by Ushahidi, which seeks to reduce the friction associated with connecting those who need help in a community with those who can offer help. Automation, machine learning, and familiar technological tropes from widely adopted sharing economy apps are being explored as potential ways to achieve this goal.

Members of the Ushahidi team conducted a two-week long field research study in Nairobi, Kenya. The study included a mix of qualitative research methods, participatory design workshops, and community engagement activities with pilot participants.

During these activities, the Ushahidi team was able to confirm the validity of the underlying concept behind Dispatcher, as well as learn a great deal about the ways members of communities already help one another, the ways those people mitigate the risks associated with giving a receiving help, and the technology platforms they use to perform those tasks.

RESEARCH QUESTIONS

1

HOW AND WHY DO PEOPLE HELP EACH OTHER?

2

HOW DO PEOPLE WHO GIVE AND RECEIVE HELP MITIGATE RISK?

3

WHAT KINDS OF COMPENSATION DO PEOPLE EXPECT FROM THE SYSTEM AND OTHER PARTICIPANTS?

4

HOW DOES THE CURRENT DISPATCHER APP FALL SHORT OF USER EXPECTATIONS?



Over the weekend of 23rd February 2019, Ushahidi team members from the Canadian Far North, the Southwest of the UK, and Uruguay flew to Nairobi where Ushahidi's headquarters are located. Our Director of Community Engagement recruited and prepared participants for the activities before the rest of the research team arrived. We co-located in a hybrid, live-work space in Kilimani near the Ushahidi office in Nairobi, where we lived and processed our data. Four additional members of the team (based in Mombasa, San Francisco, Montreal, and New York) joined for sense making exercises during the second week of the study.

The research team represented a wide sample from the roles at Ushahidi. In addition to the two hybrid designer/researchers who led the activities, the research team included software developers and members of the community engagement, product management, programmatic grant management, and organizational leadership teams. The diversity of the research team and the focus of the research environment allowed the team to bring a broad mix of perspectives to bear on the data we collected, including gender, social background and ethnicity.

THE RESEARCH TEAM CONDUCTED FOUR ACTIVITIES DURING THE STUDY:



7 EVALUATIVE SESSIONS

where a researcher guided participants through a set of tasks and learned about the ways in which Dispatcher does and/or does not match the participants' expectations



7 FOUNDATIONAL SESSIONS

These in-depth sessions took the form of 1-2 hour semi-structured interviews looking at deeper questions like community cohesion, safety and trust.



EXPLORATORY GROUP

The group workshop probed potential use cases, points of friction, and unexpected ways the system may or may not fit into pre-existing patterns of community support. This included a user journey mapping exercise.



PILOT LAUNCH EVENTS

Held at the iHub, Nairobi's innovation hub and Strathmore University, where the research team signed-up people in order to glean analytical data and observe unguided use.



DISPATCHER

During these activities, the research team amassed roughly 14 hours of recorded interviews, and research data in the form of handwritten post-it notes, images, and handwritten notes. Every evening after conducting the day's research activities, the team reviewed their notes and translated the most salient pieces of information onto post-it notes which they organized on the walls of the live-work space. The team also briefly validated/clarified individual experiences from the sessions in an autoethnographic process. Team members reviewed notes they had written during the sessions and re-listened to audio recordings from in-depth interviews during the data collection portion of the study.



Demonstrated the product for, approximately 500 people over 2 days



Over these two days, 85 people immediately signed up to become users of Dispatcher. These users made 74 total requests and offers, 33 of which were immediately matched.



We conducted two full days of sense making activities in the live-work space after the data collection activities had been completed.

We began by reviewing all of the evaluative sessions we had conducted, and went through the app page-by-page in order to list all the ways the app did not meet user expectations.

Based on this data, the Dispatcher team was able to generate 310 Github issues to tackle in future sprints, ranging from deeper user experience (UX) gaps, to small user interface (UI) bugs, to system errors and optimizations.

For example, larger UX gaps included “Investigate whether Help Offers and Requests should continue to be modeled as symmetrical mirror objects, or whether a more Request-focused asymmetric model would be beneficial.”

Smaller UI bugs included “The Offer Help button is not currently discoverable as something that is interactive, investigate more 3-dimensional options.” Examples of system errors and optimizations included “App did not load for certain users with Internet Explorer on mobile devices.” Product management will guide the prioritization and execution of those issues moving forward.

In the second part of our sense-making activities, one of the designer/researchers facilitated affinity mapping exercises over the course of two days where the team arranged the post-it notes on the walls into clusters related to the guiding questions of the study. In doing so, the team brought it's shared understanding of the data to bear, re-organized the data along thematic lines, found answers in the data where they were available, and were able to pose new, refined questions for the Dispatcher team to probe in future research. Coming to a shared consensus on the intrinsic, human needs that Dispatcher aims to solve directly affects both the speed and effectiveness of future development and gives the team a deep empathy for the communities it aims to serve.

WHAT WE LEARNED

1

POSITIVE REACTIONS TO THE DISPATCHER CONCEPT

2

WHATSAPP ADOPTION

3

THE BOND OF GIVING AND RECEIVING HELP

4

WHY HELP?

5

MITIGATING RISK

6

RECIPROCITY

LEARNING

1

HELP

POSITIVE REACTIONS TO THE DISPATCHER CONCEPT

An overarching goal behind the research study was to test Dispatcher's underlying product concept. Of the hundreds of people we spoke to, the vast majority confirmed that a system for matching offers of help with requests for help in a community is a viable concept for a service.

One of the strongest signals for this was the phenomenon of "light bulbs going on" for hundreds of participants during the pilot events we held at the iHub and Strathmore University's Student Center. A typical interaction involved a member of the public approaching a table we had set up with an Ushahidi standing banner behind it, as well as Dispatcher flyers, stickers, candy, and business cards, and asking a member of the team why we were there. Our initial explanation went something like this:

We're working on a new tool called Dispatcher that lets people give and receive help in their communities. It works like this: you can offer help to other people or you can request help and the system automatically matches the requests with the offers so that people can support one another.



~~WICHE~~ Likes to do QA of betas "it helps people", "I like to help", (Random Apps) TRS

its about Stepping up

EF

There are ~100 people totally willing to help + be helped no strings attached

EF

feels good when helping.

EF

MK

Community champions are driven by impact

SM

~~FULFILING TO WORK THERE (IN MRP Kibera)~~

STEPHEN

INFORMAL NETWORKS - RELY ON THESE TO MAKE THIS CITY A LIVABLE PLACE.

Almost every single person immediately nodded in understanding and began to ask more detailed follow-up questions about features or agreed to let us sign them up for the service. We watched for furrowed eyebrows, perplexed looks, or frank admissions of "I don't get it", but these reactions happened rarely. More often than not, the body language of participants was positive and expressed understanding.

While there's a possibility of participants being drawn by incentives, this neither explains the near ubiquity of the "lightbulb moments" we witnessed, nor the frequency with which complete strangers to the product allowed us to guide them through signing up for Dispatcher having only heard an initial description. Of the approximately 500 people we spoke to over the course of two days, 85 people immediately signed up to become users of Dispatcher.

These users made 74 requests and offers, 33 of which were immediately matched. The research team personally witnessed 10 instances where actual exchanges of information or goods took place, including meal recommendations, giving an extra suitcase, or music venue recommendations. This final metric, while not a huge number, is very telling. It shows that a number of people were inspired enough to use the tool of their own accord after talking with us and understood the UI well enough to accomplish what they wanted. The product matched latent resources to needs and in doing so connected several people. These are exactly the kind of interactions Dispatcher hoped to promote.

LEARNING

2



WHATSAPP ADOPTION

One of the reasons the audience for Dispatcher immediately understood the product's intentions may have been that the act of offering or requesting help via a digital service is not new in the communities we visited in Nairobi. Most of the Dispatcher-like activity we heard about takes place on social media groups. We learned that the technology of choice in Nairobi is WhatsApp. Every single participant we spoke to belonged to and was an active user of WhatsApp groups for issues as wide ranging as tracking school bus progress in order to know when kids needed to go to the bus stop, small friends groups, women's groups, groups within one residential court of a larger estate as a community message board, groups posting funny memes, groups for women in tech, groups for regular weekly voluntary activities, etc. WhatsApp groups are so popular that people get invited to far more groups than they care to, or have time to participate in. Participants expressed annoyance at the sheer number of groups they get invited to. This point of friction with the number of WhatsApp group invites has become large enough that participants named a widespread social behaviour called "leaving" where an invitee immediately leaves a group as soon as they are invited, to which many of the inviters take offence.



Technology

Phone is like your
wife.

JO

app

Nick name =
tech mike

personal **DISPATCHER**

Despite this and other deficiencies with WhatsApp groups, participants also expressed extreme loyalty to WhatsApp as a platform. Some of the problems with the groups were the fact that there are no ratings for people in the groups, there is no way to check if agreed-upon favours or tasks were ever completed, groups have a maximum capacity of 250 members, and the sheer volume of messages often drowns out useful posts. Also, participants described WhatsApp groups that were prone to getting hijacked by trolls, troublemakers, and jokers. One participant described having to kick out so many members of a WhatsApp group for posting too many memes to such an extent that the splinter meme-posting group became much larger than the serious group. Another participant expressed a complex need to include the 'lurkers' and the value that people who are less actively engaged can offer, such as intermittent funding, verbal support and the phenomena of 'positively being watched' that younger people look to as 'aspirational behaviour'. When one researcher asked a participant what would happen if the chairman of his court told everyone in their court's WhatsApp group to switch to Telegram which he considered more secure, liked that it

was open source, and has no limit on the number of people in a single group, he replied with a laugh, "We would find a new chairman." Despite the platform's many obvious faults, WhatsApp emerged as the tool of choice for the kinds of activities envisioned for Dispatcher.

LEARNING

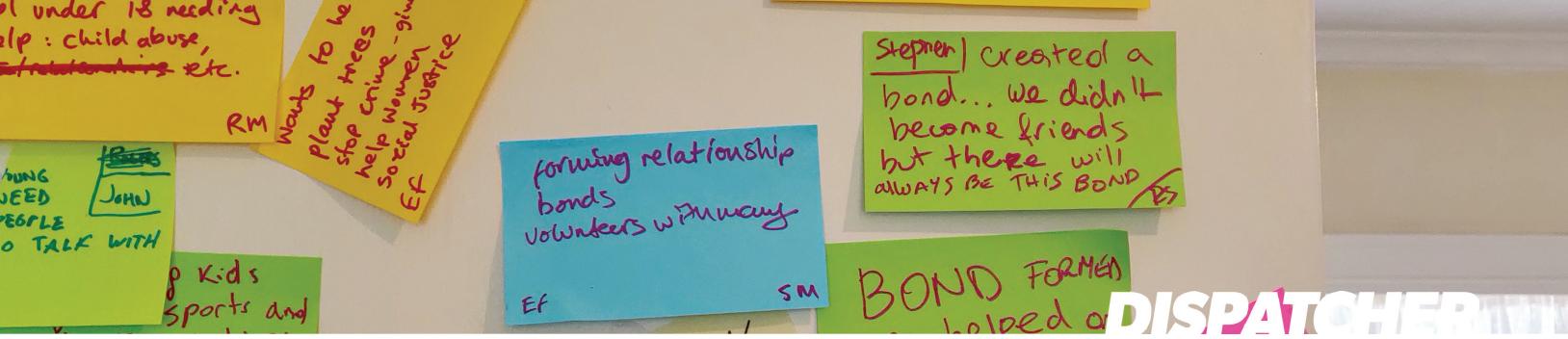
3



THE BOND OF GIVING AND RECEIVING HELP

One pattern that emerged from participants' descriptions of giving and receiving help in their daily lives was a sense of a "bond" created between people by acts of service. This may be expected in the case of life-threatening incidents. For example, one participant, S, described the experience of having an asthma attack while walking home from his job. Two women who live nearby noticed his distress, and drove to the hospital with him. He still talks to the women on a regular basis, considers them friends, and credits their act of service for this connection. He still talks to the women on a regular basis, considers them friends, and credits their act of service for this connection.





We discussed a unique description of a particular exchange with a participant from Kibera. They described breaking their smartphone (primary mode of contact and access to the internet) the participant described the process of giving their phone to their friend for a week so that they could fix it in their spare time. This participant was more than willing and blasé about giving their smartphone to this friend. When probed about the length of time the friend could take to fix it, the participant appeared unconcerned and only displayed concern if it was well over 3-4 weeks without being fixed. They described 'Knowing when, how and where to find their friend' therefore the level of trust with a item as important as a smartphone was high. They described being 'annoyed' but only if the friend didn't fix the smartphone or 'ran away with it' to which they described knowing how to follow up on that, that is, knowing how to find them even if they went far away. The same participant described not having the same level of trust for a store that fixes phones or someone that was a professional, but they didn't know where they were from or whether they would be able to follow-up if they 'closed their shop'. The levels of trust therefore, are higher in friends though the skills (in this specific case, smartphone repair) may not be as advanced and payment not needed. The participant also described the sense of 'allowing' your friends and community to assist you builds a level of trust that itself, is trustworthy and contributes to a wider 'social currency'.

One need not save another person's life for a bond to arise, though. For example, one participant described the simple act of lending a neighbour a booster cable when their vehicle wouldn't start. He still nods at this neighbour, who he wouldn't have otherwise spoken to or interacted with whatsoever. They may not be best friends, but a connection exists now between them that wouldn't otherwise be there. It's worth noting that this experience of a bond occurred for both the helper and the person who received help. One of the above participants also described a 'eye-opening' experience facilitated through helping and offering items and abilities that were well within their sphere of control to those less affluent/able. They described the need not only to continue with the above kinds of actions, but providing the same or similar experiences to peers. Another participant described being stranded at home during a matatu strike. He implied that it would have been dangerous to travel by other means. Again, a neighbour was able to arrange a taxi for him. Not only did this small act of service create a connection where one did not previously exist, but he described connections like these as an essential way to make a city like Nairobi, where many people live far away from their families, villages, and tribal groups, a better place to live.

LEARNING

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WHY HELP?

While a sense of a bond arose as a positive side-effect from acts of service in a community, the participants did not describe the anticipation of those bonds as reasons for helping in the first place. The scope of this study does not allow us to make well-founded claims on the deep motivations behind all human altruism. We did, however, observe that in all the descriptions of helping we elicited in our sessions, participants regardless of whether they described the act of giving or receiving help, had some notion of belonging to a shared interest group of some kind. In most cases they were strangers, but not perfect strangers. They always described some commonality (common interest, location, circumstance etc.) as the basis for trust in giving or receiving help. One participant described a sense of 'always having a need to help within them' and more than one participant described a sense of 'duty' to help others that have come from similar backgrounds or upbringing where individuals are more likely than not to find themselves in legal trouble. Setting examples, being engaged and escaping stereotypes of less affluent areas prevailed in the commentary.



DISPATCHER

SHAREL (INTERESTS)

Lucia
- currently on maternity leave.
a and a half month old and

EXISTING IN-GROUPS
(ex UNIVERSITIES,
CHURCH)

area | moms whatsapp
group. Needed

some DISPATCHER

Place emerged as one of the most powerful factors that create the baseline solidarity between givers and receivers of help.

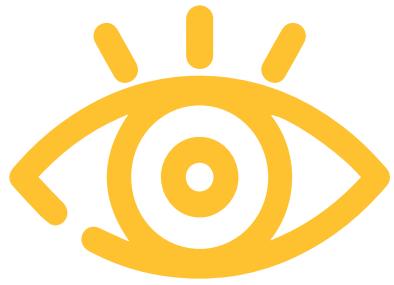
The participants' characterizations place in this context varied wildly, though. One participant claimed that any member of the four households in his building, or the 96 other households in his court were trustworthy, but any other person in an identical court within the estate of Nyayo were "strangers." On the other extreme, one participant claimed that anyone who lived in Kibera, an informal settlement with a population in the hundreds of thousands, would warrant enough trust. The conceptions of place, therefore, are much more complicated than belonging to the same "neighbourhood."

Beyond where they live and work, participants described several other common interests in the context of belonging to a community:

- Common circumstances (Being a Parent/Mother in the same area or month)
- Having a shared interest (Open internet, community engagement, wanting to 'prove' self)
- Shared background (having 'pulled oneself up from hardship')

- Being part of an 'interest group' (Red Cross volunteer, Community group, Church congregation, Internet society)
- Explicitly **not** being part of a location/social economic group
- Tribal affiliation, tiered with city affiliation then country wide affiliation ("I'm from [specific village in Kibera] I'm Nairobi-an, I'm Kenyan. Tribe comes into this too, but not always as strongly")

The higher the perceived need, the less another person's strangeness/lack of 'connection factor' seemed to matter, and a sense of belonging together helped people overcome the initial hurdles of distrust common in many interactions between strangers. More than one participant described their actions in a given hypothetical scenario where there were escalating levels of urgency. There was an implicit indication that certain emergencies warrant immediate action like injury and lost/hurt children.



LEARNING

5

MITIGATING RISK

One salient signal that we observed in our study was that a wide open forum where anyone could participate was considered risky. One of the most common follow-up questions to an initial description of Dispatcher was, "So, anyone can use it?" accompanied by a look of concern. Participants (of any background and location regardless of social status) in our journey mapping session described anxieties over being conned, robbed, or assaulted by strangers as a primary thought while interacting with another Dispatcher user for the first time. Participants did not trust a system where simply anyone could participate without any safeguards in place. We had expected these types of reactions. They mirror concerns raised during usability tests before the study. In one participant's words, "*It can't be just anybody.*" We set out to discover the ways that communities turn "just anybody" into someone they trust enough to help or ask for help.

We also uncovered a worry over social vulnerability and visibility. One participant described fear associated with 'asking for help' with certain things which they were socially expected to provide and 'have together' and described being worried about 'being made fun of' by peers.

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I created a
... we didn't
me friends
here will
be this bond

EF

INSTINCT

Instinct as the
litmus test for
trust (Shannon,
Stephen)

Intuition, chat, and
profile will tell you

INSTINCT
AS TRUST

DISPATCHER

Participants described two primary ways of mitigating the risks posed by bad actors in the groups they already belonged to: a structured approach where officials, vouching systems, registrations, and strict guidelines for participation created confidence in a group's members, and an intuitive approach where a pre-defined gatekeeper will use their intuition to determine the trustworthiness of potential members.

The best formulation of the structured approach was by a participant who described the way his court manages a communal WhatsApp group. The first structure in place is that each member of the group must pass a set of admissions criteria. For example, they must live in the court, and each court in his estate has very strictly delineated boundaries with walls and guarded gates at the entrance. Further you must register with the court's chairman, a volunteer position with a small volunteer staff that assists with managing the court and acts as its representative at inter-court and estate-wide meetings.

Each member of the WhatsApp group must also be vouched for by another member of the court,

often the chairman if they are new. The chairman moderates the WhatsApp community and enforces a strict ejection policy, whereby an offender would be removed from the group for violating its rules. When we pressed the participant about whether there had ever been any incidents where someone had violated the terms of the community, he could only think of some people who had posted an advertisement on behalf of a family member, or people who posted too many memes and had been ejected. In other words, this system for governing inclusion and exclusion in the court's group seemed to be very effective. He attested to its efficacy on several occasions. Participation in this community requires registration with a physical address in the permitted area, vouching by a trusted member of the community, continued compliance with a code of conduct, and accepting enforcement by an official moderator voted in by the community.

This approach to mitigating risk relies on the official structures put in place by an authority figure ahead of time to remain secure and safe.

What we're calling the "intuitive" approach to risk mitigation in the communities we saw still involved a gatekeeper of some kind assessing newcomers to the group, but based on a different set of criteria. Participants who had found themselves in these kinds of gatekeeping roles described using the "feeling" of a new person to decide whether or not they could belong. For example, one member of a citizen journalist group in an informal settlement in Nairobi said that when new volunteers approached the group, he would "sit them down and ask them why they want to help," and assess them for "passion." When we pushed him about other criteria, like if someone from outside the settlement tried to join, it became clear that other unspoken criteria may also exist, but they felt like such common sense as to not need enumerating. More than one participant described a process of 'being able to tell' whether someone was okay from visual and language indicators: what kind of slang they use, how they walk, how they dress, their accent, etc. Another participant described a process of "drip feeding trust signals." You offer a small piece of information over the chat system and wait for a similar match of trust through details offered.

This kind of "sussing out" behaviour also cropped up in our journey mapping sessions as participants described the experience of meeting up with a stranger via Dispatcher to exchange a service or item. They would use profile picture, description, reviews, and other commonplace profile items from other sharing economy apps to determine their trustworthiness. For additional safety, they described public places where

they could meet in order to mitigate the risk of meeting a stranger in person for the first time.

The women we spoke to had unique and innovative methods in which to mitigate risk and increase safety. This was a concern amongst all participants, but women had active and practical solutions to their worries. Some examples include: exit plans for when a potential community member they match with in Dispatcher displays worrying behaviour, check-in protocols with friends and family, proximity assessments as to how close by trustworthy people are to a match and device specific risk mitigation. One participant described keeping the location system setting 'off' in their phone at all times due to "being concerned that apps track location without asking or notifying them" just to be safe, this person only turns location on when an app they want to interact with requires it, for that moment that it needs a location. They then will turn it immediately off. We did not probe further but investigating the ways in which the marginalised and vulnerable members of a community maintain safety will be key to investigate in upcoming research.

It's also worth noting that all of the now-familiar ways that sharing economy apps create trust between users were mentioned during evaluative sessions. Some combination of profiles with photos, rating systems, door-to-door location broadcasting, safe 'middle' places, reviews, and reporting would be expected in a future release of Dispatcher.



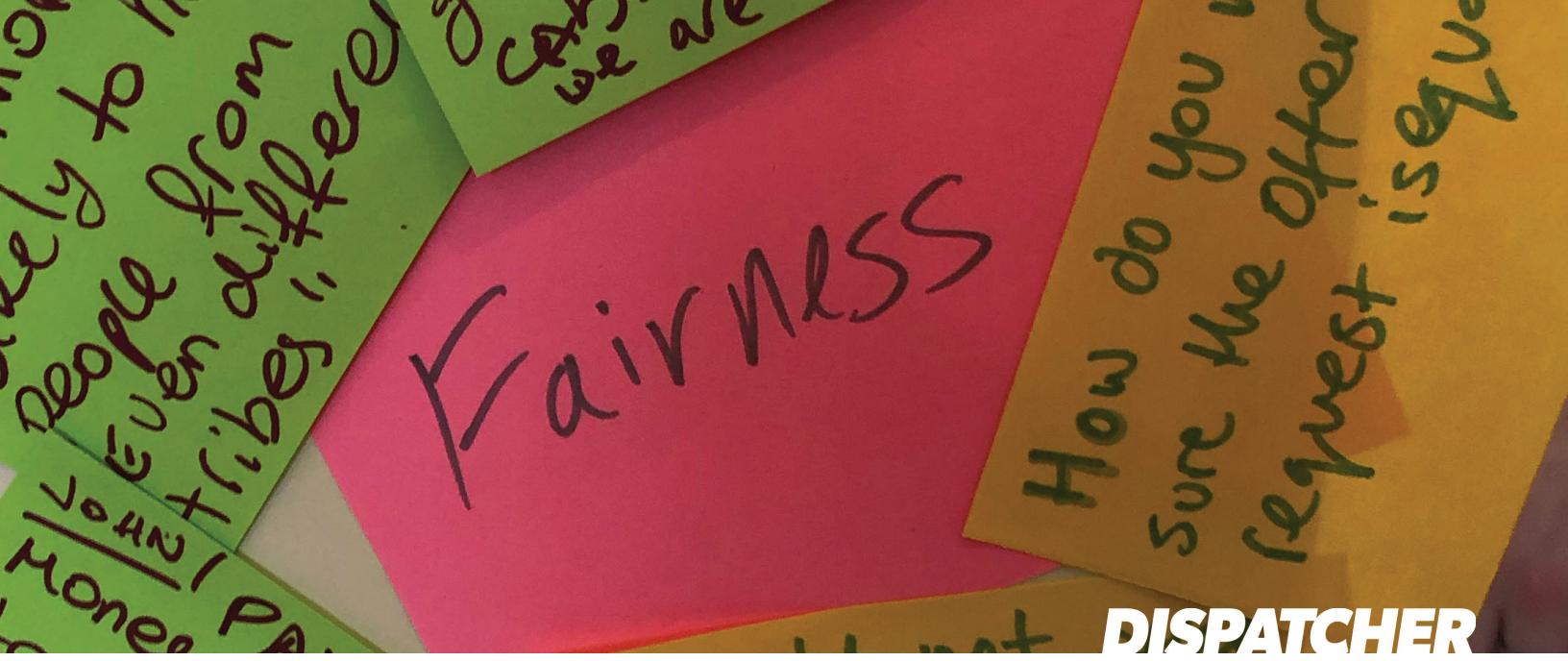
LEARNING

6

RECIPROCITY

Another line of questioning in our research assessed the role that reciprocity played in people's day-to-day experiences of giving and receiving help in their communities. We asked participants how they might or might not expect to give or receive payment, favours, or some other quid pro quo after an act of service had been completed. Beyond a realization that monetary reward did not feature strongly as a reason for helping except in instances concerning highly skilled services (e.g. IT services), we found three approaches to reciprocity. The first, and perhaps the least surprising, was a "pay it forward" mentality, where a participant described, "*I just put it out there, and maybe it will come back to me someday.*" He expressed a common belief that, having done a good deed in a just universe, that deed might be rewarded in some way.





The second approach insisted on re-balancing the material cost of the helper as soon as possible. Recipients of help in this case were adamant to repay the monetary damage the helper had incurred in helping them. For example, one participant, having taken the cab ride that a neighbour had arranged during a matatu strike, immediately, “sorted him back,” that is, paid him back for the cost of the cab. When I asked him why, he said “it must be done” implying that, in this case, not paying him back would have been a severe lapse in etiquette, and that the helper expected repayment.

The third approach was an extreme example for people who had received help such that they could never hope to repay the helper.

One participant, describing an incident where a stranger had saved his life, described “*a debt I don't know how to repay*.” When we asked him more about it, he became stressed and tears came to his eyes. The discomfort that this indebtedness creates can be so extreme that people who need help may reject well meaning offers from their communities. For example, we heard about one instance where a student who

could not pay their tuition and was at risk of losing a semester rejected the sum of money that their classmates had pooled together to support him. In this case, the fear of this “debt I don't know how to repay” was strong enough to prevent the act of service from happening at all. In these three attitudes towards reciprocity, pay it forward, “sort him back” and “indebtedness”, the immediate sociocultural context determined the participants’ attitudes towards reciprocity.



DISPATCHER

Several members of the public asked about this aspect of the product during our pilot days at Strathmore University and the iHub, whether or not the app would facilitate payment between helpers and requesters, and whether or not the app would be a free service overall. Optional tipping was one model we discussed with several participants that was received positive feedback. Optional tipping is a promising model for reciprocity and app self-sufficiency. However, sociocultural norms around tipping vary widely around the world. A waiter in Vancouver might expect a semi-mandatory 18-20%, a bartender in Edinburgh may hope for a few pounds from wealthier patrons, and a pho vendor in Hanoi may never have heard of tipping in their life. An unambiguous path to optional reciprocity will

need to be in place within Dispatcher, but it needs to be flexible enough to adapt to local contexts of use and sociocultural norms.

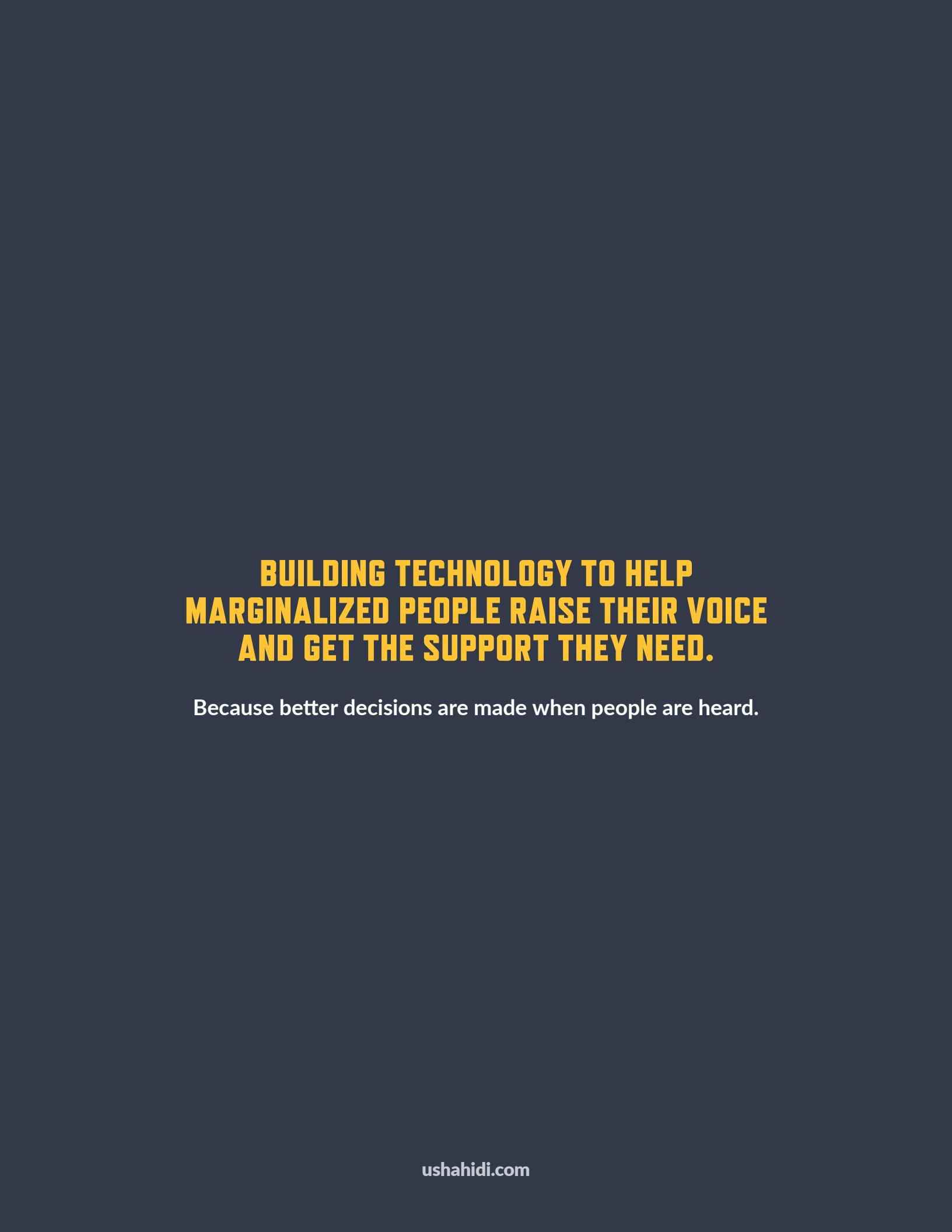


CONCLUSION

Over two weeks of study in the field, we validated the fundamental concepts underlying Dispatcher. We uncovered a sense of a bond that exists when members of a community perform acts of service for one another. We also learned about the diverse configurations communities can take, from geographically dispersed common interest groups to collections of neighbours on WhatsApp groups and beyond. Those communities mitigate risk through formal structured approaches to membership and more intuitive gut-checks regarding new members. Finally, we learned that immediate financial reward did not compel people to help others. Rather, a sense of putting out a good action into the world in the hope that it may be reciprocated some day was a stronger driver to help. For recipients of help, an act of service may appear as something that requires immediate financial recompense or a “debt” that cannot be repaid, depending on the context. These, and many other insights from our time in Nairobi will form the basis of the next generation of improvements to Dispatcher service.

The ability to create groups that mirror groups in the real world has risk. Inclusion can create and leverage solidarity, but it also excludes. If done improperly, they could re-inforce stereotypes, entrench xenophobia, or further marginalize already marginalized peoples. As we build features that govern inclusion and exclusion, the team will have to rigorously test and understand how these dynamics play out in the communities where we deploy and modify the system accordingly.

Rollout needs to take local contexts into consideration. Communities take diverse forms, and a rigid, one-size-fits all approach won’t work.



**BUILDING TECHNOLOGY TO HELP
MARGINALIZED PEOPLE RAISE THEIR VOICE
AND GET THE SUPPORT THEY NEED.**

Because better decisions are made when people are heard.