

#More Than Code

Practitioners reimagine the
landscape of technology
for justice and equity



#MoreThanCode:

Practitioners reimagine the landscape of technology for justice and equity

By Sasha Costanza-Chock, Maya Wagoner, Berhan Taye, Caroline Rivas, Chris Schweidler, Georgia Bullen, & the Tech for Social Justice Project

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Executive Summary



OVERVIEW

Our society is in the midst of an extremely urgent conversation about the benefits and harms of digital technology, across all spheres of life. Unfortunately, this conversation too often fails to include the voices of technology practitioners whose work is focused on social justice, the common good, and/or the public interest. Every day, technology practitioners in government agencies, nonprofit organizations, colleges and universities, libraries, technology cooperatives, volunteer networks, and social movement organizations work to develop, deploy, and maintain digital technology in ways that directly benefit their communities. These practitioners include software developers, designers, and project managers, as well as researchers, policy advocates, community organizers, city officials, and people in many other roles.

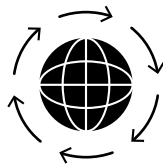
#MoreThanCode aims to make the voices of these diverse practitioners heard. Our goals are to **I. explore the current ecosystem; II. expand understanding of practitioner demographics; III. develop and share knowledge of practitioner experiences; IV. capture practitioner visions and values; and V. document stories of success and failure.** We focus primarily on practitioners who work in the United States.

This report was produced by the Tech for Social Justice Project (<https://morethancode.cc/>), co-led by Research Action Design (RAD) and the Open Technology Institute at New America (OTI), together with research partners Upturn, Media Mobilizing Project, Coworker.org, Hack the Hood, May First/People Link, Palante Technology Cooperative, Vulpine Blue, and The Engine Room. NetGain, the Ford Foundation, Mozilla, Code For America, and OTI funded and advised the project.

Methods: #MoreThanCode is a Participatory Action Research (PAR) project. All research partner organizations worked together to develop the research questions, study design, data collection and analysis, conclusions, and recommendations. We interviewed 109 people and conducted 11 focus groups, with 79 focus group participants. A total of 188 individuals participated in the study. We sought diverse participants in terms of gender identity, sexual orientation, race/ethnicity, educational background, sector (government, nonprofit, tech coop), urban/rural location, and other factors. Our study focused primarily on practitioners in the United States. Detailed study participant demographics can be found in the main body of the report. We also collected and analyzed secondary data, including: a database of 732 organizations and projects; IRS form 990 data for over 40,000 relevant nonprofits; over 14,500 job listings; and over 350 educational programs, networks, and associations. The Appendices include detailed methodological information, links to relevant secondary datasets, and links to interactive tools to further explore study data and findings.

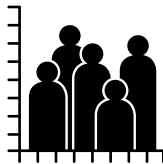
GOALS

The following goals, developed by all partners at our first convening, guided our research process:



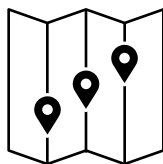
I. ECOSYSTEM

Define the field(s) and inventory the current ecosystem.



II. DEMOGRAPHICS

Expand understanding of who participates in the field(s).



III. PRACTITIONER EXPERIENCES

Establish a baseline understanding of practitioner experiences, how individuals came to this work (career path), barriers and opportunities practitioners (and their communities) face, and the support practitioners may need now.



IV. VISIONS & VALUES

Capture practitioner visions of what is needed to transform and build the field(s) in ways that are inclusive and aligned with their values (social justice, social good, public interest, etc., as articulated by practitioners themselves), as well as how to mitigate threats.



V. STORIES OF SUCCESS AND FAILURE

Document and distinguish models and approaches to carrying out technology for social justice (& etc.) work and projects on the ground. Identify what works, what doesn't, and why.

FUNDING & ADVISORY ORGANIZATIONS



NetGain

To address the challenges and opportunities of the Internet age, a group of major foundations has joined forces. Our goal is to strengthen digital society and advance the public interest.



Code For America

Code for America is working towards a government by the people, for the people, that works in the 21st century.



Open Technology Institute

OTI works at the intersection of technology and policy to ensure that every community has equitable access to digital technology and its benefits. We promote universal access to communications technologies that are both open and secure, using a multidisciplinary approach that brings together advocates, researchers, organizers, and innovators.



Ford/Mozilla Open Web Fellows Program

The Open Web Fellows program – a collaboration between the Ford Foundation and Mozilla – is a 10-month fellowship program that brings together technology talent and civil society organizations from around the world to advance and protect the open internet. Berhan Taye and Maya Wagoner were both supported to work on #MoreThanCode in part by Open Web Fellowships.

RESEARCH TEAM

Coordinating Organizations



Research Action Design

Chris Schweidler, Berhan Taye Gemedo, Bex Hurwitz, Caroline Rivas, Sasha Costanza-Chock, Puck Lo, Jayden Donahue

Research Action Design (RAD) uses community-led research, collaborative design of technology and media, and secure digital strategies to build the power of grassroots social movements.



Open Technology Institute

Georgia Bullen, Maya Wagoner, Nat Meysenberg, Brooke Hunter, Alison Yost, Joanne Johnson, Chhaya Kapadia

The Open Technology Institute (OTI) works at the intersection of technology and policy to ensure that every community has equitable access to digital technology and its benefits. We promote universal access to communications technologies that are both open and secure, using a multidisciplinary approach that brings together advocates, researchers, organizers, and innovators.

Research Partner Organizations



Coworker.org

Jess Kutch, Michelle Miller

Coworker.org allows you to start, run, and win campaigns to change your workplace. Have an idea for improving your workplace? Start by creating a Coworker.org petition and talking to your coworkers about your campaign. Every day, people are launching and joining campaigns around issues large and small — from improving an office break room to providing paid sick leave to employees.

Anything is possible when coworkers join together.



The Engine Room

Zara Rahman

The Engine Room helps activists, organizations, and other social change agents make the most of data and technology to increase their impact. We are a non-profit organization ourselves, and our international team is made up of experienced and committed practitioners. Since 2011, we have supported more than 200 organizations, big and small, from every corner of the globe.



Hack the Hood

Kim Garcia

Hack the Hood is an award-winning non-profit that introduces low-income youth of color to careers in tech by hiring and training them to build websites for real small businesses in their own communities. During 6-week "Boot Camps," young people gain valuable hands-on experience, build a portfolio, and learn about opportunities in the tech industry, as well as building critical technical, leadership, entrepreneurship, and life skills with mentorship from staff and tech professionals working in the field.



May First/People Link

Alfredo Lopez, Jamie McClelland, Jaime Villarreal

May First/People Link engages in building movements by advancing the strategic use and collective control of technology for local struggles, global transformation, and emancipation without borders.



Media Mobilizing Project

Helyx Chase

The Media Mobilizing Project (MMP) builds leaders—leaders who use their stories to make our organizing stronger; and who build the movement for human rights and to end poverty. Since its founding in 2005, MMP has used strategic media, arts, and communications to intervene in critical human rights struggles from public education to healthcare, media reform, and public services.



Palante Technology Cooperative

Jack Aponte

Palante works to help progressive nonprofit organizations move forward with the aid of technology. We come to this work with technical expertise, a deep understanding of the particular needs of community organizations, and a long-standing commitment to working for social justice.



Upturn

Harlan Yu

Upturn works to give people a meaningful voice in how digital technology shapes their lives. We break down barriers between policymakers, technology-builders, and communities, so society can maximize the benefits and avoid the risks of new technology. We produce clear, incisive research and analysis of emerging issues in technology and public policy that guides the public conversation.

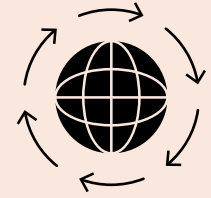


Vulpine Blue

Willow Brugh

Vulpine Blue helps clients hold on to their most valuable asset—the workers. Blue takes their experience cultivating healthy working relationships between disadvantaged and distrusting organizations around the globe in the context of epidemics, disaster, and attack; and focuses this expertise on their client's primary employee retention fulcrum: internal communication.

I. Ecosystem



“ I think there’s a lot of small grassroots and community-based organizations that are doing really, really great work and hustling really, really hard, and because they’re so small and because they work specifically with People of Color, they definitely do not get the recognition that they deserve, and they don’t have access to opportunities like other bigger NGOs. ”

— HIBIKI, DIGITAL SECURITY TRAINER

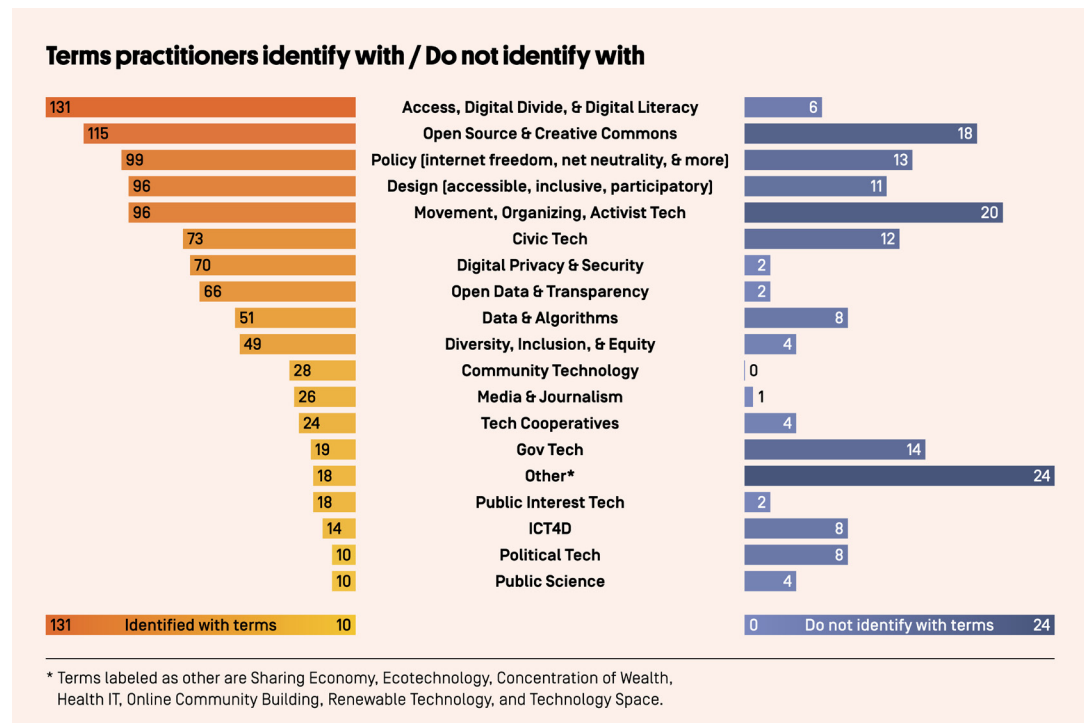
I. ECOSYSTEM

Our first research goal is to **explore the current ecosystem** by defining and taking inventory of the field(s).

Like a natural ecosystem, the ecosystem of people, organizations, and networks who work at the intersection of technology and social justice, social good, and/or the public interest is complex and constantly changing. We found:

- **People use many different terms and frames to talk about this ecosystem.**

Study participants identified over 252 terms to describe the work they do (see <http://bit.ly/t4sj-terms-shared>). We gave 96 participants a terms worksheet and asked them to select or add terms they identified with. The most frequently used terms included “free software” (selected by 40) and “open data” (37); “privacy” (36) or “security” tech (31); “digital literacy” (35); “open web” or “open internet” (30 each); “community technology,” “civic tech,” and “net neutrality” (28 each); “tech policy” and “inclusive design” (27 each). The terms that people found most problematic were “sharing economy” (18) and “smart cities” (14). We also coded all 215 terms into the following top-level categories:



For a chart with more detail, see the Definitions & Framing section of the full report.

- **Many practitioners feel that differences between terminology and framing are important and should not be erased.** Participants articulated clear differences between “civic tech,” “community technology,” and “public interest technology.” Many identify with one, but not another, of these terms. For example, some see “civic tech” as a field of practice that is predominantly white, male, U.S.-centric, and institutionalist. Several participants, mostly women, LGBTQ folks, and/or PoC who feel excluded or marginalized from other technology related spaces, said that they feel included in “community technology” spaces.
- **Just one in five [18 out of 96] participants identified with the terms “public interest technology” or “public interest technologist.”** Many think of these terms as primarily relevant to government technology, telecommunications policy, and public interest law.
- **About half of study participants do not identify as “technologists,”** even if they work extensively with technology, and in some cases, even if they are software developers. A few shared their experiences of men policing the meaning of the term. When asked to identify their role(s) in the field, half (52%) of participants selected “technologist” and 40% selected “community organizer.”
- **Funders control the frame.** Some practitioners described feeling pressure to frame their work in a certain way in order to have access to funding streams. A few explicitly rejected the introduction of new umbrella framings, such as “public interest technology.” Instead, they prefer to use terms and frames that are specific to the type of work they do, the values and politics they hold, and the communities they work with.
- **Funding is unequally distributed among the various subfields in this ecosystem, in ways that replicate structural inequality.** For example, study participants shared that in their experience, national organizations, organizations led by white men, and those with certain frames receive the lion’s share of resources.

- **There are thousands of organizations working in this ecosystem.** We gathered a database of over 700 organizations and projects, identified over 40,000 nonprofit organizations from IRS form 990 data, and populated a spreadsheet with hundreds of educational programs and networks (both formal and informal) focused on helping people develop skills for this work. In addition to nonprofit organizations, participants said that tech cooperatives and collectives, membership organizations, and independent consultants provide key support for the technology needs of grassroots, movement-building organizations.

Summary Table: Organization Counts by Category

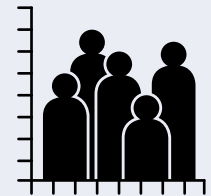
Category	990	990EZ	990PF	Grand Total
Nonprofit Tech	13147	10595	3745	27487
Open Data & Transparency	6017	552	212	6781
Digital Privacy & Security	1437	85	88	1610
Diversity, Inclusion, & Equity	1093	207	296	1596
Access, Digital Divide, & Digital Literacy	305	58	88	451
Open Source & Creative Commons	267	73	94	434
Design (accessible, inclusive, participatory)	213	40	46	299
Policy (internet freedom, net neutrality, & more)	74	5	15	94
Media & Journalism	49	7	16	72
ICT4D	44	6	21	71
Public Science	40	11	13	64
Community Technology	42	2	15	59
Data & Algorithmic Bias	28	5	12	45
Gov Tech	24	4	6	34
Movement, Organizing, Activist Tech	18	3	10	31
Civic Tech	18	2	9	29
Tech Cooperatives	10	5	2	17
Crisis & Disaster Response	1	1	-	2
Public Interest Tech	-	-	1	1
Grand Total	22827	11661	4689	39177

- Organizations with gross receipts normally <\$50,000 must file form 990-N (but may choose to file a complete Form 990 or Form 990-EZ.) In prior years only organizations with gross receipts normally <\$25,000 could file the Form 990-N ("e-postcard").
- Organizations with gross receipts > \$50,000 and <\$200,000 and total assets <\$500,000 must file form 990-EZ or complete Form 990.
- Organizations with gross receipts > \$200,000 or total assets > \$500,000 must file Form 990.

For more about these key findings, see the Ecosystem section of the full report.

- **A great deal of work is done by volunteers, nonprofessionals, and informal networks.** This indicates the strength, breadth, importance, and attraction of the field. However, some participants feel that reliance on volunteerism has negative implications for inclusivity and sustainability.
- **Practitioners across this ecosystem are doing transformational work, even in conditions of scarce resources.** This is a diverse, vibrant ecosystem, and we found many powerful stories of success (see the *Models that Work* section of the full report for examples).

II. Demographics



“

*There's this expectation of who you must be,
and what your background should be like.
I don't have that background.
That traditional background.*

*It's interesting, I'd enter a room and they'd act
like basically I'm the one getting coffee. Being
a person of color is still an issue in our sector,
and it's something we need to change. Also,
not being male is an issue. Who's getting the
funding? Let's take a look at that.*

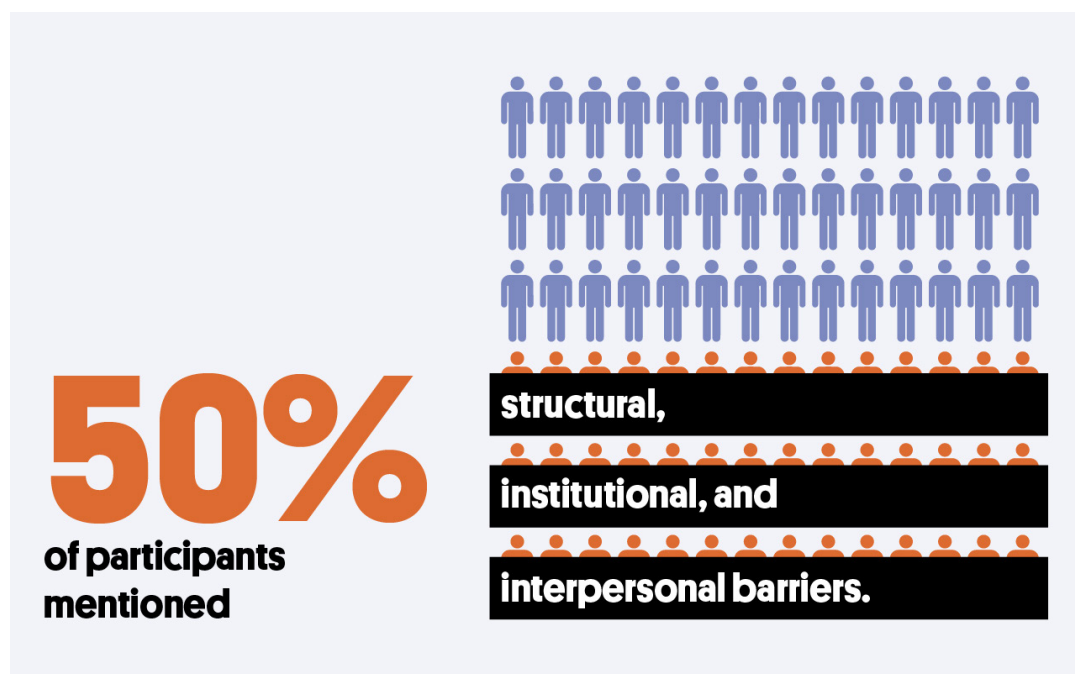
”

— CHARLEY, EXECUTIVE DIRECTOR AT A
TECHNOLOGY NONPROFIT

II. DEMOGRAPHICS

Our second research goal is to **expand understanding of practitioner demographics**.

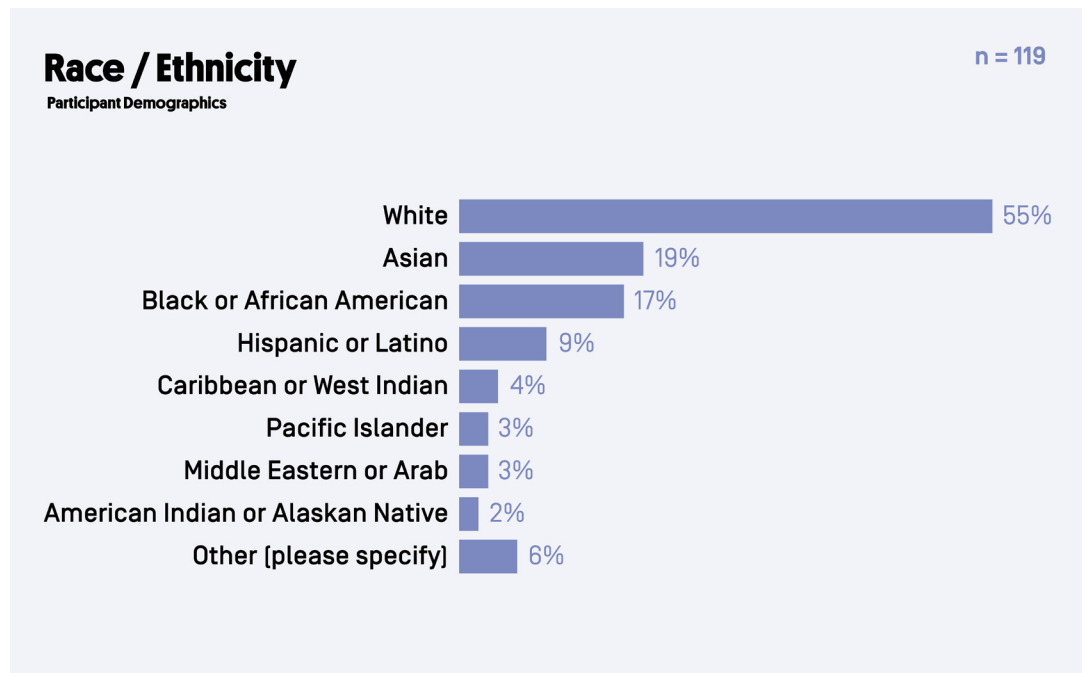
Racism, sexism, classism, ableism, transphobia, and other forms of oppression permeate the broader tech sector. Unfortunately, based on the experiences of study participants, the non-profit, community, and public tech subsectors we looked at are not immune to these problems. A total of **188 individuals participated in our research**, including **79 focus group participants and 109 interviewees**. A total of **121 individuals [64% of participants]** completed the demographic questionnaire. We found:



For more about these key findings, see the Demographics section of the full report.

- **Many practitioners [about 50%] shared experiences of intersecting racism, sexism, classism, ableism, transphobia, and other forms of structural, institutional, and interpersonal oppression while working in this ecosystem.** Like the broader technology sector, in study participants' experiences, this ecosystem is disproportionately dominated by elite white cisgender men in leadership and decision-making positions.

- **This ecosystem lacks public demographic data about race, class, gender identity, sexual orientation, disability, and other important variables.** Key actors in the space, including the biggest players such as Code for America and the Knight Foundation, have not historically tracked or publicly shared demographic data about their employees, volunteers, leadership, or grantees, although this is beginning to change. This undermines accountability for equity goals.

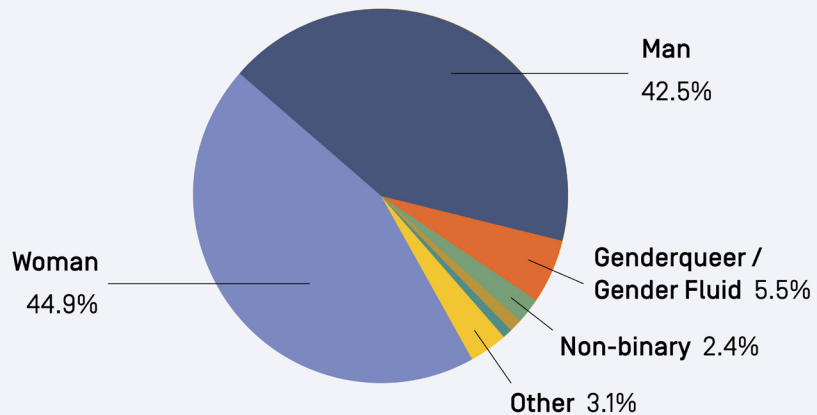


- **There are a number of well-developed strategies for addressing diversity, inclusion, and equity.** Practitioners shared existing strategies and suggested their broader adoption. Suggestions for best practices include: gather and share demographic data about field participants; publicly set equity goals with timelines; and adopt best practices in recruitment, hiring, and mentorship.

Gender Identity

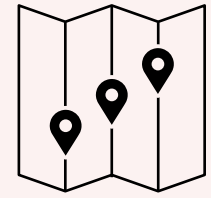
Participant Demographics

n = 119



- **Based on study participants' experiences, this ecosystem is more diverse than the broader tech sector, but it still needs to be more diverse and inclusive.** The ecosystem lacks demographic data, so we cannot make strong statistical claims. However, we trust participants' statements about their lived experiences. We worked hard to include groups of people who are often marginalized in the broader tech sector in this study: of 121 participants who completed our demographic questionnaire, 55% identified as white and 45% as PoC. 48% identified as women, 45% as men, and 14% as genderqueer/ genderfluid, non-binary, trans, or other. 52% work for nonprofits, 25% in a for-profit business or cooperative, 14% in government, 9% in a foundation, and 8% in a university. Participants could choose more than one option, allowing the totals to be greater than 100%. More details are available in the *Demographics of Study Participants* section of the full report.

III. Practitioner Experiences



“ I didn’t study technology in school. I didn’t go to school for tech. I did English and women’s studies. I’ve had very little formal tech education. Almost all of my learning has been on the job [...] Well, tinkering as a kid and starting to play on the internet when I was younger. I could figure out some things online, and I could set up computers well for people, and parlayed that into working for nonprofit organizations in New York. ”

— MATIJA, WORKER/OWNER AT A TECH COOPERATIVE

“ I saw my future Ph.D. advisor give a talk that just blew my mind, where I realized, “Oh, people do that stuff, and they get paid to do that stuff, and I can do that stuff. ”

— ARTEMIS, PHD IN COMPUTER SCIENCE AND RESEARCHER AT A NONPROFIT


III. PRACTITIONER EXPERIENCES

Our third research goal is to **develop and share knowledge of practitioner experiences** by establishing a baseline understanding of how individuals came to this work (career path), barriers and opportunities practitioners (and their communities) face, and the support practitioners may need now.

Practitioner experiences are quite diverse: there is no single pathway into this work. Many techies are self-taught, and there are many important roles besides software developer. Supportive individuals and mentors, networking, fellowships, conferences, and the movements they are part of are all defining factors in participants' career trajectories into this work. Women practitioners said they must learn to navigate being a woman in tech, and they mostly have to work in and engage with hostile and blatantly sexist environments. Some participants also described their experiences of racism, classism, homophobia, transphobia, and other forms of discrimination. We found:

- **There is no standard pathway into careers in this ecosystem, and there are many self-taught techies who play important roles across government, nonprofit, and movement tech work.** A few practitioners described a mismatch between job requirements for Computer Science degrees and the skills that are really needed. To read more about practitioner pathways, see the Pathways/Education/Career section of the full report.
- **Many different roles are necessary for the successful integration of technology in social change work.** Successful technology use in government, nonprofits, community-based organizations, and social justice movements does not exclusively, or even primarily, depend on software developers. Designers, project leads, community managers, researchers, communicators, and co-design facilitators are examples of other key tech roles that are important to success. Most crucially, practitioners emphasized that tech projects ought to include and/or be led by people with lived experiences that the projects aim to address.
- **Supportive individuals [62%]; conferences [40%]; and fellowships, internships, and mentors [18%] are all key onramps to this work.** The most frequent form of support mentioned by interviewees was supportive individuals (62%), followed by conferences (40%). However, participants also said that conferences are expensive, and that most have a long way to go in order to become inclusive, accessible, and affordable spaces that are welcoming to all.

- **A small but growing number of formal educational programs are available to train people for careers focused on building, using, or engaging with technology for social justice and/or the public interest.** For example, we gathered this spreadsheet of educational resources: <http://bit.ly/t4sj-ed-programs>. Participants noted that informal and community-based education is also important. Additionally, 10% of participants mentioned that tech bootcamps, hacker/makerspaces, and tech meetups are *potentially* valuable spaces. However, most educational spaces and programs, whether formal or informal, do not yet teach an ethics- or values-driven approach to tech, and tend to replicate the sexist, racist, solutionist culture of the mainstream technology sector.
- **50% of participants mentioned structural, institutional, and interpersonal barriers in this ecosystem.** Participants described racism (33%), sexism (33%), transphobia (10%), ageism against older practitioners in the tech industry and against younger people in civil service (9%), classism (9%), and homophobia (8%). Discrimination based on race, class, gender identity, sexual orientation, disability, and their intersections lead to practitioners feeling unsafe, and make it difficult for some to continue working within this ecosystem. Other barriers include difficulty finding community (29%), a lack of tech integration with core organizational work (22%), difficulty accessing educational programs (14%), and high participation costs.
- **Many women experience sexism in this work, just as in the broader tech sector.** Ten percent of study participants mentioned transphobia as a barrier. A few described racism, classism, and/or other forms of discrimination.


For more about these key findings, see the Practitioner Experiences section of the full report.

IV. Visions & Values



“ *Respect for the work that’s been done by other people.*

Because people are in this environment, the intersection of technology and social justice, they sometimes think that they still have more expertise than community organizations that have been doing this for a very long time. So I think that there’s a respect for the knowledge that’s already there, and accountability for the actions that we take. ”

—JAYLEN, TECH CONSULTANT FOR NONPROFITS

IV. VISIONS & VALUES

Our fourth research goal is to **capture practitioner visions** of what is needed to transform and build the field(s) in ways that are inclusive and aligned with their values (social justice, social good, public interest, etc., as articulated by practitioners), as well as how to mitigate threats.

We asked practitioners about the values and principles that are most vital to their work, about what they see as the biggest threats to their values, and about changes needed to realize their vision and values. We also asked about threats to the field, community, and practitioners that need to be addressed or are currently being tackled. We found:

- **Many practitioners are guided by values and principles of justice and equity.** They seek to establish equitable and inclusive relationships, spaces, and technologies, as well as broader social transformation.
- **It is fundamental to center community expertise and needs in tech development and implementation.** The capacity to empathize with and understand others' experiences and needs leads to more meaningful relationships and better uses of technology. Community leadership and accountability are key.
- **Solutionism [belief in “silver bullets”] is a real problem, as is the “savior” attitude or approach many technologists take when working with communities.** Technology sometimes harms users and communities, rather than helping them flourish. Many practitioners described examples of how tech work that is supposedly “for good” replicates the same inequities they hope to dismantle.
- **It is hard, but necessary, to “walk the talk” in our own spaces.** Truly innovative spaces are collaborative, inclusive, and diverse, and creating such spaces takes a lot of work. Power inequality within organizations, as well as competition for scarce resources, are problems for many practitioners.
- **Free/Libre and Open Source Software** is seen by many practitioners as crucial to growing and sustaining the ecosystem, because its values are consistent with their goals of equity and social justice, and because in practice it enables resource sharing around technology development, rather than competition.

Practitioners identified the following six key threats to the communities they work with:

1

state violence and surveillance

4

unequal access to digital technology

2

politically-motivated targeted digital attacks

5

unaccountable corporate infrastructure

3

marginalization based on race, class, gender identity, and sexual orientation

6

limited resources

- **Practitioners identified the following six key threats to the communities they work with: state violence and surveillance; politically-motivated targeted digital attacks; marginalization based on race, class, gender identity, and sexual orientation; unequal access to digital technology; unaccountable corporate infrastructure; and limited resources.** Additionally, practitioners pointed out that these threats, for the most part, are not new: they are long-standing systemic issues, amplified by new tools and platforms. For example, in the case of surveillance, practitioners noted that well-meaning white technologists have secured most of the available resources with narratives about “new” threats, even though Black, Indigenous, Muslim, Latinx, and Queer/Trans communities have always faced state surveillance in the United States.

V. Stories of Success & Failure



“*The struggle is not ‘access to encryption tools.’ It is organizing day labor communities in order to protect against ICE raids, and things like that. We’re confusing means and ends.*”

[...] I think that’s the central problem that the technologists continually go through, is they pretend like technology is the thing that matters, when it’s actually people’s fight that matters and the outcome that matters.”

— GERTRUDA, DIGITAL SECURITY RESEARCHER

V. STORIES OF SUCCESS & FAILURE

Our fifth research goal is to **document stories of success and failure**; distinguish models and approaches of carrying out technology for social justice work on the ground; and identify what works, what doesn't, and why.

We found: **There are a number of models that work well, according to practitioners.**

- **Community-led design is the most successful model**, according to participants from all sectors (government, for-profit, nonprofit, and social movement). It is crucial to involve people in the design of technology that is supposed to benefit them, and to do so at all stages of the design process (not just at a moment in the beginning).
- **Cross-sector partnerships and relationships** help catalyze project success.
- **Public campaigns can pressure large institutions to make positive changes.**
- **Certain crisis response tasks can be crowdsourced** using new digital coordination tools.
- **Information and communication technology (ICT) infrastructure projects, such as fiber rollout or municipal or community wireless, can be excellent opportunities** to create citywide coalitions, connect diverse actors, and build community power.
- **Technology can be used to expand access to legal services.** Organizational clarity about politics and ethics is an important way to attract mission-aligned work.
- **Resilient solutions work better than “cool new tech.”** Many practitioners said that although it is important to maintain, upgrade, and support proven tech solutions, most resources and attention go to new tools.

We also asked participants to describe **models that don't work**. They said:

- **Models that lack community accountability usually fail.** Engagement with communities on the ground is essential. “Silver bullet” approaches not only

tend to fail, but can harm communities. It is important to center community needs over tools. (For examples, see the *Stories of Success and Failure* section of the full report).

- **“Parachuting” rarely works**, although it is often well funded.
- **Funders often support projects that sound exciting or “innovative,”** presumably based on personal relationships or a “cool” new technology, but these fail if they do not emerge from a real community need.

Finally, we asked for **concrete stories of success**, and we asked practitioners about **how they evaluate their work**. There was no single evaluation rubric; instead, success is contextual and based on organizational goals. Participants gave a very wide range of concrete success examples. These included stories about how people and organizations were able to:

- Pass surveillance oversight ordinances;
- Create a trans-inclusive workplace;
- Convince city departments to open their data;
- Make data meaningful for individuals in the community;
- Crowdfund aerial damage assessment to reduce wait times for FEMA aid;
- Demonstrate eviction impacts to state policymakers;
- Use disaster recovery funds to catalyze new technologies and innovative small businesses;
- Link federal ICT infrastructure grants to community organizing;
- Create a PoC and women-led makerspace;
- Convince multinational firms to fix security vulnerabilities through public exposure;
- Build one-on-one relationships with tech company legal teams, which led to a pro-privacy brief from a multinational telco;
- Build a community-controlled mesh network; and
- Achieve widespread adoption of end-to-end encrypted messaging.

For more about these key findings, see the Stories of Success and Failure section of the full report.

These are only a few among many stories of success that practitioners shared with us. We hope that this report contributes to many more such stories in the future, and we urge widespread adoption of our recommendations.



We gathered hundreds of recommendations from a wide range of practitioners.

We synthesized these into five key recommendations that we feel apply to all actors across the ecosystem. Targeted recommendations for specific audiences (Tech Practitioner Orgs, Other Orgs, Individual Practitioners, Funders, Educators, and Government) are available in tables at the end of each main recommendation in the *Recommendations* section of the full report.

Key Recommendations & VI. Conclusions



1. Nothing About Us Without Us

Adopt Co-Design Methods and Concrete Community Accountability Mechanisms.

Tech project design must involve people from the communities the project is meant to serve, early on and throughout the design process. We recommend that practitioners from all sectors:

i. Adopt co-design methods.

Most crucially, tech projects should be grounded in real-world community needs, and be led by or include organizations with deep domain knowledge. These methods have a growing practitioner base, but could be better documented.

ii. Develop and adhere to specific, concrete mechanisms for community accountability. For example, funders and municipalities might prefer or require tech projects to present a concrete community accountability plan across all stages of design, testing, and implementation.

iii. Invest in education [both formal and informal] that teaches co-design methods

to more practitioners. Support existing efforts in this space, create new ones, and push existing educational programs and institutions to adopt co-design perspective and practices.

iv. Create tech clinics modeled on legal clinics. Public interest law and legal services work are client-oriented, and lawyers doing this work are constantly interacting with and learning from people who need to navigate larger systems. Tech can learn from this model.

v. Do real usability testing, and create community research and design groups. Usability testing is essential to validate assumptions and create usable UX and UI. For broader oversight, set up Community Design Boards for technology design projects, similar to Community Review Boards for research projects.

vi. Create fellowships to spread co-design methods across multiple fields, not only in tech, but in other areas as well, such as legal services.

vii. Avoid “parachuting” technologists into communities.

Instead, prioritize resourcing people from the community to build their tech skills. This doesn’t mean “no outsiders can help a community,” but projects with outside support work best when they help develop community capacity to take over, maintain, and grow the project in the long run.

viii. Stop reinventing the wheel.

Allocate increased resources for capacity building, maintenance, and improved usability of existing proven tech, not just pilots of new tools.

For more detailed and audience-specific recommendations about co-design, see the Conclusions & Recommendations section of the full report.

2. From Silver Bullets to Useful Tools

Change the Narrative, Lead with Values, and Recognize Multiple Frames and Terms Across the Ecosystem.

We found that there is no singular field that contains everyone who is working with technology for social justice, the public interest, and/or the common good. Instead, there is a complex ecosystem. Terminology and framing matter, as does the narrative about what this work is about. Language choices are political and typically will attract some people but alienate others. Recommendations in this area include:

i. Be clear about values and vision. Regardless of how you or your organization think about the role of technology in social change, it is important to be explicit about your values and vision. For example, for many practitioners we interviewed, social justice is the core value, and technologies are tools to support movements that advance towards social justice. For others, such as many of those working in the public sector, accessibility and efficiency are core values, and tech is a tool to make government services easier to use.

ii. Shine a light on the amazing diversity of people who already work in this ecosystem. It is important to lift up diverse practitioners in the public conversation about this work.

iii. Challenge the narrative that tech work lies only in the corporate sector. Emphasize that folks can make a life out of tech work that will support them, their communities, and their values.

iv. Challenge the narrative that the “most exciting” tech work is only in for-profit startups. Produce and circulate a new narrative about the very wide range of roles, problems, challenges, and opportunities to do tech work in public, nonprofit, and movement organizations.

v. When circulating jobs, grant opportunities, procurement bids, and other resource

opportunities, consider that any frame you choose will make some communities feel more comfortable than others. For example, many women and PoC feel pushed out of “technologist” frames, even if they have tech skills.

vi. Acknowledge that technology often reproduces longstanding problems. For example, surveillance is not a “new” threat for Black people in America. Listen to, support, resource, and center practitioners from communities that have been dealing with issues for a long time, even if there is a new technological manifestation of the problem.

For more detailed and audience-specific recommendations about narrative, values, frames, and terms, see the From Silver Bullets to Useful Tools section of the full report.



3.

#RealDiversityNumbers

Adopt proven strategies for diversity and inclusion.

Racism, sexism, classism, ableism, transphobia, and other forms of intersectional oppression permeate the broader tech sector, and the ecosystem we looked at is not immune. All actors should adopt evidence-based best practices to advance diversity and inclusion, such as:

i. Gather and share demographic data about grantees, employees, volunteers, leadership, and boards.

ii. Create and publicly disclose timebound diversity targets, and create specific plans and deadlines to diversify leadership.

iii. Adopt tried and true techniques for inclusive workplaces, such as codes of conduct, community agreements, diverse project teams, and anti-oppression trainings.

iv. Invest in inclusive hiring, mentorship, retention, and advancement, implement wage transparency, and create paid fellowships and internships for people who are Queer, Trans*, Women, Black, Indigenous, and/or People of Color.

v. Transform conferences, convenings, meetups, and other gatherings to be far more diverse, inclusive, accessible, and affordable. Adopt best practices for inclusive events, such as the DiscoTech model. Do the same at key sites such as libraries, universities, community colleges, hacklabs, and makerspaces.

For more detailed and audience-specific recommendations about diversity and inclusion, see the #RealDiversityNumbers section of the full report.

4.

Developers, Developers, Developers?

Recognize Different Roles and Expertise in Tech Work, and Support Alternative Pathways to Participation



Tech work is not performed only, or even primarily, by software developers. Across the ecosystem, all actors need to acknowledge the different roles that are necessary to effectively use technology for social justice, the common good, and/or the public interest, in order to build a more inclusive ecosystem that offers opportunities to those who might otherwise be excluded by a narrow definition. Additionally, since many people in the space are “self-taught techies,” organizers turned sysadmins, political campaigners turned web designers, and so on, we must create supports for people who enter tech via alternative paths, such as mentorship programs and fellowship cohorts.

We recommend:

i. When hiring tech teams, create positions for roles such as graphic designer, product manager, community manager, co-design facilitator, researcher, communicator, or popular educator, in addition to developer, regardless of sector (government, nonprofit, for-profit, cooperative).

ii. Establish support for mentorship. Supportive individual relationships (mentorships, in workplace and educational spaces) were mentioned by practitioners more frequently than any other support mechanism as critical to their career path. Create a mentorship matching program, especially to connect mentors that share aspects of lived experience with mentees. Increase support, recognition, awards, dedicated community networks, and other mechanisms to improve mentorship across the ecosystem.

iii. Create paid fellowships and internships that support people from existing organizations, and from marginalized communities, rather than just the one-year parachute model. Create paid opportunities for students of color in other fields, such as law, public administration, and public health, to learn about how tech design processes work.

iv. Create a program for diverse practitioners to visit schools and universities and talk about their career path and work.

v. Demonstrate pathways into tech for social justice, the common good, and/or the public interest. Make these careers visible in mass media, social media, and popular culture.

vi. Focus on digital equity and popular education to expand the pipeline of people who see themselves as part of the ecosystem. There is a crucial role for people who are able to work as educators in frontline communities that are most affected by the application of digital technologies.

For more detailed and audience-specific recommendations about diverse roles and pathways, see the Developers, Developers, Developers? section of the full report.



5. Coops, Collectives, and Networks, Oh My!

Support Alternative Models Beyond Startups, Government Offices, and Incorporated Nonprofits.

Interesting tech work is done by groups that do not fall into the standard models of for-profit startups, government offices or agencies, or nonprofits. Tech cooperatives and collectives provide key tech services and infrastructure to thousands of movement groups and nonprofits. Informal networks can rapidly coalesce during moments of crisis and provide improved information flow, identify priority needs, and organize large numbers of volunteers around tech work with very little resources. Membership organizations also provide tech infrastructure in ways that are accountable to the needs of social movements. All of these are crucial but less visible forms of organizing tech work for social justice; they should be recognized and better supported.

i. Explore how to help non-501(c)3 organizations, such as B Corporations, worker cooperatives, member organizations, and ad-hoc networks support themselves and provide living-wage jobs for their employees while also doing tech work for social justice.

ii. Provide startup and conversion funds for tech coops, both to help with new tech coop creation and to support coop conversion of existing companies.

iii. Provide tech coop development support including incorporation templates, legal incorporation support, operating agreements, and other resources that will help more tech company founders consider coops. These should be standard within tech incubator programs, in university offices that are dedicated to helping create startup spin-off companies, and in municipal initiatives (such as economic development offices) to support new business creation.

iv. Provide rapid turnaround support for ad-hoc networks. Often, especially in crisis moments, ad-hoc and informal networks mobilize very quickly to provide tech support. In many cases, they are more effective than traditional

organizations. Develop mechanisms to support such networks.

v. Leverage ICT Infrastructure projects to grow the ecosystem.

These projects can draw together city governments, community-based organizations, policy folks, and technologists. Successful models from Detroit (DCTP), Philadelphia (MMP), and New York City (Red Hook, Rise : NYC, public housing broadband, etc.) should be supported and widely replicated.

vi. Use government procurement to grow the ecosystem.

This requires focused initiatives that can help smaller organizations and companies, women and PoC-owned firms, coops, and others navigate the procurement process.

For more detailed and audience-specific recommendations about supporting alternative organizational forms, see the Coops, Collectives, and Networks, Oh My! section of the full report.

SUMMARY OF RESEARCH OUTPUTS

In addition to this written report, our research team produced the following outputs:

Data Gallery

Three Data Galleries, or printable slide decks of key quotes, findings, and data visualizations, for use at face-to-face workshops and project convenings, as well as for online circulation. The final data gallery is here: <https://t4sj.co/uploads/resources/More-ThanCode-Data-Gallery.pdf>.

Practitioner Profiles

13 practitioner profiles, in a journalistic style that describes each person's work, their career path, and challenges and opportunities they faced along the way: <http://t4sj.co/blog.html>.

Key Interview Takeaways

Key takeaways from all interviews: <https://t4sj.co/uploads/resources/T4SJ-Key-Interview-Takeaways.pdf>.

Data Visualizations

A gallery of interactive data visualizations, IRS form 990 data, job data, and more: <https://public.tableau.com/profile/t4sj#!/>.

Powerful Quotes

An interactive tool of powerful, paragraph-long quotes from interviewees, categorized by our top-level research goals: <https://morethancode.cc/quotes/>.

Organizational Database

Information about 732 organizations and projects, available both as a spreadsheet (<http://bit.ly/t4sj-orglist>) and via a searchable web interface: <https://morethancode.cc/orglist/>.

Nonprofit Database

Data about 39,000 nonprofit organizations relevant to this ecosystem, according to their tax forms (IRS form 990): <https://public.tableau.com/profile/t4sj#!/vizhome/T4SJIRS990/SummaryTableCountsofOrganizationsbyTypeperCategory>.

Educational Programs Spreadsheet

A publicly editable spreadsheet of educational programs, fellowships, bootcamps, meetups, and other relevant educational resources: <http://bit.ly/t4sj-ed-programs>.

Jobs Database

A database of relevant jobs to help us understand how employers think about this work: <http://jobs.t4sj.co>.

Terms List

A spreadsheet of all terms mentioned by practitioners to describe the work they do. Includes tabs for the full list, a count of participant identification with terms, top-level categorization codes, and counts of organizations that use terms in IRS form 990: <http://bit.ly/t4sj-terms-shared>.

Research Instruments

Throughout the project, we made all research instruments publicly available, including our final semi-structured interview guide: <https://t4sj.co/uploads/resources/T4SJ-interview-guide-II.pdf> and focus group guide: <https://t4sj.co/uploads/resources/T4SJ-Focus-Group-Guide.pdf>.

More detailed information, and additional outputs, can be found in the Appendices of the report.

Full Report



INTRODUCTION

Digital technology provides extremely powerful tools for social transformation. Government agencies use digital tools to make services more accessible and to increase transparency. Journalists and media organizations use them to better meet society’s critical information needs.¹ Nonprofit and community-based organizations use digital technologies to advance their missions and better serve their communities. Social movements use them to help gather and mobilize supporters, raise funds, tell their own stories, hold powerful actors accountable for their actions, and change society.²

However, digital technologies are also used to harm people. Recently, there is greatly increased attention to the ways that technology design, development, and deployment often reproduce existing forms of inequality.³ There is a growing conversation about persistent gender and racial disparity in Silicon Valley.⁴ The use of “Big Data” across many areas of life has civil rights implications;⁵ for example, investigative reporting by ProPublica exposed algorithmic bias in predictive sentencing software, and highlighted racial inequality in the distribution of technological harms and benefits.⁶ Department of Homeland Security requests for software companies to help develop “good immigrant/bad immigrant” sorting software is feeding a debate about the ethical responsibilities of technology developers.⁷ Social media has become a terrain riddled with trolls, botnets, clickbait, and disinformation campaigns; some operate with political objectives, others for profit, and some just for the fun of it (or all of the above).

Conversations about the potential benefits and harms of technology are important. Too often, though, they do not include the voices of some of the most important actors: technology practitioners who work to advance social justice, the common good, and/or the public interest. Across the United States, thousands of software developers, designers, and project managers, as well as policy advocates, community organizers, city officials, researchers, and people in many other roles, work on technology projects. Every day, practitioners in government agencies, nonprofit organizations, colleges and universities, libraries, technology cooperatives, volunteer networks, and other kinds of organizations work to develop, deploy, and maintain digital technology in ways that will directly benefit their communities

#MoreThanCode aims to make the voices of these diverse practitioners heard. Our goals are to **I. explore the current ecosystem; II. expand understanding of practitioner demographics; III. develop and share knowledge of practitioner experiences; IV. capture practitioner visions and values; and V. document stories of success and failure.** We focus primarily on practitioners who work in the United States.

¹ Knight Commission, 2009.

² Tufekci, 2017.

³ O’Neil, 2017; Eubanks, 2018.

⁴ Starr, 2017.

⁵ Munoz and Patil, 2016.

⁶ Lepri, et al, 2017.

⁷ Joseph, 2017.

#MoreThanCode was produced through a participatory action research (PAR) process with the Technology for Social Justice Project (<https://morethancode.cc>). Our research questions, methods, and analysis of findings were all guided by a diverse group of practitioners, who we refer to as research partners. The project was coordinated by Research Action Design ([RAD.cat](https://rad.cat)) and the Open Technology Institute at New America (newamerica.org/oti) together with partners Upturn, Media Mobilizing Project, Coworker.org, Hack the Hood, May First/People Link, Palante Tech Cooperative, Vulpine Blue, and The Engine Room. NetGain, the Ford Foundation, Mozilla, Code For America, and OTI funded and advised the project.

We hope that our findings and recommendations will be useful to all those who want to use technology to make a more just and equitable world.

METHODS

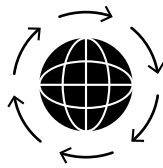
#MoreThanCode is a Participatory Action Research (PAR) project. All research partner organizations worked together to develop the research questions, study design, data collection and analysis, conclusions, and recommendations. We interviewed 109 people and conducted 11 focus groups with 79 focus group participants. A total of 188 individuals participated in the study. We sought diverse participants in terms of gender identity, sexual orientation, race/ethnicity, educational background, sector (government, nonprofit, tech coop), urban/rural location, and other factors. Our study focused primarily on practitioners in the United States. Detailed study participant demographics can be found in the main body of the report. We also collected and analyzed secondary data, including: a database of 732 organizations and projects; IRS form 990 data for over 40,000 relevant nonprofits; over 14,500 job listings; and over 350 educational programs, networks, and associations. The Appendices include detailed methodological information, links to relevant secondary datasets, and links to interactive tools to further explore study data and findings.

Limitations

Since there is no agreed upon definition of the field boundary, and no widely-accepted universe of participants in the field, it was not possible to conduct a true random selection of individuals or organizations. Therefore, as with any non-random sample, our findings should not be assumed to be representative of the entire field. We especially urge that the reader exercise caution when interpreting the demographics of our interviewees and focus group participants: we specifically sought to include women, People of Color, LGBTQI folks, and others who are not well represented across the broader technology sector. Therefore, the demographics of our study participants do not necessarily represent the demographics of any of the subfields we discuss in the report.

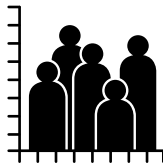
GOALS

The following goals, developed by all partners at our first convening, guided our research process:



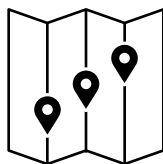
I. ECOSYSTEM

Define the field(s) and inventory the current ecosystem.



II. DEMOGRAPHICS

Expand understanding of who participates in the field(s).



III. PRACTITIONER EXPERIENCES

Establish a baseline understanding of practitioner experiences, how individuals came to this work (career path), barriers and opportunities practitioners (and their communities) face, and the support practitioners may need now.



IV. VISIONS & VALUES

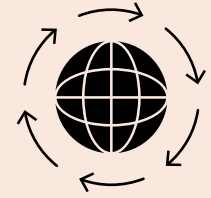
Capture practitioner visions of what is needed to transform and build the field(s) in ways that are inclusive and aligned with their values (social justice, social good, public interest, etc., as articulated by practitioners themselves), as well as how to mitigate threats.



V. STORIES OF SUCCESS AND FAILURE


Document and distinguish models and approaches to carrying out technology for social justice (& etc.) work and projects on the ground. Identify what works, what doesn't, and why.

I. Ecosystem



“ I think there’s a lot of small grassroots and community-based organizations that are doing really, really great work and hustling really, really hard, and because they’re so small and because they work specifically with People of Color, they definitely do not get the recognition that they deserve, and they don’t have access to opportunities like other bigger NGOs.

— HIBIKI, DIGITAL SECURITY TRAINER



“ We try and, through the course of relationships with organizations, not just help them do a technology project but at the end feel way more confident, way more powerful when they’re talking to technologists, when they’re talking to data people. They’re bringing the political understanding, the contextual understanding, the fantastic ideas, they have something to contribute to those conversations when often times, historically, they felt like an idiot in those conversations. Trying to give people the language, the understanding, the feelings and confidence, that come along with having one successful project under your belt. **”**

**— BECCA, EXECUTIVE DIRECTOR AT
AN INTERNATIONAL DATA TECH NONPROFIT**

I. ECOSYSTEM

Our first research goal is to **define the field(s) and inventory the current ecosystem**. A summary of our key Ecosystem findings is available in the Executive Summary.

DEFINITIONS & FRAMING

Practitioners use many different terms and frames to talk about this ecosystem.

We found that people use many different terms and frames to talk about the work they do. In our interview and focus group process, we provided participants with a list of terms used in the various overlapping fields, and asked them to circle terms they identified with, cross out terms they felt did not belong, and suggest missing terms that they use to frame their own work. We then facilitated discussions about why practitioners choose to identify with some terms, and why they do not identify with others. Ninety-six study participants completed this terms worksheet, and provided us with 252 different terms that they use to describe their work. We then coded all 252 terms into the following top-level categories:

Table: Terms & Top-Level Categories

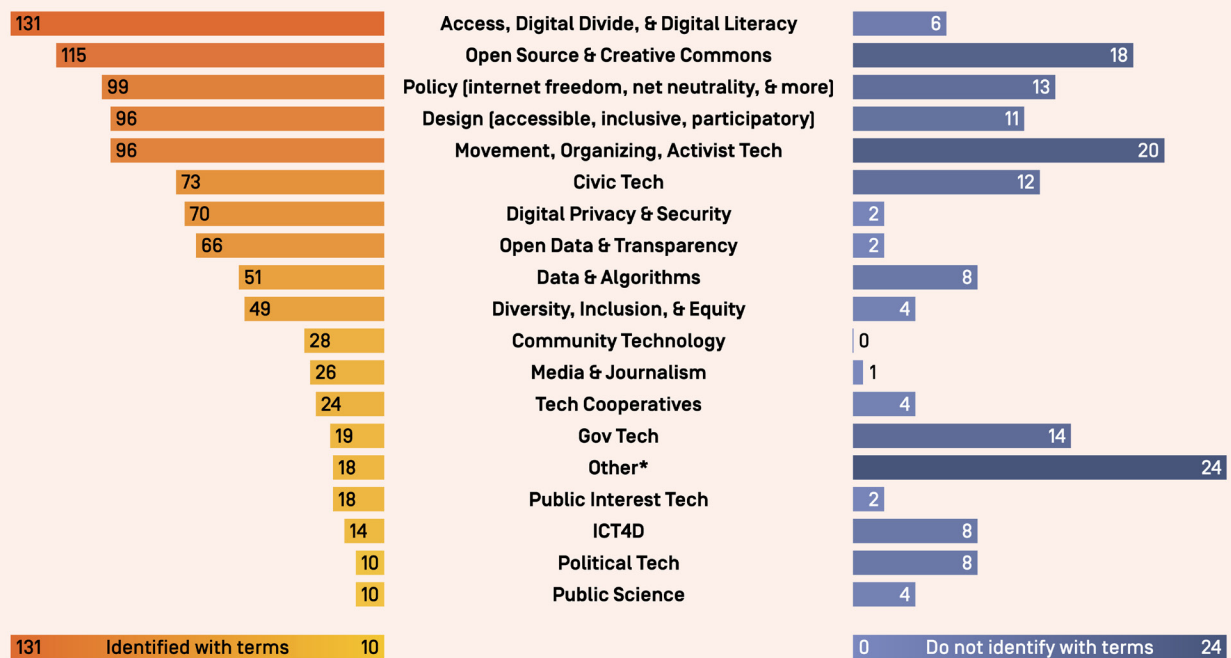
Category	Terms
Access, Digital Divide, & Digital Literacy	access to tech, access to technology, accessible tech, accessible technology, data literacy, digital divide, digital equity, digital justice, digital literacy, digital redlining, tech access, technology access, technology accessibility, universal access, universal design
Civic Tech	civic crowdsourcing, civic innovation, civic tech, civic tech for good, civic technology, civic technology for good, tech for social good, technology for social good
Community Technology	community tech, community technology
Crisis & Disaster Response	digital crisis response, digital emergency response, digital humanitarian, digital response

Category	Terms
Data & Algorithmic Bias	algorithmic accountability, data for good, data justice, data science, data science for good, data vis, data visualization, data-driven justice, public data, algorithmic transparency, responsible data
Design (accessible, inclusive, participatory}	accessible design, centering the needs of communities who aren't traditionally creators of technology, citizen design, citizen experience design, civic design, civic HCI, civic map, civic UX, codesign, collaborative design, community centered design, community design, community driven design, community led design, community map, community-centered design, community-led design, critical design, design for good, design justice, design thinking, HCD, HCI for good, human centered design, human computer interaction for good, inclusive design, participatory design, public design, public HCI, public interest design, public map, public UX, social impact design, social justice design, technology that meets human and global needs, User centered design, UX for good, UX for social good
Digital Privacy & Security	anti-surveillance, consentful tech, consentful technology, counter-surveillance, digital security, encryption, HIPAA, holistic security, privacy, privacy tech, privacy technology, surveillance
Diversity, Inclusion, & Equity	abolition, black girls code, black tech, culture setting, data discrimination, diversity in creators of tech, diversity in tech, fair housing, fair lending, feminist technology, gender and queer, girls code, harassment/discrimination in the tech/social justice sector, inclusivity and safespace, latina tech, latino tech, latinx tech, lesbians who tech, racial justice, social justice, tech diversity, tech in plain language, technology diversity, trans tech, trans* tech, women in tech
Govtech	connected cities, connected city, e-government, government insourcing, government technology, government tech, smart cities, smart city
ICT4D	appropriate tech, appropriate technology, ICT4D, information and communication technology for development, information and communication tech for development
Media & Journalism	data driven storytelling, data journalism, data-driven story, data-driven storytelling, digital media and public responsibility, independent media

Category	Terms
Movement, Organizing, & Activist Tech	digital autonomy, digital organizing, digitech organising, grassroots map, hacktivism, hacktivist, liberation tech, media justice, movement tech, movement technology, research justice, revolution tech, revolutionary tech, tech activism, tech and revolution intersection, tech for revolution, technology activism, technology and revolution intersection, technology for revolution, using technology for social justice
Nonprofit Tech	non-profit tech, non-profit technology, nonprofit tech, nonprofit technology, non profit tech, non profit technology, tech, technology
Open Data & Transparency	government transparency, open data, open gov, open government, open research, ownership, public data, sousveillance, transparency, work open, work open lead open
Open Source & Creative Commons	creative commons, F/LOSS, FOSS, free and open source software, free hardware, free software, free/libre and open source software, free/open knowledge, open internet, open net, open source, open source hardware, open source software, open web
Other	concentration of wealth, criminal justice, ecotech, ecotechnology, health IT, human rights, online community building, renewable technology, renewable technology, sharing economy, tech space, technology space
Policy (internet freedom, net neutrality, & more)	digital sovereignty, evidence-based policy, HITECH Act, internet freedom, net freedom, net neutrality, public broadband infrastructure, public tech infrastructure, public technology infrastructure, public wireless spectrum, tech policy, technology policy
Political Tech	political tech, political technology
Public Interest Tech	public interest tech, public interest technology
Public Science	citizen science, public science
Tech Cooperatives	cooperative business models, platform coop, tech coop, tech cooperative, technology coop, technology cooperative

We tallied the individual terms that practitioners circled, and also summarized these findings by top-level categories in the table below. The most frequently circled terms related to the categories of Access, Digital Divide, and Digital Literacy (circled 131 times), followed by Open Source & Creative Commons-related terms (115); for example, nearly half of practitioners identified with “free software” (40 of 96 practitioners circled this term). Policy-related terms (such as “tech policy,” “net neutrality,” or “open internet”) were circled a combined 99 times. Design-related terms (circled 96 times), focused on accessible, inclusive, and participatory design, among other similar terms, were nearly as popular as Policy terms, as were terms focused on Social Movement, Activist, and Community Organizing tech (96). Popular individual terms included “open data” (37); “privacy” or “security” tech (36 and 31); “digital literacy” (35); the “open web” or “open internet” (30); “community technology” (28) and “civic tech” (28), and “tech policy” and “inclusive design” (each 27). About one in five participants (18 out of 96) identified with the term “public interest technology.” The individual terms that people found most problematic were “smart cities” and “sharing economy.”

Terms practitioners identify with / Do not identify with



* Terms labeled as other are Sharing Economy, Ecotechnology, Concentration of Wealth, Health IT, Online Community Building, Renewable Technology, and Technology Space.

Differences between terminology and framing are important and should not be erased.

What is more, many participants felt that differences between terminology and framing are important and should not be erased. Different terms and frames resonate for different actors in this space. It's best to understand the range of terms and frames that people use to do excellent work leveraging technology to advance the public interest, the common good, social justice, government and corporate accountability, and so on.

For example, some see “civic tech” as a field of practice that is predominantly white, male, U.S.-centric, and institutionalist. Stevie, a Tech Fellow at a Foundation, struggled with terms like “*technology for social good*” and “*civic tech.*” For him, these terms put the technology first, rather than the people, and he believes that “*anyone who's doing good work would be more specific than that.*” He finds it hard to identify with “civic tech” because he feels civic tech spaces are very U.S.-centric, very white, very technocratic, and their work is usually not about social justice.

Kimberley, a Founder of a Digital Rights Org, uses an inclusive definition of technology. She and her organization see technology as part of their liberation strategy, but do not consider technology to be their sole tool. They weave many old and new strategies together, and due to that, other “tech” organizations have a hard time understanding orgs like them that are led by women, PoC, and gender nonconforming folks.

Arata, a Technology Capacity Builder, feels that the term “public interest” connotes policy, power, and privilege, and does not connote work with frontline communities. Additionally, they emphasize that most of the technology work being done in nonprofit right now can be described as stopgap, and is being done by “accidental techies.”

Some women and PoC participants do consider themselves technologists. Other people we interviewed do not identify with the term “technologist,” even if they work extensively with technology. A few, mostly women, have specifically been told by men that they are not technologists, even if their work focuses on technology.

For example, Alda, a Community Organizer and Consultant at a National Newspaper, does not consider herself a technologist. She said that this is because she has been around men who are programmers who have made it clear to her that she is not a technologist, even though her whole job involves technology.

Richard, a Broadband Expansion Manager for a Rural City, feels that the term “technologist” is a coastal term. He said that other than coastal folks, everyone else in this field sees themselves as engineers. He suggested we do a spatial analysis to see if there is a correlation between the terms people identify with and their location in the country.

Some participants related that they use the language of social justice and/or community technology, and often find civic tech spaces alienating. One noted that just as there is both “public interest law” and “movement lawyering,” we need both “public interest tech” and “movement tech.” These may overlap, but are not the same thing.

While the literature provided definitions of many of the most widely used terms, this section focuses more on interviewee perceptions of the most contentious terms. This approach prioritizes practitioner knowledge and avoids top-down naming and framing.

Practitioner perceptions of “Civic Tech”

- **Civic tech as distinct from “gov tech:”** While most participants drew a connection between civic tech and government, a few more intimately familiar with the spaces of civic and government technology made the distinction that “gov tech” is technology created within the government, or to be used directly by governments, and “civic tech” is that created outside of the government, often by volunteers.
- **Civic tech as an umbrella term:** Some participants used civic tech to broadly refer to any use of technology for social good, including technology for social justice, technology for governance, technology for liberation, and technology for the public interest. Others, however, gave it a more specific definition, or felt that while the ideal may be for the term to encompass every attempt to use technology for social good, civic tech practices do not usually live up to that ideal, because they often exclude the communities they intend to benefit from problem framing, design, testing, and implementation.
- **Civic tech as a privileged framework:** A number of participants noted that civic tech tends to refer to a field of practice that is predominantly white, male, U.S.-centric, and “mainstream” or “establishment.”

Practitioner perceptions of “Community Technology”

- **Community technology as determined by community needs, and designed by community:** Several participants defined community technology as a way of working with technology that starts with needs sourced from a particular community, and collaboratively designed with that community.
- **Community technology as a way to improve access to technology and information:** Additionally, many participants highlighted a focus of community technology projects on access to the internet, level of comfort with and ability to

use technology, and information for people who have been traditionally excluded from, or attacked with, digital technology.

Practitioner perceptions of “_____ For Good”

- **“For good” is vague but ok:** A few participants (about 20) used or accepted the idea of technology “for good” as a vague but positive umbrella term. However, a similar number of participants were skeptical of the simplistic promises of the phrase.
- **“For good” as too broad to be useful:** Some considered it simply too broad to be meaningful, and felt that it doesn’t clearly define a type of work or focus area.
- **“For good” as actively manipulative:** A few were skeptical of the term because they consider it to be actively manipulative of people’s goodwill, without substance. One noted that because the more specific part of the term comes before “for good” (for example, “data science for good,” “tech for good,” or “UX for good”), these framings put technology and technologists first, and typically do not involve community-based leadership.

Practitioner perceptions of “Public Interest Technology”

- **Public interest technology as government, policy, and law:** While most participants had not heard of the term “public interest technology” or “public interest technologist,” and the ones who had considered it a broad umbrella term, some gave examples of public interest technology in government, tech policy, and public interest law. A few participants who did not identify with the term noted this specific focus of the work.
- **Public interest technology as technology for something other than profit:** Some participants defined “public interest” or “public interest technology” as any work that falls outside the profit motive or the market. Some referred to it as technology work that happens within NGOs or non-profit organizations.
- **Public interest technology as advocacy:** Many participants defined “public interest technology” as the advocacy work done to keep the internet open, innovative, and free, often by policy-focused non-profits.
- **Public interest technology as a top-down, non-diverse framework:** Some participants who did not identify with the “public interest technology” framing, and

some who did, identified a lack of diversity as a significant issue in the nascent community. It was considered to be predominantly white, male, D.C.-focused, and funder-driven.

Practitioners do not always identify as “technologists.”

We also asked practitioners to describe their own work and roles, talk about who they collaborate with, and share who they see as field builders. We spoke to people who identified as community organizers, lawyers, software engineers, project managers, researchers, volunteers, leaders of volunteer organizations, data scientists, digital security trainers, a city manager, and many other roles. When asked to identify their role(s) in the field, half (52%) of participants selected “technologist,” while 40% selected “community organizer” (participants were able to check as many roles as they identified with). For more detail, see the Participant Demographics section.

As one practitioner described, *“I don’t actually think of myself as somebody in particular who works in technology or the tech sector, or refer to myself as a technologist”* (Alun, Technology Advisor for a City Government on the East Coast). They described how they chose not to pursue coding, but instead to contribute their knowledge and skills to the design and democratic governance of technology. Many practitioners shared that they identify with multiple roles; these sometimes include “technologist,” but other identities are also important. A Tech Fellow at a National Think Tank shared that the roles they identify with have shifted over time: *“So if you were to say, are you a technologist, even three months ago, I would say no. Because I am not a coder or a programmer or even a designer, because I am an educator, I am a practitioner. But when we started to kind of define or think about the narrative of public interest technology, we get to really define what technologists are. And so thinking within the greater context of all of this work that we’re doing, we kind of zoom back and said, we’re researchers, we’re designers, we do have some of the coding and programming. But we’re also change agents”* (Zdravka, Tech Fellow at National Think Tank).

Partnerships, informal networks, and volunteerism

Practitioners described a wide range of partners that they collaborate with, including volunteers, state, local, and federal government agencies, humanitarian and disaster response organizations and agencies, businesses, funders, civic tech organizations, community-based organizations (CBOs), social movements, open source software contributors, legal aid organizations, and university students.

Social justice organizations and movement practitioners are particularly explicit

about partnerships. For instance, Tivoli, a Freelancer and UX Research at a Tech Corporation, makes very conscious decisions when it comes to who she works with. While part of an open science project funded by a venture capitalist, she was forced by the funders to do certain things that did not match with the vision of the project, and as a result, left her job. She worked with people who identified as civic technologists, and felt that they often did not want to make anyone uncomfortable, and were apolitical. Due to these experiences, she no longer works with venture capitalists or civic technologists.

Some social justice organizations refrain from working with large internet firms. For instance, Arata's nonprofit was approached by Facebook to collaborate, but Arata and her team refused because of Facebook's nature as a profit-seeking multinational corporation.

Others leverage multistakeholder process with diverse actors from the public and private sectors, academia, and civil society to work around common interests. Katerina, Co-Founder of a Media and Community Organizing Nonprofit, works in collaborations across large national and small grassroots organizations to further enhance their movement and advance towards their goals. For instance, a large national investigative news organization picks local news organizations to collaborate with, rather than other national media houses. They do that when the stories they cover affect a specific community, and they would rather partner with a local media house that is based in or close to that community. Practitioners who reside in rural areas, or are the only technologist in a nonprofit, often use networking events and convenings to find collaborators.

Volunteerism has its limits. Dan, a CEO and Founder of a Civic Tech Organization, felt that the civic tech field has pushed volunteerism to its limit, and as a result, volunteers are getting burnt out. Additionally, he feels that civic tech has hit a ceiling in funding, and that many organizations find it difficult to sustain themselves.

Who controls dominant framings?

"If people are really gonna be there for us, personally, I feel like they should be there for us in the way that we would like to present ourselves, you know? And not always try to direct, or control what we do so much." — Godtfred, Technology Fellow at a Youth Nonprofit

Practitioners, and particularly nonprofit practitioners who are responsible for fundraising for their projects, consistently describe private foundations as frame-setters. While frames for work across this ecosystem vary and may come

from organizers, community members, educators, and/or researchers, most practitioners described feeling pressure to frame their work in a particular way in order to have access to funding streams.

For example, Godtfred, a Tech Fellow at a Youth Nonprofit, noted that in this field, like any field, you have to play the political game to get funding. They felt that the way we frame our work opens and closes doors, and determines funding opportunities. They said that you have to “jump through hoops” to get funding, but felt that “if funders are going to be there for us, they should be there for us without controlling our framing and our analysis.”

Other participants described the need to change their language in different contexts, use certain frames with funders, and re-frame for allies or constituents. Katerina, a Co-Founder of a Media and Community Organizing Nonprofit, argued that “code switching,” or the ability to translate speech styles, terms, and concepts between different contexts with different audiences, is a core competency, and that an over reliance on specialized terminology can be ultimately classist.

In addition to funders, other powerful players that influence how people frame their work include politicians, who set policy agendas, and people who write job, fellowship, and internship postings. One practitioner working in City Government noted that, since efficiency is not the core value of government, they needed to develop a very different narrative about how and why technology can have a positive impact. For them, advancing projects requires the ability to tell a story that aligns with the values of people working inside government agencies. At the same time, they feel that government digital services are judged by the public according to the usability standards of Amazon, Google, and Facebook products (Rob, CTO of a City Government).



UNDERSTANDING THE CURRENT ECOSYSTEM

We used various approaches to gain a sense of the scale of the ecosystem.

In the first stage of research, we developed a database of information about more than 700 organizations and projects, available both as a spreadsheet (<http://bit.ly/t4sj-orglist>) and via a searchable web interface at <https://morethan-code.cc/orglist/>. We initially seeded this with the organizational list from the Civic Tech Field Guide (available at <http://bit.ly/organizecivictech>), then added new organizations that came up in project interviews, focus groups, and workshops. The database is searchable by type of organization and sorted into the top-level categories that emerged from our research process, as well as by variables such as “Majority PoC” and/or “Queer.”

In the second stage of research, we decided to build a more comprehensive database of relevant organizations by using [U.S. IRS Form 990 data](#) provided by the [Nonprofit Open Data Collective](#). We searched through over 450 million records in that database for relevant organizations, based on the 252 different terms that study participants use to describe their work (the terms list can be found here: <http://bit.ly/t4sj-terms>).

The search process described above returned 91,058 unique organizations (foundations and nonprofits) who use one or more of our practitioners’ terms somewhere in their 990 Forms, e.g. in mission statements, program descriptions, or grant descriptions. However, some of the terms provided by practitioners are quite broad and apply to many organizations that may or may not specifically engage in technology work (for example, “criminal justice”). We reclassified these broader terms as “Other.” When we exclude organizations that we classified as “Other,” we are left with 39,000 nonprofit organizations who included one or more of our practitioner-identified search terms in their tax forms.

From there we further analyzed the data by our top-level categories:

Summary Table: Organization Counts by Category

Category	990	990EZ	990PF	Grand Total
Nonprofit Tech	13147	10595	3745	27487
Open Data & Transparency	6017	552	212	6781
Digital Privacy & Security	1437	85	88	1610
Diversity, Inclusion, & Equity	1093	207	296	1596
Access, Digital Divide, & Digital Literacy	305	58	88	451
Open Source & Creative Commons	267	73	94	434
Design [accessible, inclusive, participatory]	213	40	46	299
Policy [internet freedom, net neutrality, & more]	74	5	15	94
Media & Journalism	49	7	16	72
ICT4D	44	6	21	71
Public Science	40	11	13	64
Community Technology	42	2	15	59
Data & Algorithmic Bias	28	5	12	45
Gov Tech	24	4	6	34
Movement, Organizing, Activist Tech	18	3	10	31
Civic Tech	18	2	9	29
Tech Cooperatives	10	5	2	17
Crisis & Disaster Response	1	1	-	2
Public Interest Tech	-	-	1	1
Grand Total	22827	11661	4689	39177

- Organizations with gross receipts normally <\$50,000 must file form 990-N [but may choose to file a complete Form 990 or Form 990-EZ.] In prior years only organizations with gross receipts normally <\$25,000 could file the Form 990-N ("e-postcard").
- Organizations with gross receipts > \$50,000 and <\$200,000 and total assets <\$500,000 must file form 990-EZ or complete Form 990.
- Organizations with gross receipts > \$200,000 or total assets > \$500,000 must file Form 990.

The majority of organizations in this ecosystem appear to work on nonprofit tech. After that, open data and transparency is the second most populated organizational space, followed by organizations working on digital privacy and security, or diversity, inclusion, and equity. We recognize that at this stage there are likely many false positives, and the data requires additional cleaning and analysis. We encourage others to further explore and analyze the data here.

Besides quantitative data about nonprofits in the ecosystem, we would like to highlight two specific kinds of organizations that participants mentioned as important: libraries and community colleges.

Libraries are important sites. Terry (Policy Director of a Public Library) argued that digital equity is one of the primary responsibilities of libraries, and that libraries are the key element of civic infrastructure addressing this challenge, although they may not always do so strategically. Similarly, Vishnu (Founder of a Nonprofit) felt that libraries are critical sites for reaching communities that have been ignored by the infosec and digital security worlds, but who paradoxically live with the highest levels of risk: People of Color, poor people, and formerly incarcerated people.

Community colleges are important. Ileana (CEO, Digital Advocacy Company) argued

that community college, as a low-cost way to gain computer science skills, often with financial aid available from the government, provides a critical piece of the ecosystem.

Funding is unequally distributed among the various subfields in this space, in ways that replicate structural inequality.

Our analysis of form 990 data indicates that the key funders of the ecosystem are the Ford, Knight, Rockefeller, MacArthur, and Hewlett Foundations. Data about how frequently these funders used our ecosystem search terms in their 990 forms are explor-able [here](#). We are in the process of further analyzing 990 data to better understand the distribution of funding between organizations and categories, and we will provide that analysis as it becomes available.

Study participants shared that, in their experience, national nonprofits, organizations led by white cisgender men, and organizations in large coastal cities receive the lion's share of funding. For example, Dishad, an Eco Justice Community Organizer, feels that smaller, grassroots, and more radical organizations are discriminated against by funders, in favor of large, national nonprofits that more closely align with the interests of their corporate boards. Candide, a Co-Founder of a Nonprofit Coding School, feels that, despite a track record of success, as a “non-traditional founder” (i.e. a woman of color) she struggles to get funding as easily as her white male peers in the startup space. Nessa, a Journalist and Founder of a Nonprofit, notes that non-coastal areas are “funding deserts,” where it can be difficult to sustain critical work. Additionally, her organization takes a deliberately local approach and focuses on the unique needs of youth in her county.

Dan, a CEO and Founder of a Civic Tech Organization, feels that civic tech has hit a ceiling in funding, and that many organizations find it difficult to sustain themselves.

Manuel, a Founder of a Civic Tech Organization and a For-Profit advocacy company, notes that philanthropy can have a distorting effect on communities, because it can undercut work that is already operating sustainably. He shared the example of a FOIA automation business that was undercut and killed off by a foundation-backed copy-cat. He also says that the technology field is overwhelmingly white and male dominated, and that organizations need to take proactive steps to prioritize the leadership of women and People of Color, and to use codes of conduct to keep spaces accountable.

Mel, an Executive Director of a Nonprofit, notes that funders often focus on “parachuting” technologists into organizations, or on isolated technology projects for social good, devoid of context, when the real need is capacity building.

Judyta, a Facilitator at an Education Technology Collective, shared that they see a lot of

funding for university-based STEM projects that fit industry needs and profit motives, but not for projects that include critical questioning or feminist critical thinking. They also note the stark difference between the developers, creators, and users of technology, and highlight the undue focus on developers and the disregard for end users.

Erica, a Fundraiser at a Foundation, sees sustainability as a blind spot in this field. When core funding changes, key players evolve, merge, or spin down. She says that funders are not ready to ensure that the work continues to serve the people it was designed to serve. She also feels that we don't think enough about how to ensure that our projects are freely and openly accessible for generations to come, because the space is so rapidly evolving, and it's very hard to think beyond a two- to five-year cycle.

Successful funding strategies

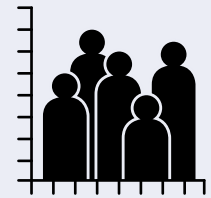
Lulu, a Technology Project Funder at a National Legal Nonprofit Funder, funds technology initiatives within legal aid services across the country, so that attorneys can “**work at the top of their license.**” He wants to automate most of the day-to-day work of legal aid, so that when attorneys sit with their clients, they have all the information they need to help them. However, one of the biggest challenges he faces in doing this work is the lack of integration of user-centered design at the start of projects, and the inability of developers and coders to write code and develop products in plain language that users of all ranges can understand.

Artemis, a Technologist at an International Policy Technology Nonprofit, feels that it is very important to organize and fund “**water cooler**”-type convenings for the people who work across disparate parts of this space.

Friedemann, an Advisor of Tech projects at a Government Office, highlights that the funding strategy of providing unrestricted operating funds, rather than metrics-driven return on investment and tightly restricted funds, while no longer popular among funders, was critical to motivating people to explore, self-actualize, and create innovation.


More stories of successful strategies are available in the *Stories of Success* section.

II. Demographics



“*There’s this expectation of who you must be, and what your background should be like. I don’t have that background. That traditional background. It’s interesting, I’d enter a room and they’d act like basically I’m the one getting coffee. Being a person of color is still an issue in our sector, and it’s something we need to change. Also, not being male is an issue. Who’s getting the funding? Let’s take a look at that.*”

— CHARLEY, EXECUTIVE DIRECTOR AT A TECHNOLOGY NONPROFIT



“To some extent, I think sexism is probably the biggest one, then racism, then homophobia. I can’t honestly really separate them into these different categories because, for me, it’s the intersection of a lot of these. And, just being able to navigate the tech space as a woman of color who is also an immigrant [...] there’s not a lot of other people that look like me or that are like me.”

— HIBIKI, FREELANCE DIGITAL SECURITY TRAINER

II. DEMOGRAPHICS

Our second research goal is to **expand understanding of practitioner demographics**. A summary of our key Demographics findings is available in the Executive Summary.

DEMOGRAPHICS OF THE FIELD

We conducted this research in the midst of ongoing public debate about racial and gender discrimination in the broader tech sector. A recent Pew study found that 80% of women and 66% of men say that gender discrimination is a problem in the tech sector, while two-thirds of Black people and half of Latinxs feel discrimination is a “major” problem in the tech industry.⁸ In October of 2017, the Center for Investigative Reporting sought EEO-1 diversity reports from over 200 tech companies, including the 150 top publicly traded companies. They found that just 23 of these companies released form EEO-1, and that gender and racial/ethnic diversity in employment and management remain quite far from parity with the general population.⁹ For example, there were no Black, Latina, or multiracial female executives at eight of the 23 companies, including Adobe, Google, and Lyft, and top tech firms including Google and Apple had less than 25% women employees. Against this backdrop, we attempted to understand the demographics of the overlapping fields we explore in this report.

Racism, sexism, classism, ableism, transphobia, and other forms of oppression permeate the tech sector, and the non-profit, community, and public tech sectors we looked at are not immune. The broader tech sector has slowly begun to pay attention to these problems, but diversity and inclusion initiatives in the larger tech industry are still not enough.¹⁰ Our study participants and project partners have no easy answers for what to do about these massive challenges. Some feel it is most important to create our own ecosystems and firms for community autonomy; others emphasize the need to modify organizational culture using best practices in training, hiring, and mentorship. A few suggested a dedicated project to focus on pushing all actors to release demographic data, and to publicly set equity targets and timelines.¹¹ Unfortunately, despite recent attention to race and gender disparity in the broader tech sector, the fields we analyzed lack demographic data. Key actors in the space, including the biggest players (such as Code for America and the Knight Foundation), have not historically tracked or shared demographic data about employees, volunteers, leadership, or grantees. In a complex world, many strategies for diversity, inclusion, and equity are necessary. All participants agreed in at least one area: we know that it will be crucial to gather and share demographic data about field participants, and to publicly set equity goals with timelines.

⁸ Pew, 2017

⁹ Evans and Rangarajan, 2017

¹⁰ See the recent report “Breaking the Mold: Racial Diversity in Tech.” <http://breakingthemold.openmic.org>

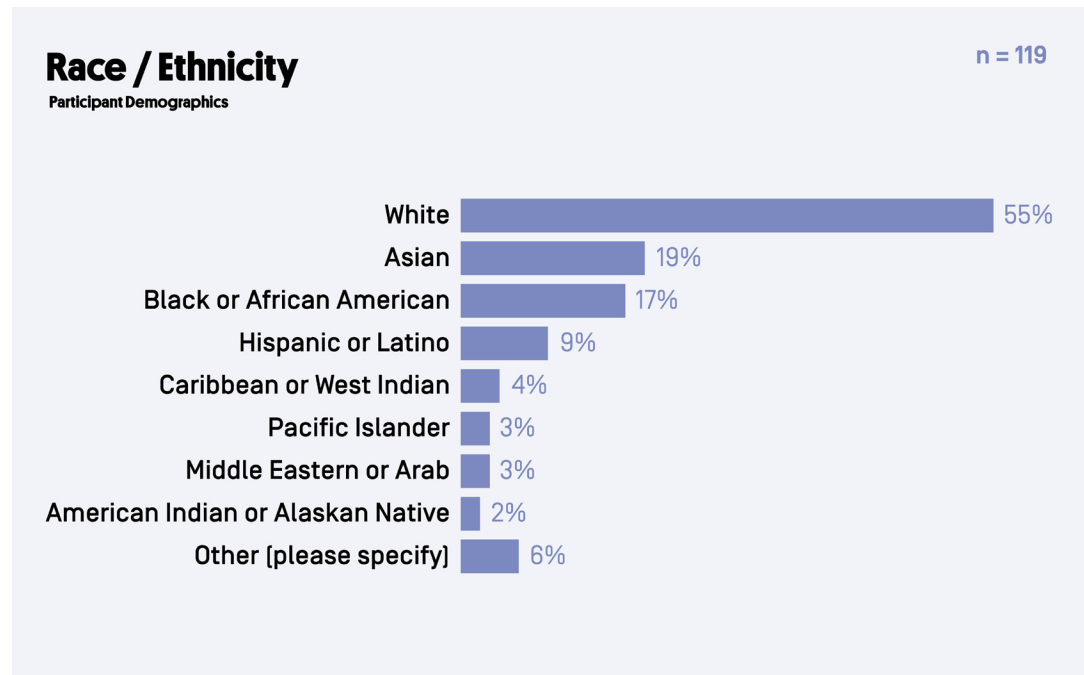
¹¹ Project Include is meant to play this role in the broader tech sector, but so far has not looked specifically at the types of organizations we are focused on in this report. See <http://projectinclude.org>

DEMOGRAPHICS OF STUDY PARTICIPANTS

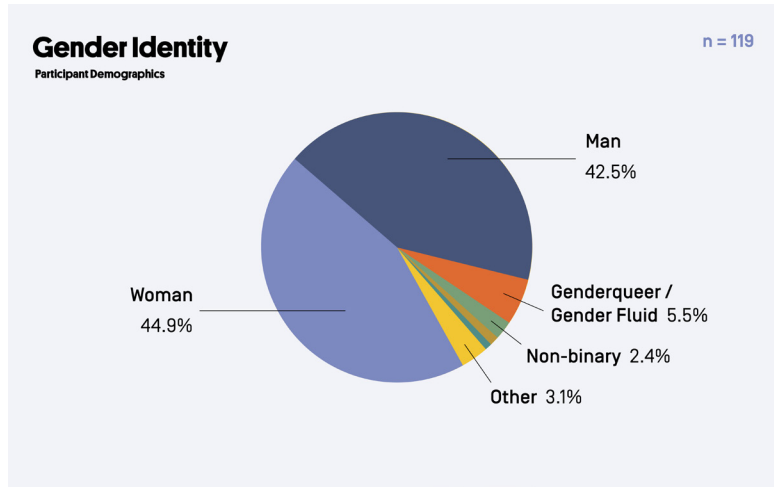
Although the overall ecosystem lacks demographic data, we were able to gather demographic data about our study participants. This section describes those who participated in interviews and/or focus groups for this project, the majority of whom also completed a demographic questionnaire. A total of **188 individuals participated in our research**, including **79 focus group participants and 109 interviewees**. A total of **121 individuals (64% of participants)** completed the demographic questionnaire. The participant demographics presented below highlight the backgrounds, skills, and sectors of individuals working across the ecosystem who participated in this study.

Participant Race/Ethnicity & Gender Identity

The majority (55%) of the 121 study participants who completed the demographic questionnaire identified as White.

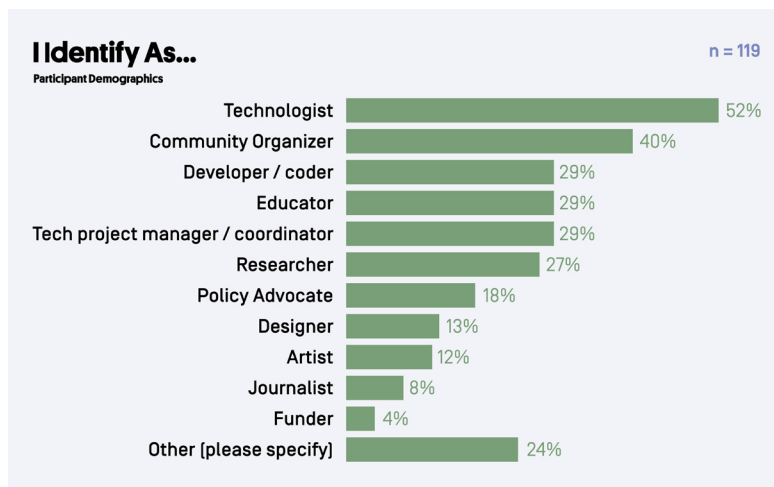


There were slightly more women (45%) than men (42.5%). 11% identified as either Genderqueer/Gender fluid, Non-binary, Trans Woman, Trans Man, or Other. Respondents who chose Other (3%) identified as Queer or Genderqueer only, Butch, or stated they never identified with any label.



Participant Professional Identity

With respect to professional identity, most participants selected Technologist (52%) and/or Community Organizer (40%) to identify their roles in the field. Developer/ Coder, Educator, Tech Project Manager/Coordinator, and Researcher were also among some of the top professional roles selected by participants; about a third of participants identified with each of these terms.

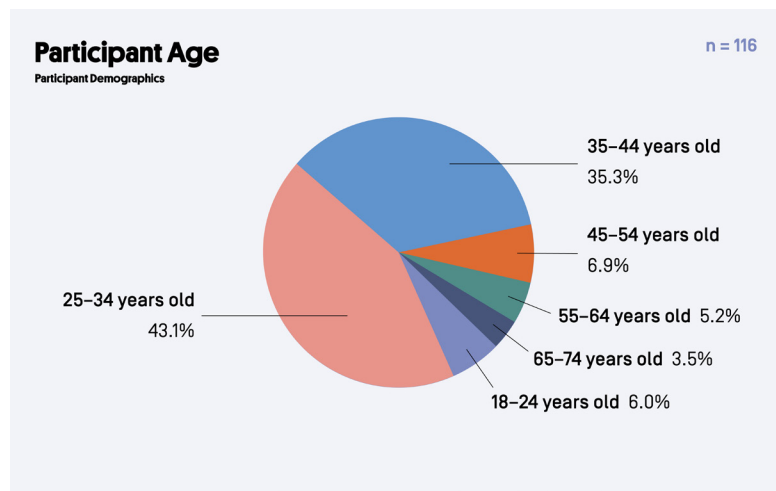


Those who chose Other (24%) identified in a number of different ways, sometimes wearing multiple hats. This included specifying the area they focus on as a technologist, such as Community or Policy Technologist. There were participants who identified more with their position in an organization, such as Executive Director,

Administrator to Project Manager, or Political Staffer. Some participants identified most with their profession or field of study, stating they were Lawyers, Anthropologists, or Writers. Others described their role as Activist, Gamer, Media Maker, Advisor, Strategist, Social Innovator, or Facilitator.

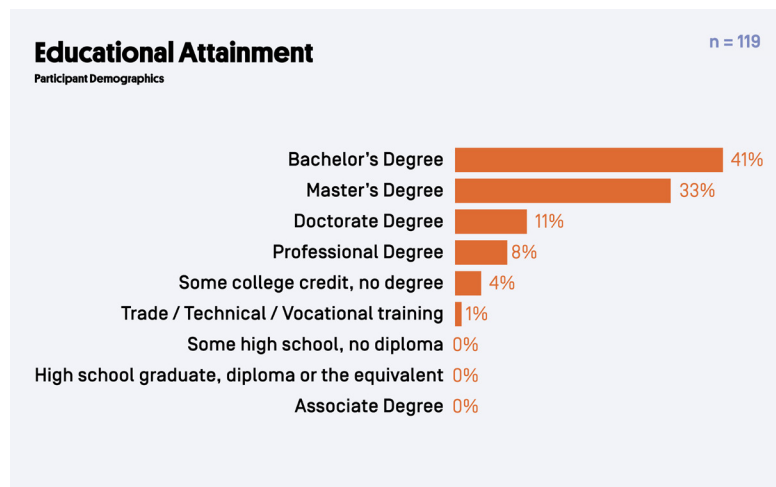
Participant Age

The majority of individuals (78%) fell between the ages of 25-44. Others (16%) fell mostly in the 45 and older age range. Just 6% were 18-24 years of age.



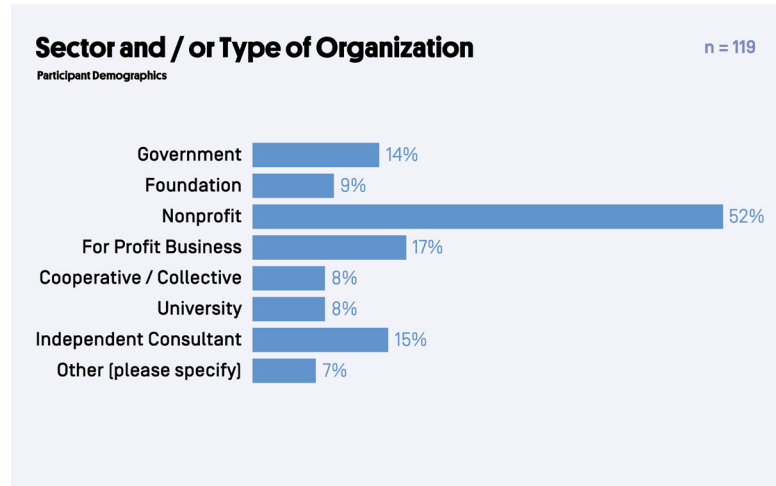
Participant Education Levels

Study participants are mostly college educated, holding either Bachelor's (41%), Master's (33%), or Doctorate (11%) degrees. Degree subject areas spanned from Political Science, Law, English/Literature, Media, Arts, and Education to Mechanical and Computer Engineering, Physics, Information Systems, and Computer Science.

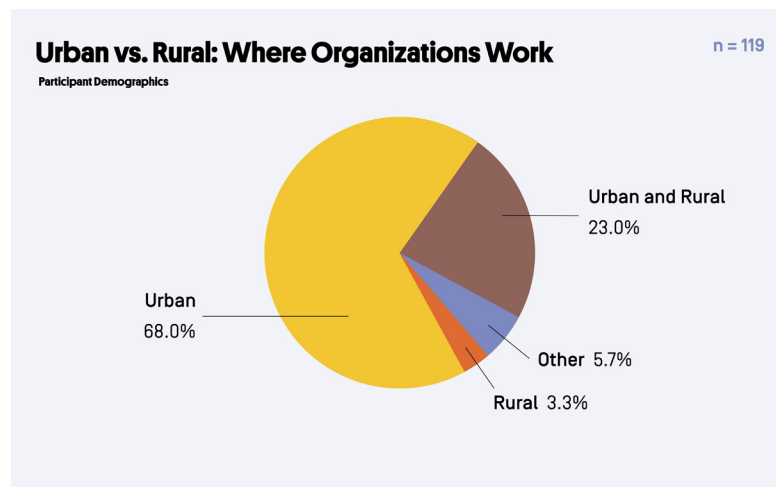


Sector/Type of Organizations and Geographic Scope

Study participants mostly work in the nonprofit sector (52%). The two other relatively prominent sectors represented are For-Profit Business (17%) and Government (14%). There were also a number of Independent Consultants (15%) who work across different sectors.

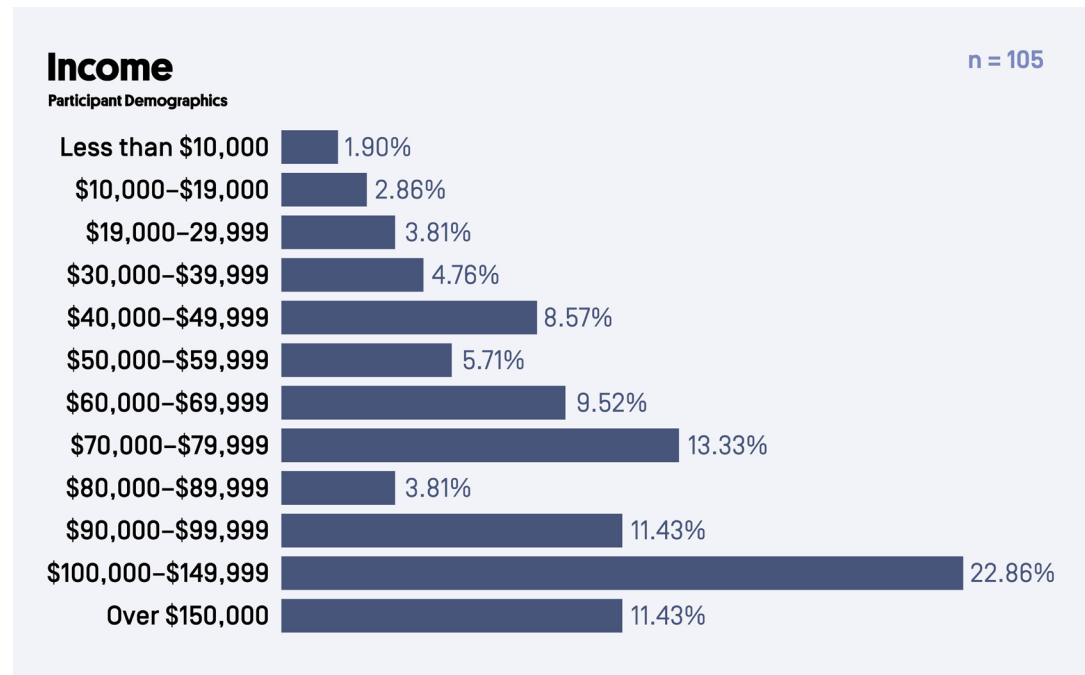


Geographically, participants are mostly based in Urban (68%) or Urban/Rural (23%) regions.

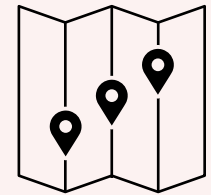


Participant Income Levels

Almost half of study participants earn \$80,000 or more annually. However, we believe this figure to be skewed relative to most practitioners in the field, since most of our study participants' job titles reflect senior-level positions, such as Executive Directors/ Founders/CEOs, Directors/Chiefs, and Managers.



III. Practitioner Experiences



“ I didn’t study technology in school. I didn’t go to school for tech. I did English and women’s studies. I’ve had very little formal tech education. Almost all of my learning has been on the job [...] Well, tinkering as a kid and starting to play on the internet when I was younger, but then I could figure out some things online and I could set up computers well for people, and parlayed that into working for nonprofit organizations in New York [...] I applied for a few different non-profit-type jobs. I wasn’t sure what I was going to do. I might’ve still gone to grad school, who knew, but I applied for non-profit stuff at the time and then I also saw this one job at the [anonymous grant making Org], which was a job to

basically create an online directory of community organizations in New York City. They needed someone who could be, essentially, the liaison between the organizers, like the actual organizations that they were going to be part of the directory, and the techies who they had found to build the database itself. They needed someone with some tech experience and knowledge but not tons, and then they needed someone with some organizer and activist experience, but not tons. I kind of fit the bill. That's really how it launched, because that both gave me access to learning more about community technology and non-profit technology specifically. ”

**— MATIJA, WORKER/OWNER AT
TECH COOPERATIVE**

III. PRACTITIONER EXPERIENCES

Our third research goal is to **develop and share knowledge of practitioner experiences** by establishing a baseline understanding of how individuals came to this work (career path), barriers and opportunities practitioners (and their communities) face, and the support practitioners may need now.

A summary of our key Practitioner Experiences findings is available in the Executive Summary.

PATHWAYS/EDUCATION/CAREER

Self-taught techies play important roles across the ecosystem

Many techies are self-taught, both in traditional tech sector work and in public, nonprofit, and tech coop work. Self-taught techies often have formal education in fields other than computer science. Practitioners had varied responses to the question of how they got their tech skills. Many said they taught themselves skills like web development, programming, system administration, or data visualization. Some took community college courses, others bought books and dove in, others went to coding boot camps, while many learned on the job and by watching others.

Self-taught techies' career paths are sometimes circuitous. Some practitioners spoke about how they stumbled into the field of nonprofit technology. “[...] *When I think back to it,*” says Hibiki, a freelance digital security trainer, “*I don’t really know how I would’ve ended up knowing the people that I know or being part of this community if I hadn’t randomly stumbled into it.*”

Another practitioner who founded an international data-tech nonprofit said they got into this work because of a purely coincidental experience. “*At the human rights organization, the administration and the organization decided that there was a bug somewhere in the office. Nobody really knew what to do with that information. They didn’t really know who to ask to find out where the bug was, or figure out how to even determine if there was one. I think because I was the only gringo in the office, for some reason, they were like, ‘You have to know people, go figure it out.’ So I ended up sort of feverishly emailing several people and being like, ‘I don’t know anything about digital security, I don’t know anything about bugs, who do I talk to, where do I go?’ And found myself trying to navigate all the different international networks [...] to find that kind of expertise, and it’s really, really difficult. I ended up looking like an idiot walking*

around the office with headphones changing radio frequencies trying to find this very distinct radio signal that is transmitted by these bugs. We found the bug, it was great, it was a really empowering moment. [...] So this got me really excited about the prospect of doing this kind of work, and that was where the [international data tech nonprofit] was born” (Becca, Executive Director of an International Data Tech Nonprofit).

The overall takeaway is that there is no defined pathway into this field. On the one hand, this means that there is certain kind of openness in the field to people who are led by their values. On the other hand, a lack of clear pathways may lead to better outcomes for people who already have strong personal networks, and these are shaped by existing social inequality.

You make it in this field with luck and conferences!

For self-taught techies to enter the field, they need luck, mixed with the ability to attend conferences and other networking events. Many practitioners said conferences and networking events were crucial spaces to find community. As one Non-Profit Tech Consultant who works in the U.S. and Canada describes: “[...] when I went to Allied Media Conference I had met people who were talking about nonprofit technology and I was like ‘What the hell is nonprofit technology?’ [...] [Next] year I ended up going to Aspiration Tech’s Non-Profit Dev Summit in Oakland, and then I ended up getting opened up [to the] intersections of technology, policies, [and] social justice. So that was my gateway, to be honest.”

Beyond providing networking opportunities, self-taught techies and other practitioners identified conferences as critical gateways into this field. They said they used the Allied Media Conference, the Internet Freedom Festival, RightsCon, and Aspiration Tech’s Non-Profit Dev Summit to connect their interests in technology with their social justice work.

Not everyone is a self-taught techie!

Unlike self-taught techies, other practitioners have undertaken many years of undergraduate and graduate studies in computer science related fields to develop a career in this sector. Even though these folks have invested time in school perfecting their tech skills, conducting research, or teaching, mentorship and interest in public service is usually what propelled their career in this field. For instance, Artemis, a Phd. in Computer Science and a researcher at a nonprofit, left his grad school career in astrophysics and joined the School of Information at Berkeley. He explains, “I saw my future Ph.D. advisor give a talk that just blew my mind, where I realized, ‘Oh,

people do that stuff, and they get paid to do that stuff, and I can do that stuff.”

Even though they studied computer science, practitioners were not interested in taking up traditional computer science careers. Practitioners like Nyx, for instance, studied computer science and political science. They did not pursue a career in the traditional corporate tech sector, because they were interested in using their tech skills for public service. Nyx, who researches the gendered digital divide in the developing world, attributes his inclination to public service to mentors who encouraged him to think critically about technology and pursue interdisciplinary research. Many participants, like Nyx, joined this field because of mentors.

Others move beyond traditional computer science careers because they are “motivate[d by] the idea of being able to leverage new forces of technology for accountability, democracy, economic opportunity, and justice” in their everyday work (Baldev, Campaign Manager at Anon Foundation).

A small but growing number of formal educational programs are available to train people for this kind of work

There are growing numbers of university departments, centers, labs, and specialized degrees dedicated to the confluence of technology and society. Our research team assembled this spreadsheet (<http://bit.ly/t4sj-programs>) of educational programs related to the field. However, few of our interviewees or focus group participants reported being involved in them, probably because most are fairly recent programs.

More commonly, interviewees described majoring in fields in the humanities and social sciences, and teaching themselves, or learning informally, how to use technology to address those concerns. This is not to say that formal educational programs are not, and cannot be, key pathways into the work. Some participants mentioned that when they were in school, these programs either did not exist, or they were not aware of them. Others mentioned that even though they were interested in technology, another major fit their interests better than computer science. Therefore, universities need to develop more programs that teach a mix of tech skills across multiple roles, along with critical thinking and participatory design. These programs can train graduates for careers in public, private, or nonprofit technology work, and can mix the skills that are needed for successful tech project research development and implementation (not just programming).

Other successful programs and approaches to joining the field include some tech bootcamps and tech meetups


Some participants mentioned coding and technology intensive programs (commonly known as “bootcamps”), including a handful that are focused specifically on social impact, as important entry points. Some also mentioned tech meetups. Others, however, noted that the vast majority of bootcamps pay no attention to values, do not teach participatory or community-led design approaches, and tend to uncritically replicate the sexist, racist, elitist, solutionist, uncritical culture of mainstream tech firms.

Hacklabs, hackerspaces, and makerspaces are important

Some participants mentioned the key role played by technology-focused spaces like hackerspaces, makerspaces, and clubs, especially those that focus on supporting people from marginalized communities. A crowdsourced list and map of hackerspaces around the world is available here: https://wiki.hackerspaces.org/List_of_Hacker_Spaces.

Many different roles are necessary for the successful integration of technology in social justice organizations

We found that when it comes to tech for social justice, expertise comes in many forms—and in order to design technology that responds to community needs, many skillsets are required. Instead of putting those with software coding skills on a pedestal, diverse expertise needs to be recognized and valued. This includes people who can code, but also those who know graphic design, project management, user research, or design research, as well as those who teach digital skills, provide emotional support in times of digital threats, or manage and organize communications. Not everybody needs to learn how to code or to have particularly technical skills in order to be a valuable member of the technology for social justice ecosystem. Publicly recognizing and elevating those with diverse skill sets would also lay the groundwork for more people to join the ecosystem, particularly if they don't have coding skills.¹²


¹² More on the need to rethink expertise is included in the report 'Strengthening the Digital Security Support Ecosystem', by The Engine Room (supported by Ford Foundation)

SUPPORT & OPPORTUNITY (PERSONAL/ORGANIZATIONAL)

Individuals from underrepresented backgrounds need greater access to opportunities, relationships, and support resources.

Fellowships, internships, and mentorship provide key opportunities

When asked to describe the kinds of support that propelled their careers, many practitioners mentioned internships and fellowships as key opportunities. As one practitioner put it: “my internship at the EFF [...] was an extremely valuable experience, and probably my first real professional experience working on tech policy issues.” Internships and fellowships give folks opportunities to learn, explore, and network. For some, they provide a pathway to employment. These opportunities are important for all practitioners. However, to expand opportunities for individuals from working class backgrounds, internships and fellowships need to provide a living wage.

Similar to internships and fellowships, quality mentors can provide essential support to practitioners. Many said that mentors changed their career trajectory. Gertruda, a digital researcher, says: “I had a very excellent boss who allowed me to trade [my] technical skills for learning other skills like writing grant proposals, writing budgets, how to manage people, and these sorts of things. Having that mentorship in the right position and being able to trade skill sets for learning other skill sets really gave me the tools and contacts that I could use to survive [in this field].”

Practitioners said they sought mentors when they first moved into this field, or when exploring new skills and areas of expertise. “After I graduated from design school,” said one, “[...] I knew that I wanted to have my own studio, but I also didn’t feel as though my design education had fully prepared me, in terms of the craft of the work. And so I wanted to study more under somebody who I really respected, as far as design went.” Therefore, internships, fellowships, and mentorships are essential to bring new talent into this field. These opportunities give those that do not have the work experience, the privilege, or the “right” background a chance to break into this field.

Conference scholarships for underrepresented individuals

Conferences are essential gateways into this field. In particular, practitioners identified the Allied Media Conference, Internet Freedom Festival, Aspiration Tech’s Non-Profit Dev Summit, and RightsCon as pivotal spaces to develop their careers. A digital security trainer with an underrepresented background puts their experience this way: “I went to this conference in Valencia called the Internet Freedom Festival, it was a surprisingly pivotal moment [...] I showed up here and there are all these amazing people. [After coming back from IFF], I started doing digital security training at libraries.”

When practitioners make their way to Detroit or Valencia, they find like-minded people who challenge the pervasive perception of technology as apolitical. One practitioner says these conferences are also spaces where they find camaraderie and realize that they are not alone in this work. “It is not just the style of the event,” they say, “it’s also who shows up. The bunch of people that, they’re the only person like them in their organization, or they founded an organization, or they’re just trying to figure out how to help out, and you get to see that you are not alone.”

However, attending these conferences is not easy. Low income individuals often do not have resources to cover travel, accommodation, and other conference-related expenses. And when conferences provide diversity scholarships, they usually have long applications processes that require applicants to write essays and attend interviews. Many practitioners put in many hours of work applying for scholarships that often support only a few people with underrepresented background. Therefore, fully funded conference scholarships with simplified application processes that target underrepresented individuals are key to growing a more inclusive field.



BARRIERS (PERSONAL/ORGANIZATIONAL)

We asked practitioners to describe the barriers and challenges that they faced in entering this field.



50% of participants mentioned structural, institutional, and interpersonal barriers

Participants described racism (33%), sexism (33%), transphobia (10%), ageism against older practitioners in the tech industry and against younger people in civil service (9%), classism (9%), and homophobia (8%). Discrimination based on race, class, gender identity, sexual orientation, disability, and their intersections lead to practitioners feeling unsafe, and make it difficult for some to continue working within this ecosystem. Other barriers mentioned by practitioners include difficulty finding community (29%), a lack of tech integration with core organizational work (22%), difficulty accessing educational programs (14%), and high participation costs.

Cost of participation

The prohibitive cost of attendance excludes significant swaths of newcomers, independent contractors, young people, and People of Color, who often have less access to independent or institutional financial support. While scholarships can be helpful, applications can be long, often only cover part of the cost of registration, and rarely cover the cost of travel and accommodation (Friedemann, Advisor of Tech Projects at a Government Office).

Ageism against older practitioners in the tech industry and younger practitioners in civil service

A few participants mentioned that in the broader technology industry, there is a form of ageism against older employees, who are often stereotyped as out-of-touch and inexperienced with technology (Blair, fellow for a legislative body). Meanwhile, in government positions, ageism can often go the other way, as there are few jobs for junior staff, and seniority and age hold significant weight (Friedemann, advisor of tech projects at Government Office).

Sexism

Many women practitioners said they had to learn to navigate being a woman in this field, often in brutal ways. Women’s experiences ranged from being catcalled on stage, to working in hostile environments where their technical expertise was continuously questioned or ignored, to having to deal with condescension from their male colleagues, to being solely and thanklessly responsible for keeping known sexual predators out of work environments (Vishnu, Founder of a Nonprofit). When women do not possess coding skills—and sometimes even if they do!—the other knowledge they hold is deemed irrelevant.

Racism remains pervasive

Hiring, advancement, retention, salaries, funding practices, and educational opportunities, among others, are all areas where People of Color face discrimination in this field. People of color only get access to a fraction of the positions, promotions, and grant opportunities. One participant pointed out that People of Color are not “allowed” to be mediocre in this field, and being exceptional also does not guarantee access, recognition, and equal pay. Most organizations do not gather or share demographic data about their employees, volunteers, leadership, boards, or grantees, further obscuring pervasive racism. Few organizations in the field have specific plans to address diversity and inclusion, and when they do have strategies, they fail to publicly disclose their plans.



IV. Visions & Values

“Accountability. The reason why I say that is because we can cause more harm than good in this work, whether it's providing the wrong information to a civil society or a community organization, or whether it's us thinking that we know more. I think accountability is a huge, huge, huge aspect and a huge value.”

I think understanding, well it's not a value, but I think having a strong understanding of liberation and what that means to a person, but also to the communities you work for. I think it's really important because we're all engaging with technology in a different way and I think that we should have a baseline understanding of what the role of technology is and how our morals and values play a role in that, but also the organizations we work with. Being mission-driven is an important part too. Like nothing is apolitical. Like technology's not apolitical, so being mission-driven in the work that we do is important.



And respect for the work that's been done by other people. What I'm also noticing is that because people are in this environment, intersection of technology and social justice, they sometimes think that they still have more expertise than community organizations that have been doing this for a very long time. [...] I think that we could recreate a lot of the power structures that we're seeing in our real life within a digital space. So if we're not talking about it all the time, having an understanding of it all the time, and understanding the power dynamics, we're just gonna recreate everything and it's not gonna be helpful. ”

**—JAYLEN, TECH CONSULTANT
FOR NONPROFITS**

IV. VISIONS & VALUES

Our fourth research goal is to **capture practitioner visions** of what is needed to transform and build the field(s) in ways that are inclusive and aligned with their values (social justice, social good, public interest, etc., as articulated by practitioners), as well as how to mitigate threats.

A summary of our key Visions & Values findings is available in the Executive Summary.

VALUES & PRINCIPLES

We asked practitioners what values and principles guide their work, what they see as some of the biggest threats to their vision, and what changes are needed to fulfill their visions.

Accountability and integrity are fundamental values for building trust among individuals, organizations, and communities

Practitioners spoke about the importance of integrity and the need for individuals and organizations to be trustworthy, authentic, reliable, accountable, and respectful in their interactions and in the work they produce. One practitioner working for a city in the Midwest shared how exceptionally important integrity is within the “technology infrastructure side of the house. A lot of the work that is done is still done on a handshake. We repair things, fix things, invoice each other and there are no contracts in sight. It’s very refreshing and enjoyable. People really are interested in making it work and that’s really important” (Richard, Broadband Expansion Manager for a Rural City).

Another individual described integrity in terms of the quality and reliability of work: “When you can actually stand up behind the facts that you’re presenting and not put fake data out in the world. Reliability and integrity, those are the values and principles I care about” (Dana, Tech Fellow in Federal Government). For them, practitioners must be accountable to the communities they are working in, and this means respect for the knowledge, resources, and experiences that community members bring to the development of new technology tools.

The capacity to empathize with others' experiences and needs leads to more meaningful relationships and more useful technologies

To best serve communities, practitioners felt communications that convey empathy, understanding, compassion, patience, and thoughtfulness can improve not only relationships, but also the technologies that are developed and produced in the process. A practitioner working within a foundation shared their perspective on what it means to practice these values: “I’d say empathy, compassion, understanding, respect [...] To sit back and listen and understand, even if it takes a while for someone to get there, what their inherent motivations and demands and needs and realities are. That patience that’s needed for those conversations, and also willingness to listen and also to learn, we’re not going to move forward because those conversations are hard” (Erica, Fundraiser at a Foundation).

A government practitioner also expressed patience and empathy as crucial values in their work, and mentioned that these are often lacking among developers. “More often than not, the technological recipe for the way forward isn’t that complicated. It’s not the toughest part, and it’s a common thing to see arrogant developers just arguing with each other about the best way to do things and that kind of stuff, and to them it’s sort of about winning an argument. That’s not the way you get things done in the government, or really, in those places that aren’t just a pure development shop” (Tom, Developer at a Federal Government Office).

Practicing empathy also calls for a willingness to understand others’ experiences and needs. It means being accountable and aware of the responsibility you hold as a practitioner.

A Co-Director at an organization that works with nonprofits and students noted that they have often seen tech projects that are disconnected from community realities. “One big example that is easy to think of is ... there’s a one laptop per child thing that was happening where they’re trying to, basically, give kids in underdeveloped countries computers. First, the intention is there, but they’re so disconnected from the community that they’re trying to serve, they didn’t even realize they don’t even have outlets to charge these computers and so that blatant disconnect means that you were not effective at all” (Barbara, Co-Director of Nonprofit).

This sentiment was echoed by a for-profit technology practitioner who stated, “the empathy part of technology is huge. It’s really important, and Silicon Valley tech falls pretty short of this, considering the negative externalities of what you’re doing. Not to say that you’re responsible single-handedly for solving them, but being aware of them” (Elionai, Civic Tech Head at a Tech Corporation).

Practitioners who take the time to listen, understand, and meet communities where they are can both form meaningful lasting relationships and develop useful technologies that help communities prosper.

Openness and transparency in technology development is integral to growing and sustaining the field

Practitioners expressed the importance of openness and transparency when engaging inside and outside their own relationships, organizations, and communities. Practitioners described this in terms of a range of skills, actions, and behaviors during interactions with others.

One practitioner shared that at their Foundation, “I think openness and transparency and communication is really important in terms of ‘this is what you said, this is what I’m saying, this is what I’m hearing.’ Sometimes you’ve got to repeat yourself, and sometimes you have to repeat what the other person is saying to make sure real communication is happening, but I think that allows for much better work in the long-term. Being open to a conversation is very important” (Julia, Program Manager at a Foundation).

Others described openness and transparency in the context of how they work, in terms of sharing their knowledge, skills, and resources with others. “I mean, openness, transparency, those are the two biggest things. I feel like giving back is a strong core value, because I’ve definitely had a lot of opportunities, both earned and not earned, so I feel like I have to have a commitment to work in the open, share back to other communities, and try to stay mindful of being equitable, down to hiring, for example” (Lou, Senior Technologist at a National Think Tank).

Practitioners also see value in creating an ecosystem where openness and transparency is the norm, since this leads to more effective resource utilization. For example, “I would say open source is probably the most valuable. I think there’s a lot of work being done by, even the meetup I’m in, where you’re trying to define a culture that’s more respectful, that’s healthy for learning, but also healthy for being productive. I think we already have a pretty good open source ecosystem, but I feel like there needs to be more. It’s hard to know what other people have already done, and what you can go off of, and what you need to do from scratch [...] As a non-profit, I have problem X, and I know that these people over here, or these set of people over there have been working on it, I can either take what they’re using or build onto what they’re using” (Joss, Developer at a National Think Tank).

Truly innovative spaces are collaborative, inclusive, and diverse, and creating such spaces takes a lot of work

Collaboration amongst practitioners is critical to the success of the work. Building and facilitating collaborative spaces is a skill that not all practitioners have. As one practitioner stated, “I definitely believe that characteristic of being able to bring people together and get them working together toward a solution is critical. I think to me definitely an innate sense of the need to collaborate. I don’t feel like anybody can do this well by themselves. So you must be a collaborator and must understand how to bring people together” (Polya, Tech Program Manager at a Lab).

Innovation can also be supported by focusing more on building long term relationships, contributing to ongoing shared efforts, and collaboration over competition. “For instance, what you think is a brand new idea, but then five years later, someone else comes on the scene and they’re intent on rehashing ideas that either succeeded or failed in the past. Not to say they shouldn’t do that, because ideas are great and when you get a great idea, even if it’s been done to death or whatever, you can innovate on it. But if there was more of a focus on collaboration, then they would know that instead of building your own X, you could be a better collaborator in the open source ecosystem by contributing to X. That makes everything a lot healthier in the long run. I understand that competition exists and it’s a real thing. I get it, but I would like to encourage more collaboration across our different silos” (Marie, Digital Security Expert at a Foundation).

Even within collaborative environments, it can be difficult to create safe and innovative spaces that are truly inclusive and diverse. As one practitioner pointed out, “Do No Harm is a value that I hold, but it’s got to be more than Do No Harm. It has to be thoughtful and inclusive. I think inclusivity is a big one, because continuing to think about who potentially is left out from some process or something that you’re building is important. There need to be more people who aren’t necessarily technologists or know how to code, who are invested in understanding and advocating for different communities and groups who are impacted by technology, or who use it” (Alda, Community Organizer and Consultant at a National Newspaper).

Practitioners who practice this value believe that creating more diverse, inclusive spaces is “a way to remove oppression, racism, classism, ‘all those isms’” (Charley, Executive Director at a Technology Nonprofit). Collaboration and inclusiveness also create opportunities for practitioners to learn and grow professionally. In one practitioner’s experience, the spaces they see that are good working models are meetups they participate in that are led by Black people, or are diverse in terms of gender and race: “The people are respectful, people are able to talk without feeling insecure about what they do and do not know. The vibe is completely different than a place like a U.S. Civic Tech Nonprofit, where we have like 3 or 4 white dudes who do not realize

the time. They're very charismatic, it's great, but it's like at the expense of people's learning and ability to build together" (Joss, Developer at a National Think Tank).

Center community expertise, priorities, and solutions in tech development and implementation

Similar to building collaborative spaces, technology that is developed with and by communities in an inclusive, participatory process ensures greater access and use for addressing community needs. This participant described why it's important to create a participatory process in the field of social justice and digital technology: "I think the priority has to be on anyone that is marginalized, or being shut out. Two key guiding principles, I think, are seeking out those populations, people or perspectives; and then really trying to organize them centrally into the project. Really trying to make sure that's where the knowledge base is, and trying to make sure that what you're coming up with is something that they find useful, or that might ameliorate the problem" (Emanuel, Assistant Professor of Communication at an East Coast University).

It's also important to consider who in the community might be left out of these conversations and participatory spaces, and to seek to actively mitigate any barriers: "We need to center particularly People of Color, low income communities in the work. The work should be centered over the tools itself. Because I think what happens is that people are so quick, 'oh I got a tool for that.' That's not what we do. We should be listening to the needs of the community. We should be centering the needs of the community over everything else, as our vision. That's sort of basic" (Charley, Executive Director at a Technology Nonprofit).

When communities are not included in the design and development of technological tools, not only do practitioners risk harming the communities they are trying to serve, but this may also create mistrust of other practitioners. "I think there's a lot of danger with people being, 'I'm doing this design for good,' if it's actually a Band-Aid solution or it's not understanding the bigger picture. I think, also, designing locally or with local people is really important, so parachuting into a context you're not familiar with and stemming it briefly and coming up with solutions for that community, I think is really dangerous" (Tivoli, Freelancer and UX Researcher at a Tech Corporation).

Many practitioners are driven by the pursuit of justice and equity

For many practitioners, structural and institutional inequalities underlie the problems they are seeking to solve. Challenging injustice is at the forefront of their work: “Everything that I’m doing with trying to teach people about technology, it’s only meaningful if it is part of a larger narrative about oppression and injustice; that it recognizes what the sources of those are. And for me, it’s capitalism and white supremacy. And so, what I value is understanding and rejecting what I think is a more dominant narrative, which is that technology provides some kind of potential utopian future, which I don’t think it does. I think it can be just oppressive. And it especially can be if you don’t recognize its potential to be” (Vishnu, Founder of a Nonprofit).

Practitioners understand that technology is only one of many tools that can be leveraged to address injustice. One participant shared their conceptualization and practice of this as follows: “There is no technology for justice, there’s only justice. What I try to keep in mind and try to instill in my work is to put technology in its proper place. Give it the attention and value that it deserves, and no more and no less. Don’t make something tech centric just because you’re the technologist and that’s what you bring to the table” (Stevie, Tech Fellow at a Foundation).

A nonprofit practitioner working in the Southwest described how justice and equity are also central to their organizational work and practices: “We have a set of core values that include serving community, empowering youth, equity, and that is of course racial equity and gender equity, and serving the LGBTQ community. [...] The last one is love, that we do this work from a place of love, and we help young people to fall in love with the community” (Nessa, Journalist and Founder of a Nonprofit).

THREATS TO PRACTITIONERS’ VALUES & VISION



One lesson that I have learned from engaging with technologists who want to make themselves useful to social justice, political policy work, is that often times people who work with technology, especially coders, think that there are easy solutions for a lot of problems that they’re just really aren’t easy solutions for, and get really frustrated with the political process because the political process and policy work are not remotely mathematical. It is not a bunch of zeros and ones, it is a bunch of human beings who have their traumas and biases and personal histories and personal interests.

I think that sometimes technologists view themselves as superior to other people because they have skills that put them in a high income bracket, and they understand the technologies that facilitate modern commerce and communications in ways that ordinary people don't. I think some humility on their part, when we start to engage in conversations about how to use technology in the service of liberation, would be really useful. Because people who don't know about how technology works know other things that are really necessary and important to protect libratory technology.



— RASHMI, DIRECTOR OF TECH AT A CIVIL RIGHTS ORGANIZATION

Practitioners saw the following three themes as some of the biggest threats to realizing their values and principles. All are rooted in values and principles associated with justice, equity, and inclusion.


Replicating the inequities we are fighting against

Practitioners were self-reflexive about how their own or their organization's actions may perpetuate the very social inequities they seek to alter. As one put it: "We are not balanced in the representation between who works for an organization and who is served by an organization. All of the pieces that are fundamental to the structure of our organizations and our work is feeding into the inequities we think our missions are addressing" (Mel, Executive Director of a Nonprofit).

Integrity and accountability to our values and principles is at risk if we fail to recognize our own roles within an inequitable system. One practitioner posed the following questions to assess how equitable we are in our own practices: "I think about how tech is not inclusive right now; how so many communities are locked out. It's not just, 'Who has these skills,' but it's also, if you do have these skills, are you being listened to, are you being passed up for the work that'll help advance your career? Are you being passed up for promotions? Are you not being hired at all?" (Tal, Founder/Director at Education Nonprofit).

Capitalism, white supremacy, and heteropatriarchy

Many practitioners hold values centered in equity and justice, and have an analysis of structural and institutional inequality. Some participants specifically named the systems of oppression that they seek to transform, using terms of analysis from intersectional Black feminist thought,¹³ including capitalism, colonialism, white supremacy, and heteropatriarchy: "I've noticed there's a lot of potential or actual

 ¹³ Collins, 2002

harm being done. Particularly when it's people with a lot of power and resources who are imposing solutions upon communities who lack those same kinds of power and resources. When design solutions or ideas don't involve the participation of the people who are going to be affected by the design, or who are going to have the design imposed upon them, I feel like that's very harmful. That goes with technology as well. I think throughout history, we've seen a lot of examples of things that are supposedly 'for good,' that are tied to colonialism, tied to capitalism, that are these supposedly benevolent kind of efforts. But that really reinforces white supremacy, heteropatriarchy" (Aston, Founder and Creative Director of a Design Collaborative).

Practitioners say that if we do not step back and examine the bigger picture, our vision for equity will be difficult to achieve: "If you think about [oppression and injustice] all stemming from white supremacy and capitalism [...], like, who's responsible for the loss of privacy? Who's affected by it, why, and what does that look like, in an unchecked future? I mean, from law enforcement, and from digital capitalists, and the like? Teaching people about technology, it's only meaningful if it is part of a larger narrative about oppression and injustice; that it recognizes what the sources of those are" (Vishnu, Founder of a Nonprofit).

Even organizations that share the same values and vision end up moving away from collaboration and openness, in fear of risking loss of resources or recognition. "I've noticed a harmful trend of nonprofits adopting the competitive technology models of for-profit corporations, which involves hiding innovation, rather than sharing, because they are working on shared goals" (Joss, Developer at National Think Tank).

Technologists and technology-centered solutions

One of the threats to centering the expertise and needs of communities in the development and implementation of technology is the attitude or approach technologists take when working with communities. Participants said that technologists often lack the patience or willingness to authentically engage with communities to develop a relationship and understanding of challenges, yet believe they know the "solutions" to community problems.

Putting technologist and technology first, in the absence of deep experience with community needs, knowledge, and experiences, further disenfranchises communities. To mitigate this risk, one practitioner expressed, "It feels important that there is at least an attempt to build capacity instead of going into a different community and starting to do work" (Jay, Digital Security Trainer at a Nonprofit).

THREATS TO THE FIELD, COMMUNITIES, AND PRACTITIONERS

“

Communities of color and marginalized communities have always been oppressed with every advance in technology. Whether it's developing photography and cameras, that correlated exactly with police using mugshots, or the development of fingerprint scanning, or things like that [...] marginalized folks have been surveilled for decades, if not centuries.

”

— HIBIKI, FREELANCE DIGITAL SECURITY TRAINER

Practitioners identified the following six key threats to the communities they work with:

1

state violence and surveillance

4

unequal access to digital technology

2

politically-motivated targeted digital attacks

5

unaccountable corporate infrastructure

3

marginalization based on race, class, gender identity, and sexual orientation

6

limited resources

Practitioners identified the following six key threats to the communities they work with: state violence and surveillance; politically-motivated targeted digital attacks; marginalization based on race, class, gender identity, and sexual orientation; unequal access to digital technology; unaccountable corporate infrastructure; and limited resources. Practitioners discussed how these threats are currently being tackled, which ones they feel need more attention, and how they have seen these threats change over time. Additionally, practitioners pointed out that these threats, for the most part, are not new; they are longstanding systemic issues, amplified by new tools and platforms. For example, in the case of surveillance, practitioners noted that well-meaning white technologists have taken up most of the available resources with narratives about “new” threats, even though Black, Indigenous, Muslim, Latinx, and Queer/Trans communities have always faced state surveillance in the United States.

State violence and surveillance

This was one of the threats most frequently mentioned by practitioners. Many work in this area, but feel it needs still more attention. Technology is both a means to perpetuate state violence and surveillance, as well a tool for mitigating violence. Practitioners spoke about how technology tools and platforms may be new and changing, but the threats are not new: “The threats that we’re talking about are old threats. They’re just digital, digitized. A lot of people have been surveilled this entire time in this country. Native people have been surveilled. Black people are always criminalized, none of this stuff is new. I think that’s the thing that is an error from the part of digital organizers sometimes. This idea that we’re presenting these new things, when in reality there are new tools, new platforms, new ways of talking about it, but the impacts have already been happening” (Amardeep, Developer/Coder/Artist at a Progressive Nonprofit).

One practitioner spoke about the relationship of surveillance to the prison system, and described how they tackle this threat through trainings: “Surveillance in this country, and others, but focusing on the U.S., is really tied to the prison pipeline and the various technologies that militarized police forces have at their disposal. Police departments with a lot of technology at their disposal are also some of the most corrupt. In our trainings, we talk about specifics, like Stingrays, and different technologies that we know police departments use, and we break that down for groups” (Nessa, Journalist and Founder of a Nonprofit).

One practitioner described efforts to mitigate these risks as “disruptive technology” (Pich, Web-developer at a National Think Tank). With respect to state violence, another practitioner spoke about how their organization is “building a better system for monitoring police, that’s independent of civil oversight agencies and the police department and DOJ, because none of those people are going to really do anything as far as we can tell; there’s not the political will to change” (Ruby, Co-founder of a Law Enforcement Accountability Nonprofit). Others mentioned being aware of “a number of apps coming out recently to deal with immigration raids or that the ACLU came up with to send videos of police misconduct securely” (Chandra, Research Associate at a National Think Tank).

Politically-motivated targeted digital attacks

Many practitioners and their organizations face targeted digital attacks, including Distributed Denial of Service (DDOS), doxing (public exposure of personal information), coordinated harassment, and threats of physical and/or sexual violence. Many organizations are concerned about risk mitigation, and actively try to identify and implement the best digital security practices and tools.

Maggie, a Developer at a Foundation, expressed that “those that have access to the technology to attack have the power.” Ruby, who co-founded a Law Enforcement Accountability Nonprofit, referred to the tradeoff between running their own email services in-house and using services like Gmail: “We worry about being targeted by trolls and right-wing groups. We currently don’t have the capacity to fight against malware attacks, and from the services out there, it seems Google has the best mechanisms to fight against these kinds of attacks.” They described penetration testing, a way to test organizational security, as “basically a simulated attack that isn’t really simulated. You would hire attackers and they would try to break into the organization, maybe physically but usually this means electronically. They try to hack people in the organization and the infrastructure to demonstrate where the issues are so they can be fixed. It also demonstrates to the organization where they really need to improve their processes” (Ruby, Co-founder of a Law Enforcement Accountability Nonprofit).

Practitioners also emphasized the importance of personal physical safety as a priority area within the digital security space, especially in situations of intimate partner violence and sexual violence. When asked what urgent threats need attention, this participant noted “the lack of digital security experts mitigating the intricate digital security issues of domestic and sexual violence victims. And how common it is because of technology to hear in these situations, ‘this person is tracking them because of their bank account,’ or, ‘this person has this thing on their phone.’ That is so common that I expect it now” (Jay, Digital Security Trainer at a Nonprofit).

Knowing that their personal or organizational data could be attacked is worrisome for practitioners, and they feel that more needs to be done to prevent digital attacks. Suggestions included digital security literacy in general, as well as a focus on digital security needs in interpersonal relationships (Garnett, Tech Consultant for Nonprofits and Jay, Digital Security Trainer at a Nonprofit).

Discrimination

Many practitioners (about half of our study participants) face discrimination, and see it as a threat that needs to be addressed across the ecosystem. Practitioners who are marginalized based on race, class, gender identity, sexual orientation, and ability feel unsafe in some spaces, making it difficult for some to remain actively working in the field.

A manager of a nonprofit described feeling like they can’t continue to develop software and engage in this space for long, due to the transphobia they face at work. Just in the past two years, they said they have seen many women of color leave due to

harassment and discrimination: “I have a hard time picturing myself continuing doing software development for much longer because most people I’m interacting with, in many ways, don’t really respect my existence as a marginalized person” (Barbara, Manager at a Nonprofit). This experience was echoed by others. A Freelance Digital Security Expert pointed out that “even tech spaces that call themselves radicals do not necessarily have conversations about privilege, and when they do, it is difficult to talk about diversity in the creators of technology. Radical and progressive spaces often fail to talk about ableism and classism within their ranks” (Brook, Digital Security Trainer).

One practitioner who is a consultant for nonprofits identified the stark differences in how she is treated in the social justice community versus in the tech community. In the social justice community, she says she is treated with respect and dignity, while in the tech community, which is mostly men, she says there is sexism and her request to collaborate in social justice work is seen as “cute” (Garnett, Tech Consultant for Nonprofits).

Unequal access to digital tools and resources

Despite assumptions that, in the United States, all residents have equal opportunity to access the internet and digital technology, digital inequality remains pervasive.¹⁴ “Half the world is not connected. We talk about techs for social justice or trying to leverage internet access to help people do whatever they want, but half the world cannot even consider that” (Nyx, Research Lead at an International Nonprofit).

Systemic inequities based on income, education, race/ethnicity, community disinvestment, and geography are all factors that both produce and are reproduced by access to technology. Unequal access means lost opportunities, less control of the narrative, and unequal power to shape the design and use of technological tools. “Usually, we would say, ‘Oh, the public space, the public sphere is where we are all equal.’ More and more, we understand that that’s not true. Like Ingress,¹⁵ Open 311,¹⁶ most of the stops, points, are in affluent neighborhoods. Similarly, Fix My Street, the people who have smartphones and other [devices] are building that map. Because if those maps are now what we base nearly everything else on, if we’re not paying attention to the inequalities in that, it’s going to be even more entrenched when we’re doing resource allocation. We have to pay attention in civic tech, in public interest tech, because who gets to build it? Who gets to critique it?” (Hardy, Technology Capacity Builder and Crisis Response Specialist).

One city government practitioner working in a rural community sees the rural lifestyle as desirable and worth maintaining, and to do that, believes that access to gigabit internet and the opportunity that comes with it is critical (Damodar, Director of Innovation and Citizen Engagement at a City Government).

¹⁴ Hargittai and Jennrich, 2016

¹⁵ A location-based, augmented-reality mobile game developed by Niantic, a company spun off from Google.

¹⁶ This website is meant to facilitate an international effort to build open interoperable systems that allow citizens to more directly interact with their cities.

Underscoring technological inequity, an Executive Director for a computer training institution noted how “technology plays an outsized role in our society, yet it is unsuccessful in terms of diversity. Additionally, the huge role that technology plays means that digital literacy and access are key to full participation in society” (Johanna, Executive Director of a Computer Training Institution).

Dependence on unaccountable corporate infrastructure

As public digital infrastructure withers, and our reliance on corporate controlled infrastructure and services increases, we stand to lose our freedom and independence. The current battle over net neutrality has made this stark fact even more clear: “There’s less values-aligned host services, non-corporate web stores every day. We (progressive organizations) are putting all these digital assets into containers we don’t control, giving government authorities access to them, and what happens if we get cut off from them? We need to figure out what we can be doing to fortify what I call movement-facing infrastructure, hosting services, consulting services, capacity building services, and other things that allow us to stay vibrant when digital marshal law is imposed. All of this to say we need alternative infrastructure. We need vegan, cruelty-free, fair trade, locally sourced infrastructure that is not annoying” (Arata, Technology Capacity Builder).

Another practitioner who works with an international nonprofit echoed this critique of dependence on corporations. They described the danger as “a concentration of wealth and what is essentially, these monopolies that have emerged in terms of the content that we use for every day (e.g. Facebook, Google, Microsoft, iOS, Android). The trend is that you have these monopoly patterns emerging or that exist now. You just have a few options and those dominate globally. Monopolies are never a good thing economic-wise or social-wise or in terms of power, or even political powers” (Nyx, Research Lead at an International Nonprofit).

Organizations’ work has also evolved over the years to address emerging needs and threats related to proprietary versus free software. One practitioner described how “we’ve seen our work shift from actually developing the software and philosophy behind freely licensed software, to enforcing the new general public license, or threatening to enforce it, and help people come into compliance with it. Then over time as we got more resources it shifted to activism and advocacy and education about free software and about problems with proprietary software” (Baldev, Communications Manager at Foundation).

Tech solutionism, top-down approaches, and the savior complex

Many participants noted that tech solutionism, top-down approaches, assumptions about the location of knowledge and expertise, and the “savior complex” are all persistent problems that plague this space. For example, Garnett, a Tech Consultant for Nonprofits, sees the biggest threat to the tech for social justice community as the lack of volunteers who want to work on “real issues that affect real people.”

Limited resources and investments threaten long-term sustainability

Government, nonprofits, and grassroots organizations often have less resources available than the private sector. This limits their capacity to compete for technology practitioners who may not initially gravitate to working in social justice. Participants feel that funding is also concentrated in the hands of a relatively small group of organizations and focused on hot-button issue areas. Most organizations are left with shrinking opportunities to build, grow, and sustain their work.

One practitioner believes we need to “solve the money problem” as it’s “really hard in resource-constrained organizations, particularly organizations that are not technology organizations, to divert resources from their core mission to technology” (Raimo, Technologist at National Legal Nonprofit). Solving the money problem also means examining how funders allocate resources, creating diverse funding streams, and being real about who is responsible for the work. This practitioner also noted that they see larger organizations dominating funding: “I think the one trend that I see that’s especially problematic is the existence of very large organizations that know how to get the money and to write for what the funder wants and have developed a pretty consistent supply chain of resources, based off of being able to cater specifically to funders. Those organizations often are able to use that as leverage to force smaller organizations to be dependent on them, or much worse, potentially take up a lot of the air in the room and choke out some of the smaller organizations” (Gertruda, Digital Security Researcher).

With respect to seeking funds, organizations need to “think critically about what funders are useful for what issues [...] just because Google won’t fund certain topics doesn’t mean they won’t fund other topics that need to be funded. This is the difference between public funding and private funding for research. That it’s not one or the other, but actually trying to foster both, and leverage both, could be very effective and trying to coordinate that” (Emanuel, Assistant Professor of Communication at an East Coast University). One practitioner who self-identified as an “anti-institutionalist” questioned whether nonprofits should be responsible for sustaining “public interest” work. They feel that the responsibility should be shifted to governments: “If it’s public interest, I would argue that it should be a municipality and paid for through things like taxes” (Hardy, Technology Capacity Builder and Crisis Response specialist).

V. Stories of Success & Failure



“*The struggle is not ‘access to encryption tools.’ It is organizing day labor communities in order to protect against ICE raids, and things like that. We’re confusing means and ends.*

[...] I think that’s the central problem that the technologists continually go through, is they pretend like technology is the thing that matters, when it’s actually people’s fight that matters and the outcome that matters.

— GERTRUDA, DIGITAL SECURITY RESEARCHER



“

[These] platforms tried to get people engaged with civic planning without understanding that they had to be able to implement what people were talking about. You can't just ask people for their opinion. You also have to act on their opinion.

”

— **HARDY, TECHNOLOGY CAPACITY BUILDER AND CRISIS RESPONSE SPECIALIST**

V. STORIES OF SUCCESS & FAILURE

Our fifth research goal is to **document stories of success and failure**, distinguish between approaches to technology for social justice work on the ground, and identify what works, what doesn't, and why.

A summary of our key Stories of Success & Failure findings is available in the Executive Summary.

MODELS THAT WORK

Community-led design and participatory approaches work

Across every sector (government, for-profit, nonprofit, social movement) we heard from participants that the most successful projects involve people in the design of technology that is supposed to benefit them. Community-led design and participatory approaches work because they enable community members to bring extensive lived experience and tacit knowledge to bear on critical decisions at each stage of the design process, from framing and scoping to the selection of relevant approaches and tools. In addition, this approach means that communities gain an enhanced understanding about the tool and develop skills during the design process. For example, Heiner, an Executive Director of a Legal Service Org, notes that in the public interest law and legal services fields, everything is very client oriented; lawyers doing this work constantly interact with clients who need to navigate larger unequal systems. She would like to see this happen more in the tech space. She emphasizes the importance of having people who are poor, are undocumented, are seeking housing, and/or have dealt with the criminal justice system involved in the creation of apps and technology systems that are supposed to be for them. Hibiki, a Digital Security Trainer, amplifies this point: “[participatory design is] all about developing tools and technology along with the people that it’s meant to serve. Just, in general, I think adopting any type of participatory approach from the beginning is usually super helpful, and also enables people to actually want to use this technology.”

Partnerships and relationships help catalyze project success

Building relationships and partnerships between organizations, government agencies, and/or communities, as well as with those with technical knowledge, can


help foster successful projects. For instance, residents and organizers from [Red Hook Initiative](#) led and developed a mesh network, training program, and more, through partnership with outside techies. Partnerships are essential to foster change in local governments. A former municipal IT department employee [convinced multiple city departments to open their data](#) by developing personal relationships, networks of mutual support, and interdepartmental partnerships. Developing partnerships around a shared issue enables actors to combine efforts for a common goal. One participant described how Fight for the Future partnered with a wide range of actors, including private companies, nonprofits, policy advocacy groups, and informal networks to fight for net neutrality in 2015.¹⁷ Moreover, it is also essential to seek partners beyond the “usual suspects.” Innovative partnerships can yield successful projects, such as a national legal nonprofit establishing one-on-one relationships with attorneys for tech companies. Through these relationships, a tech company filed a [pro-privacy EQUIS brief](#) in a cell phone tracking case.

Public exposure can pressure large institutions to create change

Corporations, and other large institutions, at times fail to take security vulnerabilities seriously. These vulnerabilities may have real security and privacy implications for users. Security researchers find that [publicly naming and shaming](#) corporations can be an effective tool to pressure them to fix vulnerabilities. Similarly, public campaigns in recent years have put pressure on companies to address racial and gender bias in interface design; in search, recommendation, and predictive algorithms;¹⁸ and in hiring, salary, and management demographics.¹⁹

Crisis response tasks can be crowdsourced using innovative tech approaches

New tools can enable effective crowdsourcing of certain tasks, such as in crisis response. For example, Hardy, a Technology Capacity Builder and Crisis Response Specialist, described a project that crowdsourced aerial damage assessment to reduce wait times for FEMA aid: “We did a thing called MapMill, which is like Hot or Not for damage assessment. Civil air patrol went up and took a bunch of aerial imagery and then people were able to click on, ‘Is it fine? Is it slightly damaged? Is it completely damaged?’ [...] we ended up with a heat map of where the damage was so that people from FEMA were able to show up and be like, ‘You need to fill out these forms so we can be here and help,’ instead of waiting for someone in the [city, then county, then federal] government to fill out paperwork [...] We were able to shortcut through that.”

¹⁷ Faris, et al. 2015

¹⁸ See ProPublica’s “Machine Bias: Investigating Algorithmic Injustice” series: <https://www.propublica.org/series/machine-bias>

¹⁹ Larsen, 2015

In another example, during Superstorm Sandy, Occupy Sandy leveraged existing networks from the Occupy movement, new coordination tools such as the Interoccupy conference call system, and commercial platforms such as the Amazon Wedding Registry to mobilize and coordinate thousands of volunteers and deliver millions of dollars worth of aid, in a process so effective it was studied and praised by researchers for the Department of Homeland Security.²⁰

ICT infrastructure projects can be excellent opportunities to create citywide coalitions, connect diverse actors, and build community power

ICT infrastructure projects can have incredible power and leverage, and can tap significant sources of funds, especially when they draw together city governments, CBOs, policy folks, and technologists. For example, the Detroit Community Technology project and the Detroit Digital Justice Coalition in Detroit, and the Media Mobilizing Project in Philadelphia, have sustained citywide coalitions with social justice organizations and relationships with diverse actors in the ICT infrastructure sector for many years. These coalitions used the Obama administration's Broadband Technology Opportunity Program as a way to bring tech, telecommunication, community media, storytelling, and community organizing together. The coalitions they created have helped win important policy victories for low-income communities in their respective cities, including around internet access, education, and workers' rights, and *"continue to be the most cutting-edge work in this field"* (Alun, *Technology Advisor for a City Government on the East Coast*). Other examples of successful ICT infrastructure projects include Red Hook Wifi and community-controlled broadband deployment in New York City Housing Authority buildings. This approach is not only effective in large cities: for example, Bartholomeus, an Economic Development Director in a small city government, is leveraging technology and innovation in his mostly rural community by organizing smart agriculture meetups, working toward municipal broadband, creating the broadband infrastructure necessary for telecommuting, and teaching technology and entrepreneurship in K-12 schools.

When movements and communities own their infrastructure, they can also own their data and draft the security and privacy protocols that they need. One model that has proved effective is the approach followed by the MayFirst/PeopleLink collective. When MayFirst/People Link decided to build infrastructure and services for movements, it enabled their members to make political decisions that were usually made for them by third party services like Amazon, Google, and others.


²⁰ Ambinder, et al.,
2013

Use technology to improve access to legal services

Another often-described model of success is to leverage technology to expand access to legal services. For example, Ivar, the Founder of a Tech-Legal Fellowship Program, said that technology can be a tool to provide greater access to legal services to underserved populations. Examples of this approach include platforms to help people expunge their arrest records, remove themselves from gang databases, and verify eligibility for DACA, among many others. Another successful legal aid service mentioned by a study participant is Illinois Legal Aid Online, a statewide website that has many self-help forms for all legal aid clients across Illinois.

Clarity about political and ethical positions

Luna, a Member of a Tech Cooperative, mentioned that her web development cooperative maintains a vocal political opinion, and that they get clients primarily because people know about their politics. She has ethical and political oppositions to most tech spaces, and prefers to stay in politically conscious, cooperative, and free software communities. Another practitioner notes that grounding countersurveillance work around how technology has historically been used to marginalize, victimize, and oppress communities is essential. Surveillance of Black and brown people did not start with the NSA and cell phones,²¹ and recognition of history is also a political position.

Prioritize resilient and simple solutions over “cool new tech”

Ahmed, a Technology Lead at a West Coast City Government, noted that working in government is not about finding cool new solutions, but rather, building solutions that are resilient and last over time. For instance, Lulu, a Technology Funder, integrated a simple text messaging system in the legal aid system in Northern Virginia, where clients get a text message reminding them of their legal aid appointment. This simple but important solution enabled them to cut down no-shows by over 40%.

²¹ Browne, Simone. *Dark matters: On the surveillance of blackness*. Duke University Press, 2015.

MODELS THAT DON'T WORK

Projects that lack engagement and understanding of technology needs and use on the ground fail

Tech projects that do not engage with or understand the needs of their users tend to fail. Several practitioners used civic gamification platforms as examples. “[These] platforms tried to get people engaged with civic planning without understanding that they had to be able to implement what people were talking about. You can’t just ask people for their opinion. You also have to act on their opinion” (Hardy, Technology Capacity Builder and Crisis Response Specialist).

Even when there is a need for a new technology solution, user research needs to precede design and development. “We funded an earned income tax credit tool [because] ... unfortunately billions of dollars each year go unclaimed by the working poor because they don’t know they’re entitled to it. So, we built a system like that, and it got a lot of usage in English, but when we built it in Spanish and Vietnamese almost nobody used it. We built some automated documents in the Detroit area for the Arabic-speaking population. Almost no usage. So either we don’t understand how to deliver technology to these special language groups, or we’re not doing the right outreach, or it’s not culturally appropriate, I don’t know” (Lulu, Technology Project Funder at a National Legal Nonprofit Funder).

Projects with good intentions are not immune from failure. Alda, a Community Organizer and Consultant at a National Newspaper, explains, “I was working for a company that [...] built this SMS based voter registration system. It was directly related to a community need where registration was a really difficult task because of how rural some of the landscape was. People had to travel long and far to get registered. It really tried to fill that gap. SMS technology was researched and deemed a preferable way to get that registration done because folks had access to phones. [...] They also built a voting component in it. The voting component was something that essentially was, you can use this if you want to, or you don’t have to use it. It wasn’t really thought through. It was kind of just built because it could be built. [...] There was never any user research for the voter component. [...] There was no analysis on the political context of what could happen if they started using that and different groups got hold of telecoms and could ask telecoms to turn over that data. SMS is clear text. It’s very easy to see then who you voted for, depending on what your mobile number was. There’s just so many things wrong with that. I feel like that was something built with good intentions, but they did not do any of the risk modeling that they should have done.”

Thinking technology is a silver bullet, without understanding the problem, is dangerous

Practitioners shared many stories of failed projects. The common theme amongst these projects was that they all put the solution before the problem, technology before people. At best, this approach wastes scarce resources and time. Tivoli describes one failed project that stood out for her as a user researcher: “This group tried to make [a self-assessment tool] for elderly people, and it was iPad [...] the idea was that it would be for patient activation, get people into the system. And it completely failed, because it was a technology solution. And, I don’t remember if it was the same group that redid it or if it was a parallel project. Someone did a brochure, and it was much more successful. That just stuck in my mind, because technology isn’t always the right solution. We don’t have to always make an app for it.”

Another practitioner shared the following story, of an organization that assumed that technology and folks with tech skills could magically solve a particular housing issue: “I was involved in an attempt in the civic tech space for tech workers to come in and do pro bono work for organizations and I was placed on a project [...] that was trying to do work around folks who basically had heat violations in their apartment. Meaning that in the winter, their landlords didn’t turn on the heat. Broke the heater in an attempt, often, to get rid of folks. This felt very meaningful but I think that like all of the things you might expect to happen in terms of the scope was way too large, these folks at this nonprofit weren’t organizers so they weren’t actually as connected to housing organizers who are directly working with these folks. They had this assumption that if you gave people evidence, then they would be able to take it to housing court and win their cases. It’s not eviden[t] that’s the problem. There are so many different levels for which I think the assumption that if you add a [technology and] tech people to a thing, that it will work out, [it didn’t]” (Jay, Digital Security Trainer at a Nonprofit).

Technology solutions that do not factor in organizational and community readiness are setting themselves up for failure

Before implementing technology solutions, it is essential to verify whether they meet organizational needs. Organizations are at times eager to adopt new tech solutions, but pushing the wrong tool can result in backlash, mistrust, and over the long run, even greater inefficiency. As one practitioner put it: “First they’re like, ‘We really need this database’ [...] but it’s because this one person really thought that this database, they liked it because it’s sort of cool looking. They kept pushing it through the organization, but it didn’t meet their needs. They went through like a year of transition, and it was just horrific. [...] I think folks see technology as just a Band-Aid,

rather than as an actual culture shift. It can be a game changer. [...] The tool itself can cause all sorts of stuff, and then it causes distrust. Those cause distrust for everything, not just that tech person, but distrust for the technology overall. Then they resort back to doing things in a way that take more human hours, [...] it becomes more difficult to do and then they're not able to build on it" (Matija, Worker/Owner at Tech Cooperative).

COMMUNITY ACCOUNTABILITY

Center community needs over tools

Technologists often confuse means and ends. What ultimately matters is not tool adoption, it is people's struggles and the outcomes in their lived experiences. "The struggle is not access to encryption tools. It is organizing day labor communities in order to protect against ICE raids and things like that. We're confusing means and ends. [...] I think that's the central problem that I think the technologists continually go through is they pretend like technology is the thing that matters when it's actually people's fight that matters and the outcome that matters" (Gertruda, Digital Security Researcher). This is not to say that technology doesn't matter. However, technology design processes should be accountable to the community and its struggles. One useful community accountability mechanism practitioners suggest is a community advisory board that is representative of the community and that engages and participates meaningfully in the tool development process.

"Parachuting" rarely works

Funders must first build capacity within communities before bringing support from outside. Too often, funders support parachuters for a quick fix, instead of capacity building within a community. Quick fixes are not sustainable beyond the existence of the parachuter: "We have funders that will fund large organizations who have large amounts of money to fly in to communities of color and basically tell them, this is how things should be done. We disagree. I disagree with that methodology and that strategy. One is that there are people within the communities already with knowledge, or lots of knowledge, who are not being lifted up. Two, we believe that if we're really going to build power, we need to build power in the communities, which means we need to let go of our ego and we need to sort of build, mentor, build that power in the community, build the skills there. [...] Funders are not into that work. They want to do something else. They think this is the faster way. I mean I know everybody wants the fast solution, but this is not going to be a fast solution. That's where I know it impacts our funding greatly. There's only a handful of funders now that are focusing on building capacity" (Charley, Executive Director at a Technology Nonprofit).

Practitioners said that funders need to listen to community organizers, not only to techies: “I trust the organizations I work with to be able to assess, to some degree, what kind of technology stuff they need. I don’t hear that reflected in some of these initiatives that I hear about. [...] I think that people need to really listen to community organizers, not the techies” (Matija, Worker/Owner at Tech Cooperative).

Funders often support projects that do not emerge from the real needs of community organizations, but because of personal relationships or because a technology sounds “cool”

Those with power and resources often get to dictate who gets funding, which projects are funded, and technological “solutions” without much consideration for the community nor the context and broader implications of their proposed approach. As one practitioner described: “I would go in to interview people about what they needed from an online directory of community organizations. We soon found that people don’t need that! But the funders really wanted to. [...] It wasn’t necessarily something that the organizations were saying they needed, though of course they said it sounded great” (Matija, Worker/Owner at Tech Cooperative).

Tech practitioners need to use access to elite spaces to open them, and to share knowledge and power

“I think a lot of tech practitioners who have skills and access to elite spaces need to use that position of power and knowledge to teach other people, and also to make those spaces accessible to more. One thing when I got into [an elite university], my grandmother called me and said, “You are now entering another type of space that you need to be the conduit for anybody in our family or in our community to be able to access that space. You are the gateway now to that.” [...] I think that’s something that people need to think about. How can we make the knowledge and power that we hold more accessible to more people and redistribute that power and knowledge?” (Chandra, Research Associate at a National Think Tank)

EVALUATION & SUCCESS

We asked practitioners about how they evaluate their work. There was no single evaluation rubric. Instead, success is contextual based on organizational goals. Participants gave a very wide range of concrete examples.

For example, when evaluating status quo systems, participants noted a tension between the recognition that we need maintenance for existing projects, and the observation that sometimes we stick with existing systems because we are locked-in, or because “people who already get money keep getting money.” In other words, it is important to tease out the difference between status quo projects that get support because they are good projects, versus those where we keep pouring money into failed systems. Ultimately, the question should be: Is this project meeting the needs of the community?

Practitioners do not agree on a single rubric to measure the impact of their work. However, most agree that success is a process, rather than a single outcome. Depending on the service their organization provides, the meaning of success can change quite drastically. At the same time, some practitioners opined that their peers in this field “far too often, don’t have a sense of what success is” (Gertruda, Digital Security Researcher).

For instance, for digital security experts within social justice movements, success is about mitigating the harms of state surveillance and infiltration of movements—a longstanding, ongoing battle. For folks that are organizers, success is the ability to organize grassroots movements for a mobilization, cultural, policy, and/or transformative outcome.²² For practitioners working with local, state, or federal legislative processes, success implies a favorable shift in policy. Some measure their success by the relationships fostered within a community. For others, the yardstick is their ability to conduct thorough user research to better inform the design of technological affordances. For public office holders, success is defined by the public’s perception of their work, and ultimately by re-election. For others, success is the number of app downloads, active users, pageviews, encrypted messages exchanged, and so on.

Use of technology to catalyze organizing

Organizations like Color of Change, Presente.org, weareultraviolet.org, Coworker.org, Control Shift Lab, and many others use technology as a catalyst for online and offline organizing. They use digital technology as a tool to empower their constituencies and further their movements. These organizations understand the “speed, scale, and power of new media and technology to raise people’s voices” (Alexis, Director of a National Nonprofit). Others develop websites, tools, apps, and platforms, and build and host ICT infrastructure to help nonprofits and movement groups advance their work.

Technology and science have been used to discriminate against, marginalize, and control communities of color for centuries. Some organizers, activists, and grassroots practitioners leverage their tech skills to teach their communities about threats and harms from digital technology, security, privacy, data extraction and manipulation, malware attacks, and more. Others spend a good chunk of their time facilitating cryptoparties, threat modeling, and providing contextualized digital security training.


²² Bosi, et al., 2016

They develop and use technology to protect communications infrastructures and the open web, avoid censorship, and access information.

Technology also can be used to enable professionals to work “at the top of their license,” as one practitioner put it. For instance, one organization is developing software for legislative drafting to help keep track of changes made to draft bills, and ultimately to help them avoid making mistakes (Loredana, Cofounder of a National Tech Policy Organization). One technology funder we interviewed supports legal aid clinics to create tech tools that automate most of their redundant work, so that they can spend more time with their clients.

Common unmet tech needs of organizations

We asked practitioners to describe their organizations’ unmet tech needs. These were very diverse, across the ecosystem. Many nonprofits do not have the skills or resources to develop digital tools for their work (Garnett, Technology Consultant). For instance, lawyers providing legal-aid services often spend much of their time dealing with paperwork that can potentially be automated. When they are able to automate some aspects of client service delivery, they have more time to solve the legal problems of their clients.

When nonprofits do have a system or a platform, it is often a hand-me-down from the corporate world (Joss, Developer at a National Policy Think Tank). These systems are often expensive and are optimized for the needs of the private sector. Frequently, nonprofits would prefer to use free software and autonomous infrastructure, but adopt corporate services like Gmail because they are more user-friendly and secure than an in-house email server. In addition, most nonprofits find it challenging to expand their in-house systems. Maintaining non-corporate services is very demanding because it requires ongoing maintenance, response to threats and attacks, training, regular upgrades, and so on. Those nonprofits, co-ops, and collectives that do provide tech services to movement groups, nonprofits, and the public often struggle to maintain and update these services.

Unlike their nonprofit counterparts, those working within local, state, and federal governments often deal with government procurement bureaucracy. For instance, practitioners within government noted that smaller vendors are usually either not able to comply with government requirements or are not interested in “jumping through all the hoops” to do business with the government.

Referring to specific unmet tech skills, practitioners identified the need for more data journalists, data engineers, data visualization experts, app developers, system and infrastructure administrators, malware researchers, and practitioners with machine learning skills.

VI. Conclusions & Key Recommendations



We gathered hundreds of recommendations from a wide range of practitioners. We synthesized these into the following five top-level recommendations that we feel apply to all actors across the ecosystem. Targeted recommendations for specific audiences (Tech Practitioner Orgs, Other Orgs, Individual Practitioners, Funders, Educators, and Government) are available in tables at the end of each of the five top-level recommendations.

1. Nothing About Us Without Us

Adopt Co-Design Methods and Concrete Community Accountability Mechanisms.



The design of tech projects must involve people from the communities they are meant to serve, early on and throughout the design process. This was mentioned by more than half (52%) of participants. Actors across the ecosystem, including government, private sector, and nonprofits, all increasingly understand how important it is to authentically engage community-based organizations at all design stages of tech projects. This common understanding should be made more visible, and concrete methods for community engagement and accountability should be shared across the field.

Adopt co-design methods. Co-design means spending time with a community partner, in their space, learning about needs, and working together through all stages of design. Usually, no new tech development is necessary to address the most pressing issues. Co-design methods have a growing practitioner base, but could be better documented and supported.

Develop specific, concrete mechanisms for community accountability. Nearly all interviewees said that the people most affected by an issue have to be involved throughout all stages of any tech project meant to address that issue. All actors in this field need to move from stating this

as a goal towards implementing specific, concrete accountability mechanisms. For example: funders should require written community accountability mechanisms from their grantees, and educators should center community accountability in education programs.

Center community needs over tools. Community needs and priorities must drive technology design and development, and technology is most useful when priorities set by those who are not technologist. “Be humble, and respect community knowledge” (Rashmi, Director of Tech at a Civil Rights Org). Process and solution should be driven by the community; do not make community members token participants.

Invest in education (both formal and informal) that teaches co-design methods to more practitioners. Support existing efforts in this space, create new ones, and push existing educational programs, institutions, and boot camps (such as those listed in our Educational Programs Spreadsheet: <http://bit.ly/t4sj-programs>) to adopt co-design perspectives and practices.

Create tech clinics, modeled on legal clinics. Public interest law and legal services work are

client-oriented, and lawyers doing this work constantly interact with people who need to navigate larger unequal systems. This is considered part of their legal education. Tech can learn from this model.

Create fellowships to spread co-design methods across multiple fields, not only in tech, but in other areas as well, such as legal services.

Do real usability testing, and create Community Research and Design Boards. Usability testing with real world users is essential to validate assumptions and improve applications, services, and UX.²³ In addition, consider creating additional mechanisms for broader oversight, such as Community Design Boards for technology design projects, similar to the recent implementation of Community Review Boards for research projects (and/or, expand the capacity of existing Community Review Boards to review technology design projects).²⁴

Avoid “parachuting” technologists into communities. In general, parachuting is a failed model. Don’t do it. Stop “parachuting” technologists into organizations, or focusing on isolated “social good” technology projects, devoid of context, when the real need is capacity building (Mel, Executive Director at a Nonprofit). This does not mean “never bring someone in from outside a community.” It depends on what the community wants, and what the person parachuting in is doing: are they building capacity, or are

they creating a vacuum? We do think that it is worthwhile to develop better models for sharing local knowledge with national groups, and for national groups to share their perspective with local groups in ways that benefit all parties.

Stop reinventing the wheel! Well-meaning technologists often reinvent the wheel, without researching existing solutions. Designers, developers, and project leads, no matter what sector they are in, should begin projects by researching existing projects and organizations (Elioenai, Civic Tech Head at a Tech Corporation and Martha, Lead of Acquisitions at a Government Office). This also stems from competitive, rather than collaborative, mindsets (“ours will be better, so we’ll just compete”). It is important to work together to develop shared tools and platforms, instead of perpetually competing for scarce technology resources.

Support maintenance, not just “innovation.” Significant resources are necessary to maintain and improve existing movement tech, but most focus is on the creation of new projects. We need more resources to update, improve, and maintain already proven tools.

Additional Related Recommendations:

- **Gather data about community-led design** and create a (public) mechanism to track and share community accountability in tech projects.
- **Participatory research (PAR) and participatory design (PD) are key approaches** to developing meaningful, useful, accountable tech projects with community buy-in. PAR and PD should be mainstreamed across the field, along with UCD and agile development methods.
- **Make it a goal to involve people without tech backgrounds into tech projects**; this may help “abolish” the “tech bro” mentality.

²³ See the 18F guide to usability testing: <https://methods.18f.gov/#usability-testing>, and 18F Guide to Recruiting methods (for gathering users to conduct usability tests): <https://methods.18f.gov/fundamentals/recruiting/#recruiting>

²⁴ Mikesell, et al., 2013

AUDIENCE-SPECIFIC RECOMMENDATIONS

Tech Practitioner Orgs



- Encourage tech for social justice practitioners to engage with the communities they serve on equal footing, as equal partnerships, to encourage humility, trust, mutual learning, and meaningful community engagement.
- Adopt co-design and agile development methods, do usability testing, and adopt formal community accountability mechanisms like signed working agreements and community design boards.

Other Orgs



- Adopt co-design and agile development methods and do usability testing.

Individual Practitioners



- Avoid parachuting into communities, be humble and respect community knowledge, ask “who” before you attempted to “solve” this problem, and refrain from reinventing the wheel.
- Learn and practice co-design methods.

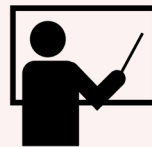
Funders



- Require a community accountability mechanism or plan in grant proposals, similar to impact assessment.

- Support formal usability testing.
- Support community design boards. These aren't focused only on UX/UI, instead they are also focused on “What are the key assets and challenges in our community? How does this project meaningfully impact our lives? Do we really need this? What are the potential benefits and harms of this project?”
- Respect community articulations of their own needs.
- Fund increased tech capacity in already existing PoC-led organizations.
- Stop supporting projects that are not emerging from real needs of community organizations, although they sound like a cool idea.
- Allocate increased dedicated resources for areas of the work that are often neglected: capacity building, maintenance, and improved usability of existing proven tech, not just pilots of new tools.

Educators



- Support more educational programs (both in and outside of formal higher ed, as well as boot camps) that teach co-design, critical thinking about technology, and user centered design, including in practice, not just theory. Support existing efforts in this space, create new ones, and push existing educational programs and institutions to adopt co-design perspective and practices (Judyta, Facilitator, Education Technology Collective). For example, see our list of educational initiatives, but note that just a handful teach community-led design: <http://bit.ly/t4sj-programs>.

- Create Tech Clinics, modeled on Legal Clinics. Public interest law, and legal services work, is client oriented and lawyers doing this work are constantly interacting with people who need to navigate larger unequal systems; it's also part of their education. Tech can learn from this. People who are poor, are undocumented, are seeking housing, and/or have dealt with the criminal justice system, must be involved in the creation of apps and technology systems that are supposed to be for them and create tech teams, both staff and fellowships and internships, within existing legal services clinics (Heiner, Executive Director at a Legal Services Org).
- Center community accountability in education programs. Lots of college programs have people “do community work” as a practicum, but without grounding or context. There are some models that try to do this better, e.g. Hampshire college’s “Holyoke bound” program, with a daylong training in the history of the city. See also MMP’s course for students in the spring term, about social justice, prior to a summer internship.
- Develop strategies beyond technology deployment in schools. Deployment alone is not enough: How will it be used, what does the community need, what do community leaders, educators, and organizers have to say?



Government

- Adopt co-design and agile development methods, conduct formal usability testing, and support community design boards.
- Develop mechanisms to include community members at all stages of the design process (scoping, ideation, prototype, iterations, etc.) rather than only in usability testing.
- Governments have responsibility to advance the public interest. Find ways to shift responsibility for maintenance of successful public interest tech projects onto governments. Nonprofits should not be responsible for long-term maintenance, development, and scaling of successful public interest tech projects.
- 18F and USDS are seen by many as successful models at the federal level. Possibly replicate these models for municipalities. Also consider creating/supporting a shop (or network of shops) like this to support nonprofits.
- Vendors bidding for municipal contracts could be required to produce community design and accountability plans.
- Revise hiring practices to account for the fact that many top practitioners are self-taught and don't have formal technology-related degrees.
- Consider models to allocate some resources in government design processes for meaningful community participation, so that the whole process doesn't just happen “in-house,” with community input limited to UI testing of the MVP. For example, can lessons from successful municipal participatory budgeting programs be applied to create municipal participatory design programs?

2. From Silver Bullets to Useful Tools

Change the Narrative, Lead with Values, and Recognize Multiple Frames and Terms Across the Ecosystem.

Be clear about values and vision. Regardless of how you or your organization think about the role of technology in social change, it is important to be explicit about your values and vision. For example, for many practitioners we interviewed, social justice is the core value, and technologies are tools to support movements that advance towards social justice. For others, such as many of those working in the public sector, accessibility and efficiency are core values, and tech is a tool to make government services easier to use.

Shine a light on the amazing diversity of people who already work in this ecosystem. It is important to lift up diverse practitioners in the public conversation about this work; it's not just white cisgender men that work in tech.

Challenge the narrative that tech work lies only in the corporate sector. Emphasize that folks can make a life out of tech work to support themselves, their communities, and their values.

Challenge the narrative that the “most exciting” tech work is only in for-profit startups. Produce and circulate a new narrative about the very wide range of roles, problems, challenges, and opportunities to do tech work in public, nonprofit, and movement organizations.

When circulating jobs, grant opportunities, procurement bids, and other resource opportunities, consider that any frame you choose will make some communities feel more comfortable than others. For example, some women and PoC feel pushed out of “technologist” frames, even if they have tech skills. Certain frames, like civic technology, are predominantly white, male, and U.S.-centric, and are not seen as inclusive spaces for most people.

Acknowledge that technology often reproduces longstanding problems. Don't erase the fact that new tools and platforms often reproduce longstanding problems. For example, surveillance is not a “new” threat for Black people in America. Listen to, support, resource, and center practitioners from communities that have been dealing with issues for a long time, even if there is a new technological manifestation of the problem.

There is an ecosystem, not a single field. We found that there may not be a singular field that contains everyone who is working with technology for the public interest, common good, and social justice. Our research revealed many related fields, with some individuals and organizations as connectors, and some cohesive elements, as well as differences and silos. It may make more sense to speak of an ecosystem.

Terminology and framing matter. Different terms and frames resonate for different actors in this space. It's best to understand the range of terms and frames that people are using to do excellent work leveraging technology to advance the public interest, the common good, social justice, government and corporate accountability, and so on. "Public interest technology" and "civic tech" seemed to resonate most with white people and those working inside government, foundations, and larger policy shops. Some of the WoC and/or LGBTQI people we interviewed do not identify with the term "technologist," or even have been specifically told they are not "technologists," especially if they are not computer programmers; they use the language of technology and social justice and community technology, and find other spaces alienating. Just as there is both "public interest law," "community lawyering," and "movement lawyering," we may need both "public interest tech," "community tech," and "movement tech." These may overlap, but are not the same thing (e.g. see Law for Black Lives at www.law4blacklives.org).

Language choices may alienate the people we are hoping to attract. Educate people on how their language choices may alienate people and communities they hope to collaborate with. For example, when circulating job opportunities, grant programs, and other resource opportunities, be aware of these differences and consider that all communities feel more comfortable with some frames than others. For example, some women and PoC feel pushed out of "technologist" frames, even if they have tech skills. Note that this is consistent with research findings that the language used in job postings influences who feels comfortable applying.²⁵

Acknowledge that technology is laden with a value framing that does not always align with the values of the people doing the work. Support and

create more resources to help people working in tech develop political lenses on technology, and acknowledge that all work in this space involves politics and takes place in a context of systemic power inequality.

Change the narrative around tech work to highlight alternative paths and center social justice values.

- **Emphasize that there are other options for folks in tech work**, other paths they can take, and that they can make a life out of doing tech work that supports and advances their communities and their values.
- **Produce and circulate a new narrative** about the very wide range of roles, problems, challenges, and opportunities to do tech work in public, non-profit, and movement organizations.
- At the same time, the narrative of "they're just the IT person" is something that we also feel needs to be challenged. One partner said "**the IT people at my organization are doing amazing things, really creative things!**" The idea that this work is not appealing or rewarding should also be challenged.



²⁵ Gaucher, et al., 2011

AUDIENCE-SPECIFIC RECOMMENDATIONS



Tech Practitioner Orgs

- Create avenues for more people to learn about alternative organizational models such as cooperatives, non-hierarchical organizations, and other forms of value-driven orgs.



Funders

- Do not require or expect people to use one term or frame if the goal is to make the field as inclusive as possible.



Other Orgs

- Educate people to broaden thinking about who is part of this field. Expand the language that we use to make space for more diversity and inclusivity, and to get out of silos.



Educators

- Frame technology work as a path to challenge power dynamics and address political issues, and not just as a field for people who love puzzles and money.



Individual Practitioners

- For people writing about this ecosystem, recognize and make clear that different actors and communities use different terms and framings to talk about their work, and findings might need to be tailored to different groups.



Government

- When seeking to develop technology programs, people in government should explore connecting to tech for social justice spaces, community technology practitioners, and other networks beyond the civic tech field, in order to reach a more diverse base.



3.

#RealDiversityNumbers

Adopt proven strategies for diversity and inclusion.

Racism, sexism, classism, ableism, transphobia, and other forms of oppression permeate the tech sector, and the subfields we looked at are not immune. The broader tech sector has slowly begun to pay attention to these problems, but still, diversity and inclusion initiatives are not enough. Our interviewees and project partners have no easy answers for what to do about these massive challenges. Some feel it most important to create our own ecosystem and firms for community autonomy. Others emphasize the need to modify organizational culture using best practices in privilege training and hiring practices, adopt good mentorship practices, and create something like Project Include, but for tech for social justice. In a complex world, all of these strategies and more are necessary. All participants agreed in at least one area: we know that it will be crucial to gather and share demographic data about field participants, and to publicly set equity goals with timelines. Despite recent attention to race and gender disparity in the broader tech sector, this field lacks demographic data. We need key actors in the space, especially the biggest players such as Code for America and the Knight Foundation, to track and share demographic data including race and gender of employees, leadership, and grantees.

Gather and share demographic data about employees, volunteers, leadership, and boards.

Tech for social justice organizations should be leading the technology sector in diversity and inclusion. Instead, we don't even have data that would allow us to make the comparison. We found that very few organizations are tracking the demographics of their staff or volunteers. One of our key top-level recommendations is for all organizations, whether public, private, nonprofit sector, or volunteer, to gather and share demographic data about their employees, boards, and contractors. This would enable us to quantify what many interviewees shared in terms of their own experience: that women, PoCs, and gender nonconforming folks are too often pushed out of the field. For example, Project Include has attempted to do this for the broader tech sector, and we might work with them, or model a similar project on their approach.

- Specifically, the biggest organizations in the space, especially Code for America, the Knight Foundation, the Ford Foundation, and New America Foundation, **need to gather and share demographic data about their employees, participants, and grantees.** As leading organizations in the

²⁶ For example, Project Include recommends that tech companies gather and share demographics for the following data: Employees overall, by function, seniority and tenure; Employee status (full-time / part-time / contractor); Management and leadership; Employees reporting to female managers; Employees reporting to managers from under-represented groups; Salary; Raises and bonuses; Equity, all-time and 12 months trailing; Employee equity pool, all-time and 12 months trailing, by gender and race; Investor equity pool, by gender and race; Vesting rates, by gender and race; Board of Directors; Candidate pools and hiring funnels, by role; Voluntary and involuntary attrition rates; Promotion rates; Complaints (formal and informal); Complaint resolution status.

space, with big, visible platforms, they can help lead by example, show their values in their practices (“walk their talk”), and set the tone for others.

- **We recommend reviewing existing demographic data standards**, and adopting a specific standard to be used across the ecosystem.²⁶
- **Specific questions to address in gathering demographic data include:** who is going to gather this data? What steps do we need to take before that data is published? How can this data advance the goals of social justice orgs?

Create and publicly disclose time-bound diversity targets. It is not enough to simply gather and publish demographic data. Based on demographic data, orgs should set targets, and target dates, for their boards, leadership, and employees to reach demographic parity with the communities they serve.²⁷

Adopt tried and true techniques for inclusive workplaces. Adopt research-based best practices on how to foster inclusive workplaces, many of which apply across fields. Some of these are:

- **Create a code of conduct** and community agreements to hold people who make the space toxic and exclusive accountable.
- **Provide training and resources** around community management, to enable more open and inclusive spaces.
- **Forefront values, mission, and goals.**
- **Organize diverse project teams.** In addition to being a goal in and of itself, diverse teams choose better ideas and problems to work on, and are more creative and innovative.
- **Have privilege trainings and conversations within orgs.** Even tech spaces that call themselves progressive or “radical” often fail to have meaningful conversations about privilege. For example,

these spaces rarely talk about their own ableism and classism. However, also note that some research shows that poorly implemented privilege trainings can backfire on women, PoC, and T/GnC people. Provide resources for groups that are known to do this well, such as AORTA, to provide trainings for tech practitioner organizations, as well as in government, nonprofit, and private sector spaces.

- **See also** the recent Breaking the Mold report by Open Mic: <http://breakingthemold.openmic.org>

Inclusive hiring, mentorship, retention, and advancement. Intentionally invest in the hiring, mentorship, retention, and advancement of women, People of Color, and gender nonconforming folks in tech for social justice.

- **Change hiring practices.** In job listings, orgs should focus more on skills than on degrees. Shift to more skills-based framings, rather than field and identity-based framings. For example, rather than saying you’re looking to hire “a technologist,” say that you’re looking to hire someone who works with technology. Since many people skilled and working in this space never got a formal education in it, shift from requiring computer science degrees to focusing on skills.
- **Promote wage transparency.** Gather and share wages information about jobs in the field.
- **Create and support mentorship programs** for underrepresented folks. Several participants suggested a **mentorship matching program** across the field, as well as support for in-house mentorship.
- **Create leadership trainings** for women.
- **Fund travel.**
- **Fund paid fellowships and internships** (Models are Media Democracy Fund and PHDX internships).
- **Practice sponsorship** (see <http://larahogan.me/blog/what-sponsorship-looks-like>).

²⁷ “Develop and Publicly Disclose Time-Bound Goals for racial diversity to ensure that tech companies not only make public commitments — they also produce timely outcomes that reflect those commitments.” (Breaking the Mold, Open Mic 2017: <http://breakingthemold.openmic.org>)

- **Fund programmatic work** rather than contractor funding for women and PoC.
- Be cognizant of the financial constraints of rural folks, **provide travel funding to rural folks** so that they can participate in conferences.
- Support organizations to develop **institutional human resources capacity**; i.e. someone to have regular check-ins with about well-being, and/or someone who can develop organizational policies to support staff well-being and retention.
- **Help people feel supported and sustained through all stages of their path**, not just getting them into the field. Build community for tech folks of color working in social justice.

Transform conferences, convenings, meetups, and other gatherings to be far more diverse, inclusive, accessible, and affordable. Support inclusive sites and convenings to foster field growth.

- **Face-to-face spaces are still important.** For funders and orgs in the space: support and resource physical spaces that create face-to-face interaction, networking, and learning among diverse people. For example, community colleges, universities, and libraries; inclusive hacklabs and makerspaces; and conferences and meetups.
- **Document convenings.** Thorough and inclusive documentation is important so that those who are not able to attend can still benefit from the learning, examples, and shared knowledge developed at convenings.
- **Community colleges may be able to play more of a key role in the ecosystem.** Community colleges are low-cost places where people can gain computing skills, often with financial aid. They should develop programs, internships, and other mechanisms to place students in tech for social justice, and funders should resource them to do so.

- **Libraries are key sites for this field**, but too often overlooked. Libraries reach communities that have been ignored by the infosec and digital security worlds, but who paradoxically live with the highest levels of risk: People of Color, poor people, and/or formerly incarcerated people. Libraries should develop more programs in this field, and should be supported by funders to do so. Recommendation: support programs in libraries related to this field, such as tech classes (Vishnu, Founder of a Nonprofit).
- **Hacklabs and Makerspaces** can be important to field growth, but are too often exclusive. Support those hacklabs and makerspaces that are doing a better job of inclusion and diversity, like feminist and PoC led hackerspaces such as LOL.
- **Meetups at the local level** will continue to play an important but sometimes unsung role in field development. Spaces like Netsquared meetups, Tech Resistance, and Code for America meetups, as well as specific regular meetups for women, LGBTQI people, and/or Black people and PoC in the field should all be supported and recognized. At the same time, many tech-focused meetups are replicating gender, race, and class inequalities; systematic outreach to meetup organizers might help.
- **Spread the DiscoTech model.** Learn from the most community-inclusive event models, such as the DiscoTechs (Discovering Technology events, by the Detroit Digital Justice Coalition).
- **Support inclusive conferences.** Conferences that are doing a good job of being inclusive should receive more support and visibility. Conferences are still key sites but are often inaccessible to low income people and PoC. Conferences that are good at inclusion, like Allied Media Conference, should be rewarded and grow; those that are failing at this need to change their practices or be replaced by better spaces.

- **Create a Diversity/Inclusion Conference Scholarship Fund** for the field, specifically for the best conferences, and/or: resource and promote key conferences directly with scholarship funds, specifically conferences that are already known to create good spaces for Women, femmes, Queer and Trans folks, Black/ Indigenous/PoC, immigrants, and/or disabled people. Since conferences are a key point of entry to the field, funders could pool resources to create a diversity/inclusion fund for conference fees and travel support.

- **Convene across silos.** Create or support convenings that gather people across the various silos of this broader field (Artemis, Technologist, International Policy Technology Nonprofit).

Diversify leadership. Look at the demographics of leadership, and recognize the ways in which that sets the tone for the space. Organizations and funders: Create regular reports on diversity, including diversity of leadership. For funders: consider diversity of leadership as a metric for funding organizations.

Additional Inclusion Related Recommendations

- Women, femmes, and trans people of color specifically are being pushed out of the field. Be sure that both demographic data gathering and sharing, and inclusion initiatives, specifically track progress in attracting, retaining, mentoring, promoting more WoC (Barbara, Manager of a Nonprofit).

- Older people face extra discrimination in the tech sector, despite deep knowledge and capacity for mentorship they may possess (Blair, Fellow for a Legislative Body).

AUDIENCE-SPECIFIC RECOMMENDATIONS

Tech Practitioner Orgs



- Invest in inclusive hiring, mentorship, and advancement of marginalized people in this field and beyond.

- Adopt evidence-based best practices to advance inclusion and diversity within organizations.

Other Orgs



- Invest in inclusive hiring, mentorship, and advancement of women, People of Color, and gender non-conforming folks in this field and beyond.

- Adopt evidence-based best practices to advance inclusion and diversity within organizations.

Individual Practitioners



Show up in solidarity with others in your own life and workplace. For example, white folks pressure organizational leadership to adopt best diversity and inclusion practices, cisgender people push to make workplaces more trans-inclusive, and so on.

Funders



- Key funders should gather and share demographic data about the people leading the organizations and projects they have funded in the space.

- Specifically, the Knight Foundation, as the largest funder in the space, should gather and share year by year data about gender, race/ethnicity, and other demographic characteristics of its grantees.

- Along with demographic data, funders should also publicly set targets and dates for their grant-making to reach demographic parity with the geographic communities where they fund work.

- Foundations: Be transparent around your own demographics, staff, and practices. People tend to fund people who are like them, so the funders should more closely examine how they are operating.

- Access to funding is often based on existing social networks and personal relationships. This presents a huge challenge to growing the field outside the network of usual suspects, and beyond the “trusted” group of highly educated, middle class, white cisgender men and women.

- Fund smaller and grassroots groups.

- Fund outside of coastal cities (Nessa, Journalist and Founder of a Nonprofit).

- Fund groups and initiatives led by WoC; specifically support Q/T/PoC in tech.

- Track and publicly share demographics of grantees, and set targets and timelines for parity.

- Change funding requirements and processes to favor non-traditional applicants doing great work, rather than just people with good grant writing skills and personal connections to funder networks.

- Consider funding mentorship initiatives specifically. Several practitioners mentioned the need for a mentor-matching program across the ecosystem.

Educators



- For orgs that work with young people: expose them to people who look like them who are working in the tech for social justice field.

- Universities can develop more programs that teach a mix of tech skills across multiple roles, along with critical thinking and participatory design. These programs can train graduates for careers in public, private, or non-profit technology work, and can mix the skills that are needed for successful tech projects across research, development, implementation, community building, adoption, support, and so on (not just programming).

- Develop fellowship programs that support people from existing organizations, and from marginalized communities, rather than just the one year parachute model.

- People respond to educators who share some aspects of their experience (Peter, Digital Literacy Instructor).

- Breakdown sexism and racism in STEM education.

Government



- Public sector (government) should gather and share demographic data about employees. We found that people who are new to government say that it is one of the more diverse sectors they have worked in. If this is true, it should be highlighted. If it is not, government should set targets and dates to make it true.

4.

Developers, Developers, Developers?

Recognize Different Roles and Expertise in Tech Work, and Support Alternative Pathways to Participation



Technology roles within organizations are diverse, and span a spectrum of skills and issues. Tech work is not performed only, or even primarily, by software developers. The different kinds of roles that are necessary to effectively use tech for social justice need to be made much more visible. It's also important to not expect the one "technologist" on staff to do everything from general IT support, to design processes, to full stack development.

Create positions for roles such as graphic designer, product manager, community manager, co-design facilitator, researcher, popular educator, in addition to developer when hiring for tech projects across sectors (government, nonprofit, for-profit, cooperative).

Establish support for mentorship. Supportive individual relationships (i.e., in workplace and educational spaces) were mentioned by practitioners more frequently than any other support mechanism as critical to their career path. **Create a mentorship matching program**, especially to connect mentors that share aspects of lived experience with mentees. Increase **support, recognition, awards, dedicated community networks, and other mechanisms to improve mentorship** across the ecosystem. Create support, recognition, possibly awards, dedicated community networks, and other mechanisms to improve mentorship in the field

(Moses, Digital Security Consultant).

Create paid fellowships and internships that support people from existing organizations, and from marginalized communities, rather than just the one-year parachute model. Create paid opportunities for students of color in other fields, like law, to learn about how tech design processes work.

Create a program for diverse practitioners to visit schools and universities and talk about their career path and work.

Demonstrate pathways specifically into tech for social justice. Make careers in tech for social justice visible in mass media, social media, and popular culture.

Focus on digital equity and popular education to expand the pipeline of people who see themselves as part of the ecosystem. There is a crucial role for people who are able to work as educators in frontline communities that are most affected by the application of digital technologies.

Shine a light on the many roles in tech work. Create template job descriptions to demonstrate the wide range of roles available in this field; for example, many projects might need a software dev, a graphic designer, a community organizer, a project

manager, and a design researcher, or other roles.

Encourage people to use different terms that resonate with people in unfamiliar parts of the space.

AUDIENCE-SPECIFIC RECOMMENDATIONS



Tech Practitioner Orgs

- Document and showcase the diverse pathways of practitioners into this ecosystem.



Other Orgs

- Strive to make sure that technologists become part of your movement and community.
- When creating jobs and staffing up, hire for roles other than software developer to make your tech work effective.



Individual Practitioners

- Become part of the community you work with.
- Recognize that not every organization will be able to, or needs to, hire people with advanced tech skills in-house. Independent consultants, tech coops, and small or medium-sized tech organizations provide key support for the technology needs of many grassroots, movement building organizations.



Funders

- Recognize and support the diversity of roles that are needed for effective tech work across the ecosystem.
- Fund and support paid fellowships and internships, along with mentorships to support People of Color, women, gender nonconforming folks, and others that come into this field.



Educators

- Expand how we teach computer science and talk about technology careers. When people are first being exposed to ideas about what computer or tech careers involve, we should make sure that “tech for social justice” is visible, rather than the predominant framing, which is that computer science is for people who ‘like puzzles and money.’ This would be true in education both for youth and adults.
- Expand what tech means: it’s not just developers, not just about making lots of money. Starting in elementary school: this is integral to all of our lives, and it is important for art, history, and politics.
- Create more opportunities for tech learning that is not just about tool building or coding, but about use.
- Create a program for practitioners in the field to visit schools and universities and talk about their career path and work.
- Technology can be a tool to provide greater access to legal services for underserved populations. Additionally, a fellowship model can be used to provide paid opportunities for students of color in one field, like law, to gain interdisciplinary skills, like design thinking and agile software development (Ivar, Founder of a Tech-Legal Fellowship Program).



Government

- When creating jobs and staffing up, hire for roles other than software developer (e.g. graphic designer, researcher, participatory design facilitator, and other roles) to make your tech work effective.

5. Coops, Collectives, and Networks, Oh My!

Support Alternative Models Beyond Startups, Government Offices, and Incorporated Nonprofits.



We found that some of the most sustainable, respected, and interesting tech work is being done by groups that do not fall into the standard models of for-profit startups, government offices or agencies, or incorporated nonprofit organizations. For decades, **tech cooperatives** and **collectives** have provided key services to many movement groups and nonprofits, such as mailing lists, web hosting, etherpads, and secure communications, often on a shoestring. **Informal networks** are able to rapidly coalesce during moments of crisis and provide improved information flow, identify priority needs, and organize large numbers of volunteers around tech work with very little resources. **Membership organizations** also provide tech infrastructure in ways that are accountable to the needs of social movements. All of these and other organizational forms are crucial but less visible forms of tech work for social justice; they should be recognized and supported.

Explore how to help non-501(c)3 organizations, such as B Corporations, worker cooperatives, member organizations, and ad-hoc networks support themselves and provide living-wage jobs for their employees while also doing tech work for social justice.

Provide tech coop development support including incorporation templates, legal incorporation support, operating agreements, and other resources that will help more tech company founders consider coops. These should be standard within tech incubator programs, in university offices that are dedicated to helping create startup spin-off companies, and in municipal initiatives (such as economic development offices) to support new business creation. Many interviewees said that they found the cooperative sector to be a friendlier place for women, PoC, and T/GnC folks. Grow more tech coops that can provide decent paying and stable jobs doing tech work that is values-aligned. Stability, rather than just a high income, is key. For example, we recommend organizational development support to help tech cooperatives buy benefits for their worker/owners.

Provide startup and conversion funds for tech coops, both to help with new tech coop creation, and to support coop conversion of existing companies. We recommend resources that will help more people consider starting tech cooperatives, that more startup founders consider tech cooperatives, and that more existing “tech for good” companies consider cooperative conversion.

Provide rapid turnaround support for ad-hoc networks. Often, especially in crisis moments, ad-hoc and informal networks mobilize very quickly to provide tech support. In many cases, they are more effective than traditional organizations. Develop mechanisms to support such networks.

Leverage ICT Infrastructure projects to grow the ecosystem. These projects can draw together city governments, CBOs, policy folks, and technologists. Successful models from Detroit (DCTP), Philadelphia (MMP), and New York City (Red Hook, Rise:NYC, public housing broadband, etc.) should be supported and widely replicated.

Use government procurement to grow the ecosystem. This requires focused initiatives that can help smaller organizations and companies, women and PoC-owned firms, coops, and others navigate the procurement process.

Study the tech coop sector. The U.S. Federation of Worker Cooperatives is a rich resource for information about tech cooperatives, many of which play very important roles in supporting local movement, nonprofit, and advocacy organizations. They conduct an annual census of U.S. cooperatives, and hold data that could be used to develop a clear picture of what is needed to grow the tech coop sector. We also recommend that the University of Wisconsin Center for Cooperatives conduct a study that focuses specifically on the tech coop sector (see <https://mce.uwcc.wisc.edu>).



AUDIENCE-SPECIFIC RECOMMENDATIONS



Tech Practitioner Orgs

- Figure out ways to build “passive income” to be sustained without relying on contracts and grants.
- Consider coop conversion.



Other Orgs

- Some women, People of Color, gender nonconforming folks and others say they find tech cooperatives to be more inclusive spaces than most tech firms. Of course, there is room for improvement here as well. Other organizations should strive to foster as inclusive and diverse environments as tech cooperatives.
- Consider coop conversion.



Individual Practitioners

- When starting new organizations, consider models beyond nonprofits, including cooperatives, B Corporations, collectives, and so on.



Funders

- Explore how to help non-501(c)3 organizations, such as B Corporations and worker cooperatives, to support themselves and living wage jobs for their employees while also doing tech work for social justice.
- Explore how grassroots fundraising (in contrast to large foundations) can be utilized for tech work through nonprofits (such as Grassroots Grantmakers).
- Provide rapid response funds for ad-hoc networks that provide crucial tech support in moments of crisis.



Educators

- Universities and colleges should support students to form tech cooperatives, B Corporations, and other triple bottom line firms in the ways they normally support VC-backed LLC startups.



Government

- Business development funds and programs should include support for coops. For example, see the City of Boston’s cooperative initiative.
 - ICT Infrastructure projects can have incredible power and leverage, and can tap significant sources of funds, especially when they draw together city governments, CBOs, policy folks, and technologists. Successful models from Detroit (DCTP), Philly (MMP), and NYC (Red Hook, Rise:NYC, public housing broadband, etc.) should be supported and widely replicated (Bartholomeus, Economic Development Director for a City Government and Robin, Worker at a Tech Collective).
- Use government procurement to grow the field. This requires focused initiatives that can help smaller orgs and companies, women and PoC-owned firms, coops, and others navigate the procurement process. Learn from some other sectors (e.g., food) about how to do this well. Municipal offices of Economic Development can play a role in supporting local businesses to navigate procurement. (Tom, Developer at a Federal Government Office and Margareta, Founder and Co-Director of a Govtech Department).

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APPENDICES

A. Methodology



PAR Approach

#MoreThanCode is a Participatory Action Research (PAR) project. The first phase of the project consisted of interviews with practitioners and a literature review of work being done with technology to advance social justice and/or the public interest. Findings from this stage informed selection of a diverse set of organizational research partners for the second, expanded phase of research. In the second phase, all project partners worked together to develop the research questions, study design, data collection, data analysis, conclusions, and recommendations. This report summarizes outputs from both phases of the research process. Our study focused primarily on practitioners in the United States.

Partner Selection

Project partners helped guide the research design, implementation, and analysis, and engaged their communities and networks in data collection. We sought organizations that play a significant and active role, touch and represent a key segment of the ecosystem, and that were willing and able to commit to help guide the research design, implementation and analysis. We were also committed to ensure that partners represented a diversity of perspectives, and sought to include groups that, despite their extensive work, are not often included in agenda-setting and research. To achieve this, we considered the following criteria:

- Identity (race, class, gender identity, sexual orientation, disability, age, and other factors) of individuals who would work on the project;
- Community (who the orgs prioritize working with);
- Job type/roles (developers, designers, policy advocates, community organizers, educators, researchers, “field builders”);

- Organization type/Sector (government, private sector, civil society organizations);
- Organization size;
- Pathways (where folks came from);
- Design and development approach (do they use a collaborative or participatory design approach? Do they use best practices in software development, such as F/LOSS & Open Source, Agile, Lean, User Centered Design?);
- Political analysis (do they use an intersectional analysis of race, class, gender, sexual orientation, disability, immigration, and so on?);
- Field builders (people who are intentionally doing “field-building” work).

Based on these goals, our selection process was as follows: coordination team members from RAD and OTI developed a shared initial shortlist of individuals and organizations, with input and feedback from Code For America and NetGain. We reviewed the shortlist for diversity of experience according to the criteria above, then extended it through several rounds of review, additions, and reprioritization. From this expanded list, each person on our core team then nominated up to 10 organizations; we tallied nominations and then met to come to consensus on a list of 10 organizations and 10 alternates.

Literature Review

During the first stage of the project, we reviewed relevant literature, including scholarly, practitioner, and funder reports focused on related fields. Topic areas included civic tech, open data, appropriate technology, community technology, predictive analytics and algorithmic decision-making, education and talent pipelines, diversity and inclusion initiatives, participatory design methods, values in design, technology’s role in social movements, public interest in the context of public interest law, and media justice. Our goals were to identify and summarize key texts, concepts, and arguments within and between these fields. Notes from this review are available here: [T4SJ Lit Review for Kickoff](#).



Interviews

We interviewed 109 people, using a modified snowball sample:²⁸ interviewees were nominated by project partners, coordination team members, and by project advisors. In addition, we asked each interviewee to recommend additional people in the field to interview. As we proceeded through our master list of potential interviewees, we regularly reviewed the demographics of interviewees to date, and continually modified outreach in order to maximize diversity along lines including gender, race/ethnicity, geographic location, and sector (government, private, nonprofit). We focused on practitioners in the United States, although a few interviewees reside and work elsewhere. Demographics of our interviewees (and focus groups) are described in the [Demographics](#) section of the report. We used a semi-structured interview guide²⁹ (available at <http://t4sj.co/uploads/interview-guide-ll.pdf>) for all interviews, and recorded interview audio for transcription. Immediately after each interview, the interviewer(s) wrote up notes about the interview and key takeaways. Key takeaways from all interviews are available at <http://bit.ly/t4sj-interviews-keytakeaways>. All interviewee names have been changed for privacy purposes.



Focus Groups

We conducted 11 focus groups, ranging from as small as six to as large as 33 people per group, with a total of 79 focus group participants. The goal of the focus groups was to gather particular communities to discuss, in a structured way, people's definitions of the field, pathways into the work, supports and barriers, and visions for the future. Focus groups were conducted in-person and, in some cases, via video chat. All focus groups used a semi-structured Focus Group Guide that mirrored interview questions (available at <http://t4sj.co/2017/08/24/focus-group-facilitation-guide.html>).

²⁸ Biernacki and Waldorf, 1981.

²⁹ Wengraf, 2001.

We recorded and transcribed audio of all focus groups and interviews, and replaced all participants' names with pseudonyms for privacy purposes.



Demographic Questionnaire

We asked all research participants to complete a demographic questionnaire before or after interviews and focus groups. Of the 189 research participants, 121 completed the questionnaire. The questionnaire was intended to gather individual and organizational demographic information about research participants. We asked participants about their race and ethnicity, gender identity and sexual orientation, age, highest education completed and specialization, personal income, and disability status. We also asked practitioners about the sector they work in, how they define themselves in relation to their work (artist, tech project manager/coordinator, developer/coder, designer, educator, funders, policy advocate, researcher, and journalist), and the positions they hold (such as Director/CEO/Founder, manager/supervisor/leadership role, fellow, consultant, volunteer, or worker-owner/member). Finally, we gave our research participants the option to receive their interview transcript and audio recordings. Our questionnaire instrument is available at <https://www.surveymonkey.com/r/t4sj-questionnaire>.

Terms Worksheet

We provided all participants with a worksheet containing terms related to the field, such as “civic tech,” “community technology,” “public interest tech,” and so on. We asked them to circle terms they identified with, place question marks next to terms they were not familiar with, and cross out terms they felt did not belong. We also asked them to write in missing terms that they felt were important. The terms worksheet is available here. This process was used to not only collect data but also to spark conversations about why and how certain terms and frames are used. Through this process, we created a list of 252 terms that study participants use to describe their work. These terms can be found at <http://bit.ly/t4sj-terms>. These terms were later used to query secondary data sources (see below).

Secondary Data Collection and Analysis

We leveraged a variety of secondary data sources as part of our research process:

- [US IRS Form 990 data](#) provided by the [Nonprofit Open Data Collective](#);
- Job Listings from [Indeed.com](#) and [Idealist.org](#);
- Existing reports on diversity in adjacent sectors;

- Existing reports on the funding ecosystem.

Additionally, we synthesized information from interviews and desk research to create resources such as the Organization List (<https://morethancode.cc/orglist/>) and the Educational & Fellowship Programs List (<http://bit.ly/t4sj-programs>).



For both the IRS Form 990 data and the job listings, we used the list of 252 terms provided by study participants to describe their work (<http://bit.ly/t4sj-terms>) to search and filter for relevant organizations and job listings.

To enable our analysis, the IRS Form 990 data was imported into a PostGRES database to allow for fast querying across the over 450 million records in the database. The sequel queries used for this analysis are available on [GitHub](#). The Nonprofit Open Data Collective is also working towards providing access to the entire data set for further research. We have provided access to the subset of data we analyzed [here](#).

In order to access the job listings data, we built a query tool and scraper, which are available on [GitHub](#). For [Indeed.com](#), we registered for access to their API to explore the viability of creating a job website to refer job seekers to opportunities in the ecosystem. This allowed us to query the Indeed API for job postings using the participant-provided terms. [Idealist](#) does not have an API, but the website is backed by the search indexing tool [Algolia](#), which made it possible to get structured search results. All of the data and metadata from the job postings were stored in a PostGRES database to enable analysis and aggregation. Finally, we used [Joblint](#), a Natural Language Processing library, to test and score job descriptions for issues with sexism, racism, culture, and expectations. We caution that there are some false positives; for example, jobs focused in gender work, e.g. “Women’s Rights,” score higher on “sexism.” The job listings can currently be explored here: <http://jobs.t4sj.co>.

Partner Convenings

We held two in-person partner convenings. The first was a Research Design convening in March 2017 designed to: (1) build solidarity, relationships, shared project values, and vision; (2) refine and confirm research goals, focus, desired outcomes, and methods; (3) develop project data privacy and retention agreements and policy; (4) develop a project implementation plan; (5) define project advisory roles and nominate potential project advisory board members; and (6) understand what social justice

means to each of us. Key outputs from the convening included a refined set of project goals, research questions, prioritized audiences, and outputs that established the project's research design and methods.

The second convening, the Research Analysis retreat, was held in October 2017. The purpose of this convening was to (1) build solidarity, relationships, shared project values, and vision; (2) review and develop a shared analysis of our research, such as key findings and limitations/gaps; (3) develop recommendations for priority audiences; (4) decide how to frame the research; (5) finalize data privacy, retention, and use agreements and policy; (6) develop a research dissemination plan; and (7) project evaluation (to date). Partners reviewed and discussed the themes that were emerging from the data, and provided their analysis and recommendations to help shape the findings presented in this report. Reflections of these discussions can be found in the T4SJ Convening II Annotated Data Gallery.

Limitations

Since there is no agreed upon definition of the field boundary, and no widely accepted universe of participants in the field, it was not possible to conduct a true random selection of individuals or organizations. Therefore, as with any non-random sample, our findings should not be assumed to be representative of the entire field. We especially urge readers to exercise caution when interpreting the demographics of our interviewees and focus group participants: we specifically sought to include women, People of Color, LGBTQI folks, and others who are not well represented across the broader technology sector. Therefore, the demographics of our study participants do not necessarily represent the demographics of any of the of subfields we discuss in the report. Many participants from marginalized communities related that they feel like outliers; unfortunately, for the most part people working in this ecosystem (with the possible exception of tech for social justice and community technology subfields) over-represent white cisgender men with high levels of education, as in the broader tech sector.

B. Anonymity & Data Protection Policy

To protect research participant privacy and confidentiality, the coordinating organizations and the research partners established processes to document, manage, and store participant data. This included signed MOUs, written informed consent, tightly controlled permissions for access to recordings and transcripts, and anonymization of all transcripts prior to analysis. Our policy and process was as follows:

- MOUs signed by team members included agreement to uphold privacy, confidentiality, and full informed consent of research participants.
- We provided all interview and focus group participants with an Informed Consent Agreement outlining the project purpose, risks and benefits of participating, confidentiality parameters, and voluntary participation. We asked research participants to provide recorded verbal consent at the start of their interview or focus group.
- We limited access to documents containing research participant data to coordinating organizations and research partners. In some instances, data was limited by individual or organization. For example, (1) each interviewer had their own raw data storage folder to store original recordings and transcripts prior to anonymization; (2) access to the demographic questionnaire data was limited to the RAD team.
- Interview and focus group audio transcripts were de-identified for analysis by anonymizing names of participants, organizations, and mentions of persons or organizations that may easily identify the participant or their organization. Access to the document tracking anonymization was limited to specific persons on the research team.

C. Additional Research Outputs

Data Galleries

We produced three Data Galleries, or printable slide decks, of key quotes, findings, and data visualizations for use at face-to-face workshops and project convenings, as well as for online circulation. Data Gallery I: <http://bit.ly/pit-cfa-gallery>; Data gallery II: <http://bit.ly/t4sj-datagalleryll-annotated>; Data gallery III: <http://bit.ly/morethancode-gallery>.

Practitioner Profiles

We produced six practitioner profiles, in a journalistic style that describes each person's work, their career path, and challenges and opportunities they faced along the way. These are available at <http://t4sj.co/blog.html>.

Key Interview Takeaways

We wrote short summaries of key takeaways from all interviews. These are available in this standalone doc: <http://bit.ly/t4sj-interviews-keytakeaways>.

Data Visualizations

A gallery of interactive data visualizations, including demographic data of project participants, IRS form 990 data of organizations in the field, relative term frequency in job listings from Indeed, and more can be found here: <https://public.tableau.com/profile/t4sj#!/>

Powerful Quotes

After importing anonymized interview transcripts to Dedoose, we coded all transcripts according to our codebook. Coders marked particularly powerful quotes in each category. These were later exported from Dedoose, cleaned up and used as slides in the data gallery, and/or added to this standalone T4SJ Quotes document: <http://bit.ly/t4sj-powerfulquotes>.

Organizational Database

We developed a database of information about more than 700 organizations and projects, available both as a spreadsheet (<http://bit.ly/t4sj-orglist>) and via a searchable web interface at <https://morethancode.cc/orglist/>. We initially seeded this with the organizational list from the Civic Tech Field Guide (available at <http://bit.ly/organizecivictech>), then added new organizations that came up in project interviews, focus groups, and workshops. The database is searchable by type of organization, sorted into the top level categories that emerged from our research process, as well as by variables such as “Majority PoC” and/or “Queer.”

Nonprofit Database

In the second stage of research, we decided to build a more comprehensive database of relevant organizations by using [U.S. IRS Form 990 data](#) provided by the [Nonprofit Open Data Collective](#). We searched through over 450 million records in that database for relevant organizations, by using a list we compiled of 252 different terms that study participants use to describe their work (the terms list can be found here: <http://bit.ly/t4sj-terms>). The search process returned 91,058 unique organizations (foundations and nonprofits), who use one or more of our search terms somewhere in their 990 Forms, e.g. in mission statements, program descriptions, or grant descriptions. However, some of the terms provided by practitioners are quite broad, and apply to many organizations that may or may not specifically engage in technology work (for example, “criminal justice”). We classified these broad terms as “Other.” **When we exclude organizations that we classified as “Other,” we are left with 39,000 nonprofit organizations who included one or more of our search terms in their tax forms.** We encourage others to further explore and analyze the data [here](#).

Educational Programs Spreadsheet

There are growing numbers of university departments, centers, labs, and courses of study dedicated to the confluence of technology and society. We assembled this publicly editable spreadsheet of educational programs, fellowships, informal learning environments, bootcamps, meetups, and online education resources: <http://bit.ly/t4sj-programs>.

Jobs Database

Job listing provides an important lense on the way that employers think about and describe this work. We created the following jobs database in part as a research tool (to help us understand how employers talk about the field) and also as demo design for a job board that might be useful to help more people enter and advance within the field: <https://jobs.t4sj.co/>.

Terms List

A spreadsheet of all terms mentioned by practitioners to describe the work they do. Includes tabs for full list, count of participant identification with terms, top-level categorization codes, and counts of orgs that use terms in IRS form 990: <http://bit.ly/t4sj-terms>.

Research Instruments

Throughout the project, we made all research instruments publicly available, including our final semi-structured interview guide (<http://t4sj.co/2017/08/23/interview-guide.html>) and focus group guide (<http://t4sj.co/2017/08/24/focus-group-facilitation-guide.html>).

List of Additional Research Outputs

Stage 1 Research Outputs

- [Taxonomy of types of public interest tech work people are currently doing and findings from the first nine interviews](#)
- [Annotated bibliography](#)
- Notes from [the Code for America Summit](#), and the [New America Growing the Public Technology Ecosystem event](#)
- 23 interview transcripts

- Data gallery I, from the first round interviews: <http://bit.ly/pit-cfa-gallery>
- [Semi-structured interview guide, round 1](#)
- [Major Themes from first 9 Interviews](#) doc
- [List of projects, organizations, and companies doing public interest technology work](#) (note: this spreadsheet is being fed directly into the [website](#))

Stage 2 Research Outputs

- 109 interviews and transcripts
- 11 focus groups, a total of 79 focus group participants, notes and transcripts.
- 6 Practitioner Profiles: <http://t4sj.co/blog.html>
- Revised Interview Guide: <http://t4sj.co/2017/08/23/interview-guide.html>
- Revised Focus Group Guide: <http://t4sj.co/2017/08/24/focus-group-facilitation-guide.html>
- Job board: <https://jobs.t4sj.co/>
- IRS form 990 data browser: <https://public.tableau.com/profile/t4sj#!/vizhome/T4SJIRS990/SummaryTableCountsofOrganizationsbyTypeperCategory>
- Secondary Data Visualizations: <https://public.tableau.com/profile/t4sj#!/>
- Educational Programs Spreadsheet: <http://bit.ly/t4sj-programs>
- Data gallery II: <http://bit.ly/t4sj-datagalleryII-annotated>
- Key Interview Takeaways: <http://bit.ly/t4sj-interviews-keytakeaways>
- Powerful Quotes: <http://bit.ly/t4sj-powerfulquotes>
- Report



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<https://morethancode.cc>

