Design From the Margins

Centering the most marginalized and impacted in design processes - from ideation to production

Afsaneh Rigot

Technology and Public Purpose Project
Belfer Center for Science and International Affairs
Harvard Kennedy School
79 JFK Street
Cambridge, MA 02138

belfercenter.org/project/technology-and-public-purpose

Design From the Margins

Centering the most marginalized and impacted in design processes - from ideation to production

Afsaneh Rigot

About the Technology and Public Purpose Project (TAPP)

The arc of innovative progress has reached an inflection point. It is our responsibility to ensure it bends towards public good.

Technological change has brought immeasurable benefits to billions through improved health, productivity, and convenience. Yet as recent events have shown, unless we actively manage their risks to society, new technologies may also bring unforeseen destructive consequences.

Making technological change positive for all is the critical challenge of our time. We ourselves — not only the logic of discovery and market forces — must manage it. To create a future where technology serves humanity as a whole and where public purpose drives innovation, we need a new approach.

Founded by Belfer Center Director, MIT Innovation Fellow, and former U.S. Secretary of Defense Ash Carter, the TAPP Project works to ensure that emerging technologies are developed and managed in ways that serve the overall public good.

TAPP Project Principles:

1. Technology's advance is inevitable, and it often brings with it much progress for some. Yet, progress for all is not guaranteed. We have an obligation to foresee the dilemmas presented by emerging technology and to generate solutions to them.

2. There is no silver bullet; effective solutions to technology-induced public dilemmas require a mix of government regulation and tech-sector self-governance. The right mix can only result from strong and trusted linkages between the tech sector and government.

3. Ensuring a future where public purpose drives innovation requires the next generation of tech leaders to act; we must train and inspire them to implement sustainable solutions and carry the torch.

About the Author

Afsaneh Rigot is an analyst, researcher, advocate covering issues of law, technology, LGBTQ, refugee, and human rights.

She is a senior researcher at ARTICLE 19 focusing on the Middle East and North African (MENA) human rights issues and international corporate responsibility. She is also an Affiliate at the Berkman Klein Centre (BKC) at Harvard and an advisor at the Cyberlaw Clinic at Harvard.

At ARTICLE 19, Afsaneh continues to lead cross-country research on the impact of technology on LGBTQ people in the MENA uncovering how police and states use technology to target, harass and arrest the community based on their identity. Independently, she has conducted the first research on the use of digital evidence and legal frameworks in the prosecution of LGBTQ people in courts.

Her broader work and her research pose questions about the effects of technology in contexts it was not designed for and the effects of western-centrism on vulnerable and/or hard-to-reach communities. It also looks at how the power-holding corporations can be constructively engaged with.
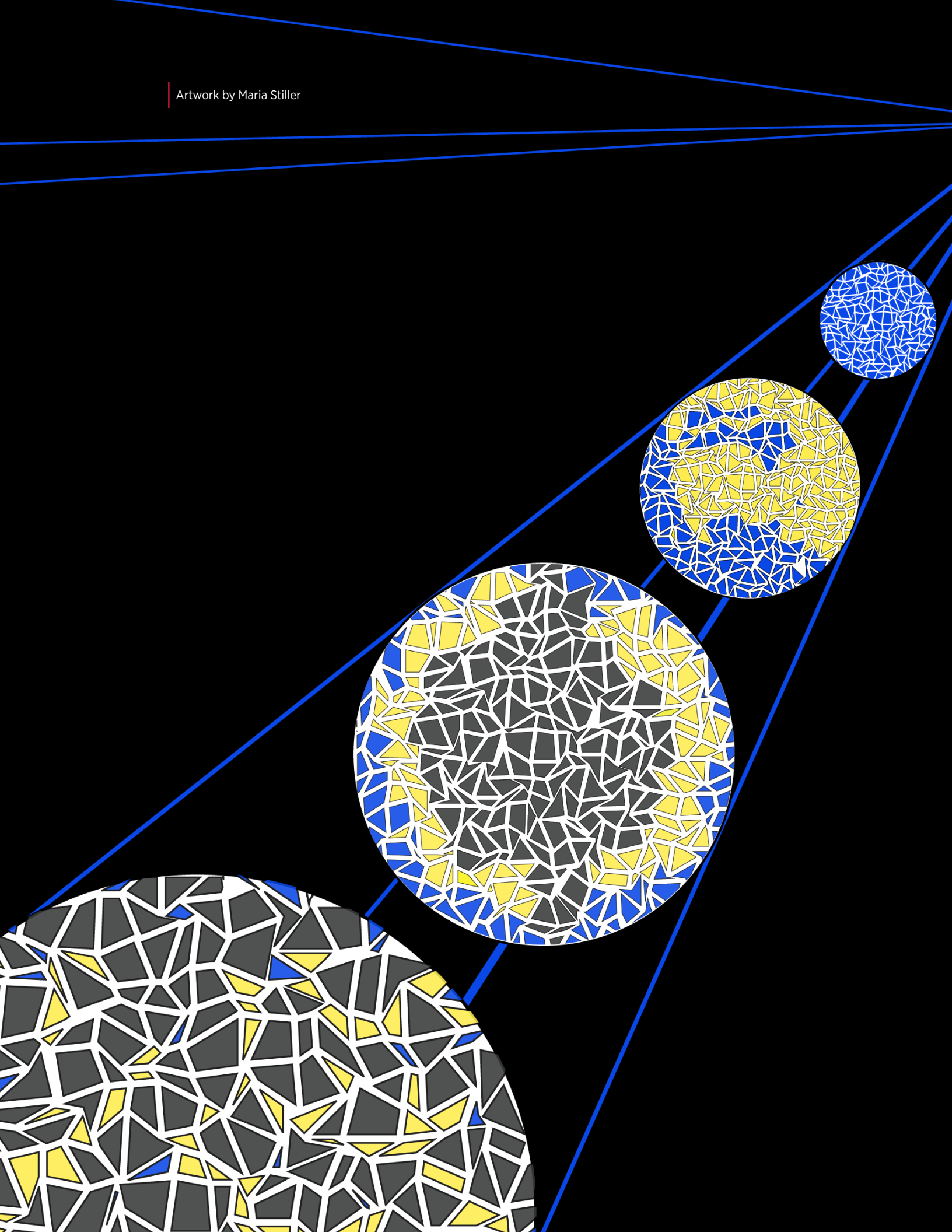
During her TAPP fellowship, Afsaneh will further develop her methodology and concept using experiences and knowledge in implementing company change with those most impacted centered. She looks to redefine how we design our major communication tools through, what she calls "designing from the margins": a methodology requiring a departure from structures and design processes that focus on the "main use cases." Her work will highlight the need to design based on those most impacted in mind (who would often be seen as 'edge cases'). The work refutes the often-repeated idea that due to business incentives, companies cannot be held to account and design practices cannot shift from the "biggest use cases", demonstrating that when impacted communities are effectively consulted, progress is possible.

Table of Contents

Artwork by Maria Stiller

Introduction

In an age of virtual connectivity and increased reliance on the internet for daily functions, including by marginalized groups,[1] can companies and technologists reframe their features or standards to support the most marginalized[2] users' needs? Can the modes of resilience within digital spaces from some of the most marginalized groups be listened to, learned from, and centered when creating technology? **Design From the Margins (DFM)**, a design process that centers the most impacted and marginalized users from ideation to production, pushes the notion that not only is this something that can and must be done, but also that it is highly beneficial for all users and companies. For this to happen, consumer interest conversations need to be framed outside the "biggest use case" scenarios and United States and European Union-centrisms and refocused on the cases often left in the margins: the *decentered cases*.

This report outlines how the DFM method can be used to build our most well-known and relied-upon technologies for decentered cases (often deemed "edge cases"[3] which is atypical or less common use case for a product) from the beginning of the design process, rather than retrofitting them post-deployment to cater to communities with what are perceived to be extra needs.

---

1   Due to communication needs outside or within the barriers place via things such as oppressive and discriminatory laws historical structures, social stigma and pandemics.

2   Marginalization is "[a] social process by which individuals or groups are (intentionally or unintentionally) distanced from access to power and resources and constructed as insignificant, peripheral, or less valuable/privileged to a community or "mainstream" society. This term describes a social process, so as not to imply a lack of agency. Marginalized groups or people are those excluded from mainstream social, economic, cultural, or political life. Examples of marginalized groups include, but are by no means limited to, groups excluded due to race, religion, political or cultural group, age, gender, or financial status. To what extent such populations are marginalized, however, is context specific and reliant on the cultural organization of the social site in question." Racialequitytools.org. 2021. *Racial Equity Tools Glossary*. [online] Available at: <https://www.racialequitytools.org/glossary> [Accessed 27 April 2022].

3   More on the definition below in Decentered Cases: A Decentered Design also see: Say Yeah!. 2022. *Glossary Archive — Say Yeah!*. [online] Available at: <https://sayyeah.com/glossary/#edge-case> [Accessed 6 April 2022].

From definition below in <u>Decentered Cases: A Decentered Design:</u> **Decentered** users who are identified *as those most at risk and under-supported in the contexts in question*. These groups are also usually the most criminalized compared to general users with many protections, other marginalized users and users with specific needs (who are generally protected). The name decentered plays with the notion that these users should not be at the margins but instead hold central power - they have not only been displaced from the center due to broader systems at play, but also by the companies and technologies in development and design processes. The term embodies the concept of movement, and a call for the de-centered to be moved to their rightful place at the center of these processes.

To that end, the theory presented within this research states that designing from the margins benefits all, and that what is created for the decentered cases will always be generalizable for the broader usership. This is a vital element of DFM. The established framework and design tailored for these cases can be finetuned and given to broader userbases, with the understanding that your tool, product, platform, feature is at its most robust if the metric of success is based around how it protects your most vulnerable and disenfranchised demographics. This requires in-depth research, contextual and nuanced understanding, and investment in building design and development teams that are not extracting from marginalized and vulnerable groups.

This means inclusion or diversity, as it now exists now as a corporate framework, is not sufficient: our move should work towards focusing and centering the needs of those most-impacted, most at-risk and those least consulted from ideation processes to production.

The *decentered* include subpopulations who are the most impacted and least supported; they are often those that face highest marginalization in society, without legal, social or political support structures. In turn, they are often the most criminalized and at risk of having technology weaponized against them. Communities in several different contexts that lack official infrastructures of protection and support adopt methods of self-protection in order to navigate the threats and risks they face. Their experiential knowledge of how tech products can be improved to keep

their communities safer, though, contains key insights for building better tools for everyone. After all, when your most at-risk and disenfranchised are covered by your product, we are all covered.

> *"We expect architects to design buildings and bridges to withstand gale force winds and heavy loads*[4]*: so too should we expect the companies whose products are the vehicle for free expression and access to information to design sensitive, resilient technologies for the benefit of all, whether they face government repression and social stigma or not. Design from the Margins could transform the apps and other technology products that now provide the infrastructure of our daily lives."*[5]

Still today, many technologies are built and then scaled in contexts they were not designed for; they are creating large-scale harms as they expand. There are strategies to reduce harms–especially human rights abuses that are carried out through the weaponization of technology–and increase user protections if design and development processes start from those "edge cases" or margins.. Designing from the margins is a method to reverse some of the power nexus between corporate will and "main user" focus so that we can design and develop technologies that are justice and rights forward, which results in the elevation of justice and rights for all users.

Design From the Margins and focusing on a *decentered* design process is not about increasing capitalistic profitability, but reducing tech-induced harms by removing focus from the ill-conceived stronghold of who is deemed the main power users[6] (however, as you will see below, by making your product more robust by focusing on marginalized community needs there remains a profit motive even if the latter is not the motivation. For once, this is gained not at the expense of their most marginalized users.) With this it is proposed that the real power users are the user bases who befall the structural flaws and blindspots of your systems and then become victims of how your tech is weaponized against them.

---

4   Although we should point out here that there are many buildings that are designed more for aesthetics and practicality rather than durability and safety and this is why regulators are involved in these instances.

5   A quote on DFM from Jessica Fjield, Harvard Law School Lecturer on Law and the Assistant Director of the Cyberlaw Clinic at the Berkman Klein Center for Internet & Society: https://twitter.com/jessicafjeld.

6   Abercrombie, R., 2022. *The Problem With Power Users - Usability Geek*. [online] Usability Geek. Available at: <https://usabilitygeek.com/problem-with-power-users/> [Accessed 5 April 2022].

Who is The Report's Target?

The call for a reimagining of these processes, from ideation to deployment, is not directed only to design teams in tech companies, but also to all who are involved in the process of building of these technologies: engineers, UX designers, policy leads, product managers, and others. Each player is key in how different parts of the product or tool are developed–each policy or code carries innumerable consequences of advantages, especially in a security or privacy context. Though some teams will be more involved than others, the broader issues and contexts should be provided to all aspects of the team.

I, the author of this report, am not a developer, designer or engineer. I am a researcher, advocate and practitioner focusing on the tech-related harms and human rights abuses stemming from a lack of privacy, and security. I have seen first-hand the dangers and impacts of ill-conceived or under-researched technologies on marginalized communities as they scale to contexts they were not designed for. I have worked with many communities, including my own, for years to find safety nets, mitigation methods and I have pushed for corporate changes. **This report is directed to technology builders from the vantage point that the security and privacy needs of the most marginalized user are missing in the design, development and deployments methods of our major technologies.**

Evolving Definition of Design From the Margins

The following words of scholar Kimberlé Crenshaw taught us a fundamental reimagining: the "goal [] should be to facilitate the inclusion of marginalized groups for whom it can be said: 'When they enter, we all enter.'"[7] The same idea is to be applied to the technology that frames and surrounds much of our lives: "When they are designed for, we are all designed for."[8]
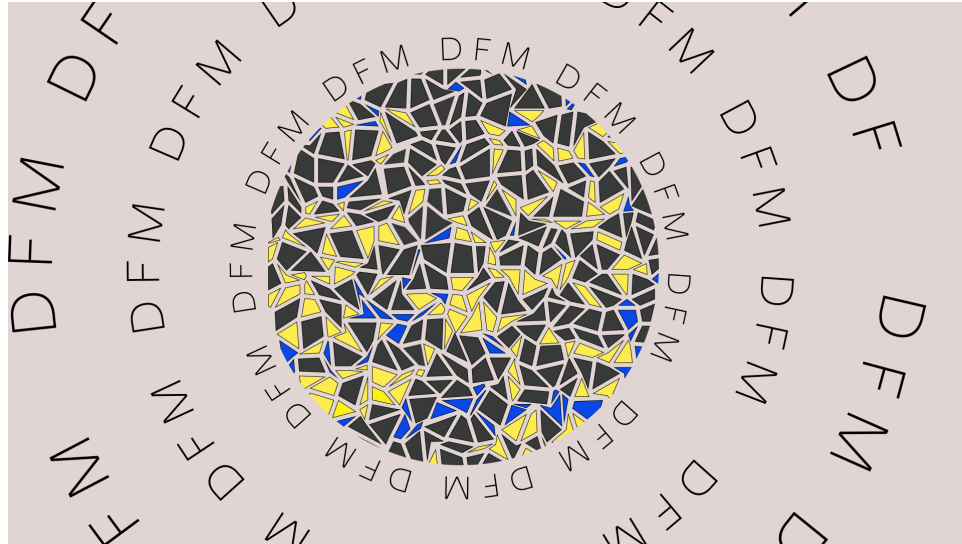
Image 1:   Design From the Margins. One of the working logos.

---

7   Crenshaw, Kimberle () "Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics," University of Chicago Legal Forum: Vol. 1989: Iss. 1, Article 8. Available at: http://chicagounbound.uchicago.edu/uclf/vol1989/iss1/8.

8   Via Kendra Albert and also reflective of Danielle Blunt's words and her work at Hacking//Hustling: collective of sex workers, survivors, and accomplices working at the intersection of tech and social justice (Hacking//Hustling. 2022. *About - Hacking//Hustling*. [online] Available at: <https://hackinghustling.org/> [Accessed 5 April 2022]): "when they're protected, we're all protected".

Concepts and Definition of DFM

Definition of *Design From the Margins* (noun): A design process that centers the most impacted and marginalized users from ideation to production, in order to expand the scope of user needs, experiences, and risk considered during the development of technologies. This is grounded in the knowledge that when those most marginalized are designed for, we are all designed for. Moreover:

- It is a process based on centering those most harmed by security and privacy issues, especially those communities that are hard-to-reach[9]. It requires broader focus than US and EU-centric groupings and demographics, as it acknowledges that some of the largest impacts of West-created technologies befall on countries and contexts they were not designed for.

- In DFM, design of technologies is not separate from the broader historical, political, social, and institutional contexts that surround and impact human interactions. They are designed with an understanding that technology is not neutral or an inherently positive force. Without an understanding of broader impacts and harms, technology perpetuates those harms, especially against those at the margins.

- DFM centers* the **"decentered"** (definition below). Through understanding and establishing who is most impacted by social, political and legal frameworks, we can also understand who would be most likely to be a victim of the weaponization of certain technologies. Often, the most marginalized are those most criminalized: these are the *decentered* cases.

---

9   Hard-to-reach is a contested terms, here it mainly refers to lack of efforts made by developers of tools to reach them especially due to hegemonic over-representation of other groups and the disenfranchisement of the historically oppressed.

- DFM is a methodology that means when the most-impacted "decentered" cases are identified, they should be designed for directly–not through retrofitting. The design that is established through meaningful creation with and for the decentered groups, is then given to the general user base.[10]

    *centering here means and requires placing of the needs, surrounding context, and wants of these groups in prime and detailed focus from the beginning of the process without watering down, and away from abstraction. As Timnit Gebru put it,"when we're extremely abstract and general the dominant group's vision gets implemented."[11]

When the groups – the decentered – who should be centered and designed for are identified, the process in which the design, development, and building is done with them is also very important. This is not the focus of this report; however, Professor Sasha Costanza-Chock's book[12] analyses and outlines some possible Design Justice methodologies and also outlines the necessity to move away from the extractive, raced and gendered power imbalances and extractive models that are often employed in many co-design and participatory design processes[13].

This cannot be achieved if those harmed are not adequately provided with, placed in positions of decision-making and power in the design process, and continued to be consulted as experts throughout deployment.[14]

Designing from the margins moves the process far away from 'move fast, break things' notions, as we can no longer afford to break our communities. Furthermore, investment in a vigorous reboot of these processes leads to innovation, sustained success, trust-building, and return on investment. It is

---

10   Of course, this does not suggest that it is always possible (or appropriate) to design one feature or product to address the needs of one highly impacted or marginalized group. It is however an imperative call that requires a more established understanding of social, political and legal impacts on these groups within different country and territorial contexts when building technologies.

11   Tom Simonite, quoting *Timnit Gebru* (9 September, 2021) available at: <https://twitter.com/tsimonite/status/1443252956472561664?s=21&t=IiVggtb21GkBWtr85OBdWQ> [Accessed 5 April 2022].

12   Costanza-Chock, S., 2022. *Sasha Costanza-Chock · PubPub*. [online] Design Justice. Available at: <https://design-justice.pubpub.org/user/sasha-costanza-chock> [Accessed 5 April 2022].

13   Costanza-Chock, S., 2020. *Design Practices: "Nothing about Us without Us"*. [online] Design Justice. Available at: <https://design-justice.pubpub.org/pub/cfohnud7/release/2> [Accessed 5 April 2022].

14   See also Pham, K., 2019. *Product, Society, and Ethics by Kathy Pham*. [online] Youtube.com. Available at: <https://www.youtube.com/watch?v=N7FGNujK_ME> [Accessed 27 April 2022].

therefore important that those involved in making these landscape-changing shifts are adequately compensated and consulted.

Importantly, the DFM learnings here are not an abstraction. Rather, they are based on a succesful implementation of the method and subsequent learnings from both marginalized communities (such as MENA queer and refugee communities) and some of our biggest tech companies. This report attempts to summarize and redistribute some of these learnings in the hope that a new method of centering these "extremes" becomes a norm or at least one of the consulted and trialed methods for design and development cycles. This report also comes from the vantage point of someone who is not based in the design and development world *per se* – and thus not obligated to industry terminologies and detailed technical outlines, but rather someone who has been documenting tech-related human rights abuses and harms for over a decade in a hope to push for better ideologies and in an attempt to bridge the gaps between industries and networks of marginalized communities so that the increasing harmful utilization of tech can be reduced.

Furthermore, building by centering the "extremes" is not a new concept, but rather a practiced norm in other industries as a vital methodology to ensure robustness. **So, it is not a question of whether this works, it is a question of why we have not been applying it to our (communication) technologies despite the global and vital impact they have.**

As we'll see in this document, design and development from the margins has led to innovative and industry shifting changes that also have revenue benefits for the companies involved. These new changes and tools have built trust with the companies and kept the apps relevant - but this time, not at the expense of their most marginalized users.

Design From the Margins[15] (DFM) is not solely a name of a methodology but also a call to reimagine how we design and create our technologies.[16]

The Global Impact On Those At the Margins

The design and development of technologies (especially communication technologies) cannot be divorced from the lived realities as this separation perpetuates the invisibilization and further marginalization of our most vulnerable communities. In effect, the harm of these technologies against communities at the margins becomes a (by)product of these technologies.

The power and reach of our technologies have an immense hold on the daily lives of many and have been molding many of our social, political and legal shifts. Today basic rights and physical safety of people become reliant on company decisions around policy, design, and enforcement as much as decisions made by elected officials. We see in daily instances the impact of tech on historically oppressed and marginalized groups, especially as this

15   In the research for this methodology in technology design, a number of other calls for action using this slogan or the variation of it have been identified holding the same ethos with varying methods of ensuring those more impacted are in the design process. This guide would like to play homage to them: One is the excellent toolkit by the Bellwether Education Partners called Designing From the Margins: Tools and Examples for Practitioners to Address Fragmentation and Build Equity Into Systems Design. This is a toolkit for practitioners in schools, districts, community nonprofits, and other child-serving agencies looking at how to include the most impacted members of the community in policy and care design, specifically for the education of children and social service community building. Read more of their great work here: https://bellwethereducation.org/publication/designing-from-the-margins-toolkit. Similarly, the slogan is also used by the powerful call for action by Professor Ceasar McDowell in a call on MIT. calling for the institution to take steps in becoming an anti-racist organization – becuase with the history institutional and historical racism and antiblackness that provails, direcity is not enough: Professor McDowell notes *"The idea here is that if you design an intervention or change to work for (and with) those who are most marginalized, then you inevitably cover them and those who are in the majority. Within the structure of the United States, it is blackness that defines the fundamental marginal group."* (McDowell, C., 2018. *Diversity is Not Enough*. [online] Web.mit.edu. Available at: <https://web.mit.edu/fnl/volume/305/mcdowell.html> [Accessed 5 April 2022].)

16   This outline specifically focuses on DFM for communication or social technologies.

tech is rarely, if ever, designed with them in mind. We've seen the impact on international queer communities[17], sex workers[18], Black & brown[19], indigenous, ethnic minority and immigrant communities[20], and the real lived digital and physical dangers and harms to them. From surveillance technologies used against refugee and immigrant communities[21], and biases and racist harms against Black people from facial recognition[22] and other AI technologies, to the use of digital evidence[23], dating apps[24] or even

17   Rigot, A., 2022. *Digital Crime Scenes*. [online] Berkman Klein Center. Available at: <https://cyber.harvard.edu/publication/2022/digital-crime-scenes> [Accessed 5 April 2022]. Burgess, M., 2022. *How Police Abuse Phone Data to Persecute LGBTQ People*. [online] Wired. Available at: <https://www.wired.com/story/lgbtq-phone-data-police/> [Accessed 5 April 2022]. Gebeily, M. and Asher-Schapiro, A., 2022. *Sentenced for a selfie: Middle East police target LGBTQ+ phones*. [online] Reuters. Available at: <https://www.reuters.com/legal/government/sentenced-selfie-middle-east-police-target-lgbtq-phones-2022-03-07/> [Accessed 5 April 2022].

18   Blunt, D., Wolf, A., Coombes, E. and Mullin, S., 2022. *Posting Into the Void: Studying the Impact of Shadowbanning on Sex Workers and Activists - Hacking//Hustling*. [online] Hacking//Hustling. Available at: <https://hackinghustling.org/posting-into-the-void-content-moderation/> [Accessed 5 April 2022]. Stern, S., 2022. *Rethinking Complicity in the Surveillance of Sex Workers: Policing and Prostitution in America's Model City*. [online] Papers.ssrn.com. Available at: <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3776576> [Accessed 5 April 2022].

19   Koenecke, A., 2020. *Racial disparities in automated speech recognition*. [online] PNAS. Available at: <https://www.pnas.org/doi/10.1073/pnas.1915768117> [Accessed 5 April 2022]. Douglas Heaven, W., 2020. *Predictive policing algorithms are racist. They need to be dismantled*. [online] MIT Technology Review. Available at: <https://www.technologyreview.com/2020/07/17/1005396/predictive-policing-algorithms-racist-dismantled-machine-learning-bias-criminal-justice/> [Accessed 5 April 2022]. Del Villar, A. and Hayes, M., 2021. *ACLU News & Commentary*. [online] American Civil Liberties Union. Available at: <https://www.aclu.org/news/privacy-technology/how-face-recognition-fuels-racist-systems-of-policing-and-immigration-and-why-congress-must-act-now/> [Accessed 5 April 2022]. Cumming-Bruce, N., 2020. *U.N. Panel: Technology in Policing Can Reinforce Racial Bias* (Published 2020). [online] Nytimes.com. Available at: <https://www.nytimes.com/2020/11/26/us/un-panel-technology-in-policing-can-reinforce-racial-bias.html> [Accessed 5 April 2022].

20   Minority Rights Group. 2020. *Global technology report warns of a bleak tech future for minorities and indigenous peoples - Minority Rights Group*. [online] Available at: <https://minorityrights.org/2020/10/05/global-technology-report-2020/> [Accessed 5 April 2022]. Mozur, P., 2019. *One Month, 500,000 Face Scans: How China Is Using A.I. to Profile a Minority (Published 2019)*. [online] Nytimes.com. Available at: <https://www.nytimes.com/2019/04/14/technology/china-surveillance-artificial-intelligence-racial-profiling.html> [Accessed 5 April 2022].

21   Korkmaz, E., 2020. *Refugees are at risk from dystopian 'smart border' technology*. [online] The Conversation. Available at: <https://theconversation.com/refugees-are-at-risk-from-dystopian-smart-border-technology-145500> [Accessed 5 April 2022]. Funk, M., 2019. *How ICE Picks Its Targets in the Surveillance Age (Published 2019)*. [online] Nytimes.com. Available at: <https://www.nytimes.com/2019/10/02/magazine/ice-surveillance-deportation.html> [Accessed 5 April 2022].

22   Buolamwini, J., 2022. *Gender Shades*. [online] Gendershades.org. Available at: <http://gendershades.org> [Accessed 5 April 2022]. Najibi, A., 2020. *Racial Discrimination in Face Recognition Technology - Science in the News*. [online] Science in the News. Available at: <https://sitn.hms.harvard.edu/flash/2020/racial-discrimination-in-face-recognition-technology/> [Accessed 5 April 2022].

23   Rigot, A., 2022. *Digital Crime Scenes*. [online] Berkman Klein Center. Available at: <https://cyber.harvard.edu/publication/2022/digital-crime-scenes> [Accessed 5 April 2022].

24   Human Rights Watch. 2020. *Egypt: Security Forces Abuse, Torture LGBT People*. [online] Available at: <https://www.hrw.org/news/2020/10/01/egypt-security-forces-abuse-torture-lgbt-people> [Accessed 5 April 2022]. Ganon, T., 2022. *Israel Police used Pegasus to track activist's secret use of gay dating app*. [online] CTECH - www.calcalistech.com. Available at: <https://www.calcalistech.com/ctech/articles/0,7340,L-3927606,00.html> [Accessed 5 April 2022]. ARTICLE 19. 2018. *Apps, arrests and abuse in Egypt, Lebanon and Iran - ARTICLE 19*. [online] Available at: <https://www.article19.org/resources/apps-arrests-abuse-egypt-lebanon-iran/> [Accessed 5 April 2022].

COVID contact tracing apps[25] to identify and arrest queer people. Our communication and social technologies often become weaponized against at-risk groups, creating large-scale harms and human rights abuses. This is because they are heavily relied upon, yet not created with these contexts in mind. With this frame, tech is often used to support the structures that oppress those most at-risk and most disenfranchised. The effects of these willful blind spots have not gone unseen and there has been an increasing push for change[26].

The broader contexts that impact the lives of individuals must be considered, especially if we want to stand a chance at mitigating the way certain technologies are reappropriated or used against at-risk and marginalized people. The development and design processes of our social and communication technologies cannot be divorced from the social, political, or legal frameworks and standards. It is an established norm

25   Strother, J., 2020. *South Korea's coronavirus contact tracing puts LGBTQ community under surveillance, critics say*. [online] The World. Available at: <https://theworld.org/stories/2020-05-22/south-korea-s-coronavirus-contact-tracing-puts-lgbtq-community-under-surveillance> [Accessed 5 April 2022]. United Nations OHCHR. 2021. *Message on Health and Justice*. [online] Available at: <https://www.ohchr.org/en/2021/07/message-health-and-justice?LangID=E&NewsID=27280> [Accessed 5 April 2022]. and Wareham, J., 2020. *U.K. Contact Tracing App Could Endanger LGBT Human Rights, Minorities Warned*. [online] Forbes. Available at: <https://www.forbes.com/sites/jamiewareham/2020/05/21/uk-nhs-contact-tracing-app-could-endanger-human-rights-lgbt-and-minorities-warned/?sh=4ccb466a6b9e> [Accessed 5 April 2022].

26   There are too many instances to cite here fully, but some examples include the United Nations' (UN) high commissioner on human rights memorandum on Artificial Intelligence: United Nations OHCHR. 2021. *Artificial intelligence risks to privacy demand urgent action – Bachelet*. [online] Available at: <https://www.ohchr.org/en/2021/09/artificial-intelligence-risks-privacy-demand-urgent-action-bachelet?LangID=E&NewsID=27469> [Accessed 6 April 2022]. and general work at the UN on technology and corporate accountability, for example with the B-Tech project: Business and Human Rights Gateway. 2022. *Addressing Business Model Related Human Rights Risks - Business and Human Rights Gateway*. [online] Available at: <https://humanrights.wbcsd.org/project/addressing-business-model-related-human-rights-risks/> [Accessed 6 April 2022]. ; Color Of Change's call on tech companies for race audits Nix, N., 2021. *Civil Rights Group Calls on Tech Giants to Conduct Race Audits*. [online] Bloomberg.com. Available at: <https://www.bloomberg.com/news/articles/2021-06-16/civil-rights-group-calls-on-tech-giants-to-conduct-race-audits> [Accessed 6 April 2022].; The Toronto Declaration on AI Toronto Declaration. 2022. *The Toronto Declaration • Toronto Declaration*. [online] Available at: <https://www.torontodeclaration.org/> [Accessed 6 April 2022].; calls to action by the Immigrant Defense Project 2022. *Immigration Defense Project*. [online] Available at: <https://www.immigrantdefenseproject.org/surveillance-tech-immigration-policing/> [Accessed 6 April 2022].; the Not Tech for Tyrants Campaign Notechfortyrants.org. 2022. *About*. [online] Available at: <https://notechfortyrants.org/about/> [Accessed 6 April 2022]., Mijente Mijente. 2022. *A digital and grassroots hub for the Latinx community*. [online] Available at: <https://mijente.net/> [Accessed 6 April 2022]. and No Tech For Ice Notechforice.com. 2022. *#NoTechForICE*. [online] Available at: <https://notechforice.com/> [Accessed 6 April 2022].; the Taming Tech policy by ARTICLE 19 ARTICLE 19. 2021. *International: A new policy to tame Big Tech and protect expression - ARTICLE 19*. [online] Available at: <https://www.article19.org/resources/international-a-new-policy-to-tame-bigtech-and-protect-expression/> [Accessed 6 April 2022].; The Santa Clara Principles On Transparency and Accountability in Content Moderation Santa Clara Principles. 2022. *Santa Clara Principles on Transparency and Accountability in Content Moderation*. [online] Available at: <https://santaclaraprinciples.org/> [Accessed 6 April 2022].; and many more.

that technology is not neutral[27] and continue to be shaped by the harms, inequities and biases in our own societies, whether or not it is intended in their development.

Today, we are at a vital juncture and radical change is necessary. We must have this radical change and design by not only designing with but rather *centering* the most impacted communities. This is vitally important for privacy, safety, and security issues: when we build and design for those most harmed by security and privacy issues, it gives us a more vigorous understanding of the threats underlying the infrastructures of our technology, as well as the impacts on vulnerable and/or hard-to-reach communities.

Development and Design Iceberg

For example, here, at the iceberg tip are the use cases considered during the product design phase. The cases would represent the ways a user is expected to interact with the product, and therefore defines the product features that are expected to be built. While accessibility is touched upon and thus slightly above the waterline, most "use cases" in this context are written using a "typical" user experience. This "typical" user experience is built on mainstream audiences i.e the privileged, often white user, often cis male - as opposed to ever being the decentralized edge cases. Since the Social, Legal and Political issues are not expected to apply to the "typical" user, these are not taken into consideration when designing the product.

27   United Nations OHCHR. 2022. Emerging digital technologies entrench racial inequality, UN expert warns. [online] Available at: <https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=26101> [Accessed 5 April 2022].
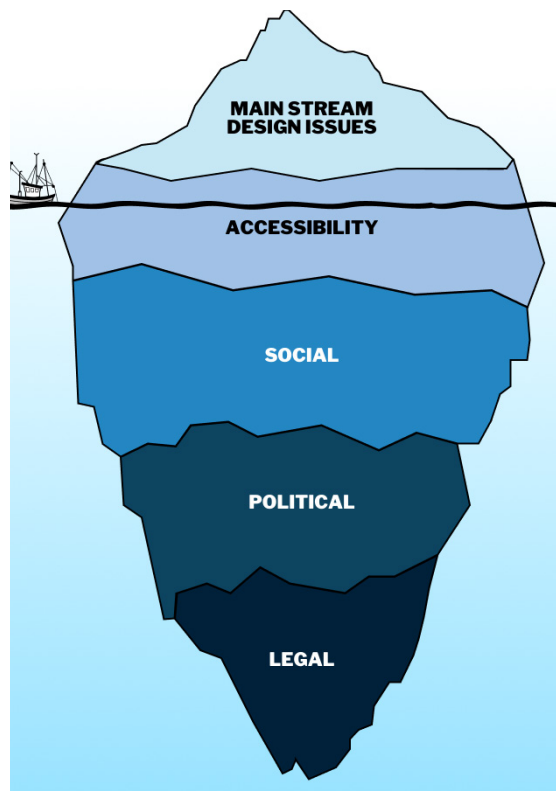
Image 2: Visualization of the design iceberg

As mentioned, slightly above the waterline of the line of vision for mainstream design processes has been the acceptance of accessibility – however this is often capitalistic in frame and still a long way away from adequate.[28] In respect to accessibility issues, disability justice frameworks are vital to adopt, which is not in the focus of this report and covered by experts in this field[29]. In cases of human rights abuses[30] and large scale harms, DFM is a method that can be applied.

What remains fully beneath the surface are fundamental issues that can create a question of whether or not specific people are likely to be placed under further harm. The social, political, and legal issues that impact individuals will not only affect how people use technologies but also how they are impacted by these technologies and how these technologies are used against them.[31] As mentioned, by understanding and establishing who is most impacted by social, political and legal frameworks, we can also understand who would most likely be a victim of the weaponization of certain technologies. Often, the most marginalized are those most criminalized: these are the decentred cases.[32] Underpinning all of this is the broader human and civil rights issues that must be assessed.

---

28   Alper, M., 2018. Can Technology Really 'Give Voice' to Disabled People?. [online] Pacific Standard. Available at: <https://psmag.com/social-justice/can-technology-really-give-voice-to-disabled-people> [Accessed 5 April 2022]. and Tucker, B., 2017. Technocapitalist Disability Rhetoric: When Technology is Confused with Social Justice | enculturation. [online] Enculturation.net. Available at: <https://www.enculturation.net/technocapitalist-disability-rhetoric> [Accessed 5 April 2022].

29   Costanza-Chock, S., 2022. Design Practices: "Nothing about Us without Us". [online] Design Justice. Available at: <https://design-justice.pubpub.org/pub/cfohnud7/release/2> [Accessed 5 April 2022].

30   This can include accessibility issues

31   These issues are often interlinked and combined with Matrix of dominations; Costanza-Chock, S., 2020. *Design Practices: "Nothing about Us without Us"*. [online] Design Justice. Available at: <https://design-justice.pubpub.org/pub/cfohnud7/release/2> [Accessed 5 April 2022].

32   Should note that this is not a PESTEL analysis framework.

- **Legal** - the legal issues that are important here are not the same issues that are usually considered in these design and development cycles which are often about the legal limitations and potential liabilities that a technology or company might face. Rather, DFM requires knowledge about legal structures that most impact the target (or untargetted) users of the technology for example, are there documented discriminatory laws or policies that impact the daily lives and the existence of these group, such as penal laws that criminalize sexuality, ethnicity, or race? Are they part of a group that have been structurally and historically oppressed through legal structures and provided with little to no legal protections? This is often hand-in-hand with criminalization.

- **Political** - linked to the above, it is vital to understand rapidly shifting political environments that bring about new and layered consequences for marginalized groups. A shift to more conservative stances (both politically and economically) and right-leaning stances increases risks to marginalized groups often in forms of policing, surveillance, and lack of support and infrastructure. This can also lead to more discriminatory laws and policies and human rights abuses. Further, in this context, it is also important to bear in mind geopolitics and shifting power nexuses that may affect, for example, increasing and stringent national security stances that target vulnerable or marginalized groups. Right-wing political rhetoric and populism have historically led to further clampdown[33] on marginalized groups, as seen during, for example the Donald Trump administration[34] in the US, Jair Bolsonaro rule in Brazil[35], Narendra

---

33   This is not to say under other administrations these groups are safe, unfortunately, militarization, imperialism and capitalistic tendencies ensure those who do not sit within the dominant circles or at the nexus of power and wealth continue to be at risk. These risks are, however, ever increasing under right-leading and populist political shifts. This is also not to say that members of minoritized groups do not support such political figureheads - communities are varied and complex. Yet, the risks for those at the margins, especially through criminalisation is often broadly felt.

34   For example The Leadership Conference on Civil and Human Rights. 2022. *Trump Administration Civil and Human Rights Rollbacks*. [online] Available at: <https://civilrights.org/trump-rollbacks/#> [Accessed 5 April 2022].

35   For example C B de Souza, A., 2022. *Jair Bolsonaro's administration is hurting the lives of LGBTQ+ sex workers in Brazil.* [online] The Conversation. Available at: <https://theconversation.com/jair-bolsonaros-administration-is-hurting-the-lives-of-lgbtq-sex-workers-in-brazil-173706> [Accessed 5 April 2022]. Nugent, C. and Regina, T., 2020. *How Black Brazilians Are Fighting Racial Injustice Today*. [online] Time. Available at: <https://time.com/5915902/brazil-racism-quilombos/> [Accessed 5 April 2022]. Miranda, D., 2022. *A Deadly Police Raid in Rio Show How Bolsonaro's Policies Are Wreaking Havoc in Brazil*. [online] Time. Available at: <https://time.com/6047032/jair-bolsonaro-crime-policies-brazils-favelas/> [Accessed 5 April 2022].

Modi of India[36], Abdel Fattah Al-Sisi in Egypt[37], Ramzan Kadyrov in Chechnya[38], Rodrigo Duterte[39] in the Philippines, Recep Tayyip Erdoğan[40] in turkey, Benjamin Netanyahu[41] in Israel, Xi Jinping in China[42]: all of these countries have seen or saw increased targeting of highly marginalized and thus criminalized groups. Understanding the specific local political context will allow us to identify and center those who are most at risk.

- **Social** - Social issues are about the conditions of the society and how they create access or different types of insecurity for individuals. They are highly important as they amount to the risks and harms individuals are faced with as well the resources (or lack thereof) they have access to to mitigate them. This includes access to health care and other issues related to healthcare, wealth inequality and/ or income inequality. Issues of cultural and social discrimination

36   For example Maizland, L., 2020. *India's Muslims: An Increasingly Marginalized Population*. [online] Council on Foreign Relations. Available at: <https://www.cfr.org/backgrounder/india-muslims-marginalized-population-bjp-modi> [Accessed 5 April 2022].

37   For example Human Rights Watch. 2020. *Egypt: Security Forces Abuse, Torture LGBT People*. [online] Available at: <https://www.hrw.org/news/2020/10/01/egypt-security-forces-abuse-torture-lgbt-people> [Accessed 5 April 2022]. and Hrw.org. 2022. *Egypt Crackdown on Civil Society | Human Rights Watch*. [online] Available at: <https://www.hrw.org/tag/egypt-crackdown-civil-society> [Accessed 5 April 2022].

38   For example Morello, C. and Sonne, P., 2020. *U.S. blacklists strongman of Chechnya for human rights abuses*. [online] The Washington Post. Available at: <https://www.washingtonpost.com/national-security/us-blacklists-strongman-of-chechnya-for-human-rights-abuses/2020/07/20/1a1b2d4a-caa6-11ea-89ce-ac7d5e4a5a38_story.html> [Accessed 5 April 2022]. Hasan, M., 2020. *Chechnya Is Trying to Exterminate Gay People. Our Silence Only Emboldens Vladimir Putin and Ramzan Kadyrov*. [online] The Intercept. Available at: <https://theintercept.com/2020/06/28/welcome-to-chechnya-gay-men/> [Accessed 5 April 2022].

39   For example The Washington Post. 2019. *Opinion: Rodrigo Duterte has accelerated the Philippines' slide toward authoritarianism*. [online] Available at: <https://www.washingtonpost.com/opinions/global-opinions/rodrigo-duterte-has-accelerated-the-philippines-slide-toward-authoritarianism/2019/07/28/b43e8d70-acb3-11e9-bc5c-e73b603e7f38_story.html> [Accessed 5 April 2022]. Hrw.org. 2022. *Philippines' 'War on Drugs' | Human Rights Watch*. [online] Available at: <https://www.hrw.org/tag/philippines-war-drugs> [Accessed 5 April 2022].

40   For example Human Rights Watch. 2021. *Turkey: Erdoğan's Onslaught on Rights and Democracy*. [online] Available at: <https://www.hrw.org/news/2021/03/24/turkey-erdogans-onslaught-rights-and-democracy#> [Accessed 5 April 2022]. Kingsley, P., 2019. *The World Condemns Erdogan's War on Kurds. But Turkey Applauds*. (Published 2019). [online] Nytimes.com. Available at: <https://www.nytimes.com/2019/10/16/world/europe/Turkey-Kurds-Erdogan.html> [Accessed 5 April 2022].

41   For example Human Rights Watch. 2021. *A Threshold Crossed*. [online] Available at: <https://www.hrw.org/report/2021/04/27/threshold-crossed/israeli-authorities-and-crimes-apartheid-and-persecution> [Accessed 5 April 2022]. France 24. 2021. *UN human rights body orders probe of 'systematic' abuses in Israel, Palestinian territories*. [online] Available at: <https://www.france24.com/en/middle-east/20210527-un-human-rights-body-orders-probe-of-systematic-abuses-in-israel-palestinian-territories> [Accessed 5 April 2022].

42   For example Reuters. 2021. *China's Xi responsible for Uyghur 'genocide', unofficial tribunal says*. [online] Available at: <https://www.reuters.com/world/china/chinas-xi-responsible-uyghur-genocide-unofficial-tribunal-says-2021-12-10/> [Accessed 5 April 2022]. Human Rights Watch. 2022. *China: Xi's 'New Era' Marked by Rights Abuses*. [online] Available at: <https://www.hrw.org/news/2022/01/13/china-xis-new-era-marked-rights-abuses> [Accessed 5 April 2022].

in all layers of life including racsim, homophobia, transphobia and the violence that perpetuates from these established social norms in different contexts. These issues are interlinked with the Legal and Political issues and also play a fundamental role in assessing who are the most marginalized and least protected in each context: in other words, who is included in the decentered cases.

Implementing DFM, the major issues that impact people must be considered in the development, engineering and design processes. Understanding of the broader issues that 1) impact daily lives of people 2) impact the harms and risks that endanger marginalized groups is fundamental. Technology will not remain neutral to the surrounding realities people face, and if they are designed with an absent consideration of the institutional and historical political, social and legal issues that impact those most marginalized and at risk, they are risking perpetuating the same harms (as we have seen many times before). How to take these issues into consideration can vary depending on context. A paradigm of issues to be assessed can work by addressing the political, social, and legal contexts at a minimum.

Of course, many companies adopt varying levels of this type of scoping, as well as inclusive and participatory design frameworks or other methodologies that often do not adequately provide for the decentered users.[43] Mostly, companies are forced to own up to the negative social impacts of their technology on people far beyond their targeted audiences and do some 'damage control' due to negative PR consequences or liability issues. Oftentimes, consultations are conducted after a feature, tool or product is already ideated or created when it is too late to create something meaningful for these groups.

---

43   This is why many calls for change and design practices have been pushed for by advocates and activists: United Nations General Assembly. 2022. R*eport of the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression*. [online] Available at: <https://www.undocs.org/Home/Mobile?FinalSymbol=A%2FHRC%2F32%2F38&Language=E&DeviceType=Desktop&LangRequested=False> [Accessed 5 April 2022]. Eye on Design. 2022. *We Need a New Approach to Designing for AI, and Human Rights Should Be at the Center*. [online] Available at: <https://eyeondesign.aiga.org/we-need-a-new-approach-to-designing-for-ai-and-human-rights-should-be-at-the-center/> [Accessed 5 April 2022]. Sinders, C., 2020. *Why We Need Human-Rights Centered Design | Adobe XD Ideas*. [online] Ideas. Available at: <https://xd.adobe.com/ideas/perspectives/social-impact/human-rights-centered-design/> [Accessed 5 April 2022]. Animikii.com. 2019. *Decolonizing Digital: The Future is Indigenous*. [online] Available at: <https://animikii.com/news/decolonizing-digital-the-future-is-indigenous> [Accessed 5 April 2022].

However, things are still far from adequate and designers of our major tools still predominantly focus on groups with the most institutional and hegemonic power. We're not designing for historically disinvested, oppressed, and marginalized folks, especially those outside of the "Western" frames of influence from the outset. Rather, we include them in the later stages of implementation or even just bring them in for some tickbox consultations when a tool is already made. These cases continue to be treated as edge - as low priority cases to be eventually dealt with.

Even when some consultation and meaningful implementation is done, the main focus remains US/EU centric and later scaled to broader context without adequate assessments. This is a harmful and colonial mentality of technology that has been hard to challenge. When the push has gone beyond the US/EU centric focus, the incentive is capitalistic profiteering and competition with "emerging markets". Yet, marginalized people outside these US/EU frames who rely on these technologies bear the highest brunt of the inadequate design practices. In these contexts, where the development and design process embodies western-centrism, tech has disproportionate impacts on vulnerable and/or hard-to-reach

communities. Human rights abuses via tech in these contexts are only responded to after the fact, when they could be reduced or avoided if technology was designed with these impacts in mind from the onset of the design and engineering process.[44] In applying DFM, the decentered cases must include or be outside the Silicon Valley US/EU imaginaries of the "user experience" ; this is not the experience of the majority, just those maintaining cultural hegemonyct.

Image 3:   **Silicon Valley dominance**

Image below draft of Silicon Valley US/EU centrism: Further, our tech is concentrated on US-created communication tech which are often designed for the US-EU users and pushed to other contexts without understanding of the risks and impacts.

44   United Nations General Assembly. 2022. *Report of the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression*. [online] Available at: <https://www.undocs.org/Home/Mobile?FinalSymbol=A%2FHRC%2F32%2F38&Language=E&DeviceType=Desktop&LangRequested=False> [Accessed 5 April 2022].

When They're Not Safe, We're All Unsafe: Impacted Communities

There are innumerable documented cases of large-scale harms and human rights abuses via technology. Major human rights organizations, such as Amnesty International[45], Human Rights Watch[46], and ARTICLE 19[47] have dedicated teams working on documenting and advocating against tech-related abuses. In the US and around the world the civil rights implications of tech are continuously being highlighted[48] throughout the years. Numerous UN bodies, Special Rapporteurs, and experts routinely urge businesses and states to respond to and mitigate tech related harm[49]. And the nature of issues ranges enormously depending on the technology in question and the geographical, historical, political, and/or legal contexts.

In some cases, everyday technologies and codes are weaponized and used against those at the margins, where if some the decentered cases had been built for, protection mechanisms would exist and at least some harms would be mitigated. In other cases, ideating and commencing any tech building process with those at the margins would have identified that certain technologies should not have been created, and the design, development, and deployment should have been challenged and halted: these are technologies that are discriminatory, invasive and perpetuate abuses by design.

Many technologies are built and then scaled in contexts they were not designed for: by that, it means scaled and advertised to countries and communities where no impact assessment, consultation, or risk assessment was provided to implement changes based on the needs of groups who are at-risk. For example, since the early 00s and more operationalized now,

45   Amnesty International. 2022. *Amnesty Tech | Amnesty International*. [online] Available at: <https://www. amnesty.org/en/tech/#disruptingsurveillance> [Accessed 5 April 2022].

46   Hrw.org. 2022. *Technology and Rights | Human Rights Watch*. [online] Available at: <https://www.hrw.org/ topic/technology-and-rights> [Accessed 5 April 2022].

47   ARTICLE 19. 2022. *What we do - ARTICLE 19*. [online] Available at: <https://www.article19.org/what-we-do/> [Accessed 5 April 2022].

48   Harrison, D., 2022. *Civil Rights Violations in the Face of Technological Change*. [online] The Aspen Institute. Available at: <*https://www.aspeninstitute.org/blog-posts/civil-rights-violations-in-the-face-of-technological-change/*> [Accessed 6 April 2022].

49   Digitalhub.ohchr.org. 2022. [online] Available at: <https://www.digitalhub.ohchr.org> [Accessed 6 April 2022].

we have seen the use of social and communication technologies for the surveillance, monitoring, entrapment, and arrest of LGBTQ individuals in countries where sexual identities are criminalized or highly stigmatized.[50] The content of their digital devices are used for prosecutions[51], as well as unpredictable violent crackdowns of large groups based on being queer and identifiable online[52]. The inadequate design of new technologies for facing global crises have lent a hand for further oppressions, such as some track tracing devices and their aid in LGBTQ arrests.[53] The same technology that the general public, including the most vulnerable and at-risk groups, depend on and use on a regular basis are weaponized by police against numerous communities: this includes the direct and violent confiscation and monitoring of their digital devices in refugee camps and prisons,[54] discriminatory searches of devices[55], raids[56], targeting

50   ARTICLE 19. 2022. *Apps, arrests and abuse in Egypt, Lebanon and Iran* - ARTICLE 19. [online] Available at: <https://www.article19.org/resources/apps-arrests-abuse-egypt-lebanon-iran/> [Accessed 5 April 2022]. Burgess, M., 2022. *How Police Abuse Phone Data to Persecute LGBTQ People*. [online] Wired. Available at: <https://www.wired.com/story/lgbtq-phone-data-police/> [Accessed 5 April 2022]. Fox, G., 2022. *Egypt police 'using dating apps' to find and imprison LGBT+ people*. [online] Independent. Available at: <https://www.independent.co.uk/news/world/middle-east/egypt-lgbt-gay-facebook-grindr-jail-torture-police-hrw-b742231.html> [Accessed 6 April 2022]. and also see Ganon, T., 2022. *Israel Police used Pegasus to track activist's secret use of gay dating app*. [online] CTECH - www.calcalistech.com. Available at: <https://www.calcalistech.com/ctech/articles/0,7340,L-3927606,00.html> [Accessed 6 April 2022].

51   Rigot, A., 2022. *Digital Crime Scenes*. [online] Berkman Klein Center. Available at: <https://cyber.harvard.edu/publication/2022/digital-crime-scenes> [Accessed 5 April 2022].

52   Ingber, S., 2019. *Activists Say 40 Detained And 2 Dead In Gay Purge In Chechnya Facebook Twitter Flipboard Email*. [online] Npr.org. Available at: <https://www.npr.org/2019/01/14/685192372/activists-say-40-detained-and-2-dead-in-gay-purge-in-chechnya> [Accessed 6 April 2022]. Alami, A., 2020. *Dozens of Gay Men Are Outed in Morocco as Photos Are Spread Online (Published 2020)*. [online] Nytimes.com. Available at: <https://www.nytimes.com/2020/04/26/world/middleeast/gay-morocco-outing.html> [Accessed 6 April 2022]. ARTICLE 19. 2022. *Egypt: Crackdown on LGBTQI people and their supporters must stop* - ARTICLE 19. [online] Available at: <https://www.article19.org/resources/egypt-crackdown-on-lgbtqi-people-and-their-supporters-must-stop/> [Accessed 6 April 2022].

53   Strother, J., 2020. *South Korea's coronavirus contact tracing puts LGBTQ community under surveillance, critics say*. [online] The World. Available at: <https://theworld.org/stories/2020-05-22/south-korea-s-coronavirus-contact-tracing-puts-lgbtq-community-under-surveillance> [Accessed 5 April 2022]. United Nations OHCHR. 2020. *UN rights experts fear Uganda is using COVID-19 emergency powers to target LGBT people*. [online] Available at: <https://www.ohchr.org/en/press-releases/2020/04/un-rights-experts-fear-uganda-using-covid-19-emergency-powers-target-lgbt?LangID=E&NewsID=25832> [Accessed 6 April 2022]. Wareham, J., 2020. *U.K. Contact Tracing App Could Endanger LGBT Human Rights, Minorities Warned*. [online] Forbes. Available at: <https://www.forbes.com/sites/jamiewareham/2020/05/21/uk-nhs-contact-tracing-app-could-endanger-human-rights-lgbt-and-minorities-warned/?sh=3d04970c6b9e> [Accessed 6 April 2022].

54   Reilly, C., 2022. *Disconnected and desperate: How Australia keeps refugees in tech limbo*. [online] CNET. Available at: <https://www.cnet.com/tech/mobile/how-australia-keeps-refugees-disconnected-refugee-crisis/> [Accessed 6 April 2022]. Rigot, A., 2022. *Digital Crime Scenes*. [online] Berkman Klein Center. Available at: <https://cyber.harvard.edu/publication/2022/digital-crime-scenes> [Accessed 5 April 2022].

55   Volz, D., 2017. *U.S. lawmakers introduce bill to limit phone searches at the border*. [online] Reuters. Available at: <https://www.reuters.com/article/us-usa-immigration-cyber/u-s-lawmakers-introduce-bill-to-limit-phone-searches-at-the-border-idUSKBN1762I3> [Accessed 6 April 2022].

56   Simon, M., 2020. *Investing In Immigrant Surveillance: Palantir And The #NoTechForICE Campaign*. [online] Forbes. Available at: <https://www.forbes.com/sites/morgansimon/2020/01/15/investing-in-immigrant-surveillance-palantir-and-the-notechforice-campaign/?sh=de7b155b7707> [Accessed 6 April 2022].

of refugees, immigrants, or undocumented persons[57] due to amplified xenophobia and populism; the continuing digital and combined manual policing in increasing militarized surveillance of communities of color[58]; monitoring censorship and targeting of sex workers with full immunity.[59]

In numerous states, especially under dictatorships, targeting at-risk groups provides a testing ground for new law enforcement tactics, often with the use of manual tactics combined with new technologies methods. This is seen in the LGBTQ arrests and targetings where new methods of using fake apps for monitoring and entrapment, and the use of digital evidence itself was tested on refugees and sex workers, before being spread against larger populations.[60] Could some of this have been mitigated if these highly at-risk, and least protected demographics of users were identified and designed for? The fault should not be placed solely on engineers or designers as to why there's a resistance in identifying and focusing on these cases. It is rather a symptom of capitalistic production and consumerism. Or simply, it is the good ol' "we just didn't intend for these things to happen as we didn't know". Sadly, not identifying these cases, and the engagement of "unintended" consequences has passed. The consequences are too grave.

There has been little to no accountability for the harms caused. We saw the atrocities that followed when Facebook (Meta) and other social media companies failed to protect marginalized people from disinformation and hate speech that has seen mass atrocities such as those faced by the Rohingya – a Muslim minority group – in Myanmar[61]. The issue emerges

57   Meaker, M., 2022. *Europe is using smartphone data as a weapon to deport refugees.* [online] WIRED UK. Available at: <https://www.wired.co.uk/article/europe-immigration-refugees-smartphone-metadata-deportations> [Accessed 6 April 2022].

58   Lane, J., 2020. *Police surveillance of Black Lives Matter shows the danger technology poses to democracy.* [online] The Conversation. Available at: <https://theconversation.com/police-surveillance-of-black-lives-matter-shows-the-danger-technology-poses-to-democracy-142194> [Accessed 6 April 2022].

59   Johnson, G., 2022. *Sex worker rights: Hysteria, surveillance and threats to fundamental freedoms.* [online] The Conversation. Available at: <https://theconversation.com/sex-worker-rights-hysteria-surveillance-and-threats-to-fundamental-freedoms-120943> [Accessed 6 April 2022]. Taylor, E., 2019. *Sex Workers Are at the Forefront of the Fight Against Mass Surveillance and Big Tech.* [online] Observer. Available at: <https://observer.com/2019/11/sex-workers-mass-surveillance-big-tech/> [Accessed 6 April 2022].

60   Rigot, A., 2022. *Digital Crime Scenes: How Police Use a Mosaic of Private Data to Persecute LGBTQ People in the Middle East and Northern Africa.* [online] Tech Policy Press. Available at: <https://techpolicy.press/digital-crime-scenes-how-police-use-a-mosaic-of-private-data-to-persecute-lgbtq-people-in-the-middle-east-and-northern-africa/> [Accessed 6 April 2022].

61   Global Witness. 2022. *New investigation shows Facebook approves ads containing hate speech inciting genocide against the Rohingya | Global Witness.* [online] Available at: <https://www.globalwitness.org/en/press-releases/new-investigation-shows-facebook-approves-ads-containing-hate-speech-inciting-genocide-against-rohingya/> [Accessed 6 April 2022].

in so many ways and continues to be seen in our continuing global pandemic and international political and economic crisis, or wars.

This misuse of technology expands to all parts of life and the living of it: for example, the use of online platforms, such as Twitter, Facebook, Instagram, and YouTube for Voter suppression where Black folks in the United States are targeted with misinformation through political advertisements, candidate support redirection, and turnout depression.[62] Amazon had to abandon an AI recruiting tool where the models were trained on resume data from the past 10 years with a dataset consisting mostly of white men. Thus, Amazon's recruiting tool taught itself that male candidates were preferable.[63] Facebook and other tech companies[64] have come under scrutiny and faced lawsuits for participating in illegal discrimination practices in their advertisement of housing, employment, and loans. Research has shown that the process used by Facebook's ad system can "skew" ad delivery[65] based on demographics due to market and financial optimization.

On top of design, deployment, and technology flaws, much policy drafting and even more so the implementation of these policies by companies have led to increased risks, marginalization and harms against groups unseen and at the margins (often intentionally). The provisions of FOSTA-SESTA[66] have notoriously led to wide-reaching discrimination and exclusion of sex workers from online spaces on innumerable platforms, as documented by Hacking//Hustling[67], requiring methods to organize and protect

62   Brennan Center for Justice. 2022. *The Impact of Voter Suppression on Communities of Color.* [online] Available at: <https://www.brennancenter.org/our-work/research-reports/impact-voter-suppression-communities-color> [Accessed 6 April 2022].

63   the Guardian. 2018. *Amazon ditched AI recruiting tool that favored men for technical jobs.* [online] Available at: <https://www.theguardian.com/technology/2018/oct/10/amazon-hiring-ai-gender-bias-recruiting-engine> [Accessed 6 April 2022].

64   Robertson, A., 2019. *HUD reportedly also investigating Google and Twitter in housing discrimination probe.* [online] The Verge. Available at: <https://www.theverge.com/2019/3/28/18285899/housing-urban-development-hud-facebook-lawsuit-google-twitter> [Accessed 6 April 2022].

65   Ali, M., Sapiezynski, P., Korolova, A., Mislove, A. and Rieke, A., 2019. *Discrimination through optimization: How Facebook's ad delivery can lead to skewed outcomes.* [online] Cornell University. Available at: <https://arxiv.org/abs/1904.02095> [Accessed 6 April 2022].

66   Albert, K. and Armbruster, E., 2020. *FOSTA in Legal Context.* [online] SSRN. Available at: <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3663898> [Accessed 6 April 2022].

67   Blunt, D. and Wolf, A., 2020. *Erased - The Impact of FOSTA-SESTA and the Removal of Backpage 2020 - Hacking//Hustling.* [online] Hacking//Hustling. Available at: <https://hackinghustling.org/erased-the-impact-of-fosta-sesta-2020/> [Accessed 6 April 2022]. Also see newly released: Albert, Kendra, Five Reflections from Four Years of FOSTA/SESTA (April 27, 2022). Cardozo Arts & Entertainment Law Journal, Forthcoming, Available at SSRN: https://ssrn.com/abstract=.

themselves from the threat of mass surveillance and online censoring in the wake of FOSTA-SESTA.[68] This is often seen in financial discrimination and impacts on citizens of sanctioned countries and sex workers – due to liability concerns, many companies have over compliance with provisions and algorithms expansively coded producing and policing categories of marginalization and controlling the flow of information and capital[69]. Overcompliance of Silicon Valley with sanctions policies, especially on Iran, has led to collective punishment of citizens, the curtailment of free expression, even of dissidents, and blockages for Iranians to access basic apps and tools, including circumvention technologies[70].

Those technologies that are discriminatory, invasive and perpetuators of abuses by design still continue to proliferate with little to no push-back. The uncurtailed and global-wide mass surveillance[71], harassment, targeting of refugees, immigrants, or undocumented persons continues to go unabetted, as seen with Amazon, LexisNexis[72], Vigilant Solutions, and Palantir who all working to provide data to ICE on refugees and migrants[73] combined with the use of artificial intelligence, military drones with facial recognition technologies, thermal imaging and fake cellphone towers to monitor migrants before they even reach the US-Mexico

68 Taylor, E., 2019. *Sex Workers Are at the Forefront of the Fight Against Mass Surveillance and Big Tech.* [online] Observer. Available at: <https://observer.com/2019/11/sex-workers-mass-surveillance-big-tech/> [Accessed 6 April 2022].

69 2021. *The Coding of Risk: From Sex Work to Sanctions.* [online] Available at: <https://www.youtube.com/watch?v=2WWh42lnxeY> [Accessed 6 April 2022].

70 Alimardani, M. and Paksad, R., 2019. *Silicon Valley preaches diversity and inclusion while excluding Iranians.* [online] Atlantic Council. Available at: <https://www.atlanticcouncil.org/blogs/iransource/silicon-valley-preaches-diversity-and-inclusion-while-excluding-iranians/> [Accessed 6 April 2022]. These sanctions and terrorist designations (that come from the same policies) have also led to the content moderation issues (this will be further outlined in later versions of this work). Berger, M., 2022. *Sanctions and Censorship are making the Internet in Iran Less Accessible.* [online] Available at: <https://www.washingtonpost.com/world/2022/01/13/iran-tech-sanctions-internet-access/> [Accessed 6 April 2022].

71 Rivlin-Nadler, M., 2019. *How ICE Uses Social Media to Surveil and Arrest Immigrants.* [online] The Intercept. Available at: <https://theintercept.com/2019/12/22/ice-social-media-surveillance/> [Accessed 6 April 2022].

72 The Intercept. 2021. *LexisNexus to Provide Giant Database of Personal Information to ICE.* [online] Available at: <https://theintercept.com/2021/04/02/ice-database-surveillance-lexisnexis/> [Accessed 6 April 2022].

73 Blog.mozilla.org. 2022. *How to Make Sure the Tech You Use and Build Reflects Your Values | The Mozilla Blog.* [online] Available at: <https://blog.mozilla.org/en/internet-culture/tech-reflects-values/> [Accessed 6 April 2022]. Simon, M., 2020. *Investing In Immigrant Surveillance: Palantir And The #NoTechForICE Campaign.* [online] Forbes. Available at: <https://www.forbes.com/sites/morgansimon/2020/01/15/investing-in-immigrant-surveillance-palantir-and-the-notechforice-campaign/?sh=1b4a2e9cb770> [Accessed 6 April 2022]. Paul, K., 2021. *Human rights groups call for an end to digital surveillance of immigrants.* [online] the Guardian. Available at: <https://www.theguardian.com/us-news/2021/jun/01/human-rights-groups-call-for-an-end-to-digital-surveillance-of-immigrants> [Accessed 6 April 2022].

border[74]. The Special Rapporteur on contemporary forms of racism, racial discrimination, xenophobia and related intolerance dedicated a 2020 report to the discriminatory and violent practices of new border technologies[75]. In refugee camps and prisons around the world where a myriad of loopholes exist that allow police and immigration authorities to run havoc, surveillance systems are used to monitor the moves of individuals[76] and deter migratory movements of those seeking refuge.

Racial bias in corporate algorithms[77] continues to harm communities of color. This is seen in a full spectrum of our internet infrastructure: in employment, housing, and loans[78] and algorithmic oppression[79] especially of structural and institutional racism faced by Black people that have now been re-enforced and coded into technologies[80] enlisting calls for "algorithmic reparations"[81] by advocates and scholars. We have Palantir to Ring, to body cameras and GPS databases, technology has transformed

74   Korkmaz, E., 2022. *Refugees are at risk from dystopian 'smart border' technology.* [online] The Conversation. Available at: <https://theconversation.com/refugees-are-at-risk-from-dystopian-smart-border-technology-145500> [Accessed 5 April 2022].

75   2021. *Advance Unedited Version: Racial and Xenophobic discrimination and the use of digital technologies in border and immigration enforcement.* [online] Human Rights Council. Available at: <https://www.ohchr.org/sites/default/files/2021-11/A_HRC_48_76_AdvanceUnEditedVersion.docx> [Accessed 6 April 2022].

76   Reilly, C., 2016. *Disconnected and desperate: How Australia keeps refugees in tech limbo.* [online] CNET. Available at: <https://www.cnet.com/tech/mobile/how-australia-keeps-refugees-disconnected-refugee-crisis/> [Accessed 6 April 2022]. Fallon, K. and Emmanouilidou, L., 2021. *With drones and thermal cameras, Greek officials monitor refugees.* [online] Aljazeera.com. Available at: <https://www.aljazeera.com/news/2021/12/24/greece-pilots-high-tech-surveillance-system-in-refugee-camps> [Accessed 6 April 2022]. Tazzioli, M., 2021. *Technologies of Expulsion: Rethinking Refugees' Carceral Economies Beyond Surveillance.* [online] Oxford Law Faculty. Available at: <https://www.law.ox.ac.uk/research-subject-groups/centre-criminology/centreborder-criminologies/blog/2021/11/technologies> [Accessed 6 April 2022]. Ahmed, K. and Tondo, L., 2021. *Fortress Europe: the millions spent on military-grade tech to deter refugees.* [online] the Guardian. Available at: <https://www.theguardian.com/global-development/2021/dec/06/fortress-europe-the-millions-spent-on-military-grade-tech-to-deter-refugees> [Accessed 6 April 2022]. Kovacevic, D., 2020. *Bosnian Police Search Migrant Camp After Armed Clash.* [online] Balkan Insight. Available at: <https://balkaninsight.com/2020/06/19/bosnian-police-search-migrant-camp-after-armed-clash/> [Accessed 6 April 2022].

77   Jansen Reventlow, N., 2022. *How Artificial Intelligence Impacts Marginalised Groups - Digital Freedom Fund.* [online] Digital Freedom Fund. Available at: <https://digitalfreedomfund.org/how-artificial-intelligence-impacts-marginalised-groups/> [Accessed 6 April 2022].

78   Harrison, D., 2020. *Civil Rights Violations in the Face of Technological Change.* [online] The Aspen Institute. Available at: <https://www.aspeninstitute.org/blog-posts/civil-rights-violations-in-the-face-of-technological-change/> [Accessed 6 April 2022].

79   2018. *Algorithms of Oppression: Safiya Umoja Noble.* [online] Available at: <https://www.youtube.com/watch?v=6KLTpoTpkXo> [Accessed 6 April 2022].

80   Mathews, A., 2022. *Scholar discusses solutions to New Jim Code.* [online] Technique. Available at: <https://nique.net/life/2022/02/14/scholar-discusses-solutions-to-new-jim-code/> [Accessed 6 April 2022].

81   Davis, J. L., Williams, A. and Yang, M. W. (2021) 'Algorithmic reparation', Big Data & Society. doi: 10.1177/20539517211044808.

policing — and incorporated the biases of its creators.[82] The increasing violations of rights through technology and their impact on communities of color[83]; and millimeter wave body scanners which foster and support established discriminatory treament of trans folks, Black and brown folks, and those visually coded as Muslim in airports.[84]

The weaponization of technology that is discriminatory by design can expand vastly due to focus on power and profits: similar facial recognition technology and algorithms are used by the Chinese government to profile ethnic minorities. It is integrated into China's surveillance camera system to track Uighurs, a Muslim minority who have been kept by the millions in detention camps.[85] Similarly the new emotion recognition software in China, for example, contains a plethora of human rights abuse implications.[86] Israeli made software FinFisher[87] selling spyware to the government of Ethiopia, and NSO group selling technology to countries like Saudi Arabia that was used to target journalists and activists worldwide[88].

82   Contreras, R., 2021. *Tech advances in policing can fight but also foster racial discrimination.* [online] Axios. Available at: <https://www.axios.com/technology-policing-and-racial-bias-bb0de2a2-0bce-4d40-a327-7a478bb16cb8.html?deepdive=1> [Accessed 6 April 2022].

83   Harrison, D., 2020. *Civil Rights Violations in the Face of Technological Change.* [online] The Aspen Institute. Available at: <https://www.aspeninstitute.org/blog-posts/civil-rights-violations-in-the-face-of-technological-change/> [Accessed 6 April 2022].

84   Remarks by Kendra Albert, presented at Emerging Issues in AI and Law Enforcement: Anticipatory policing, national security surveillance, and Constitutional Rights to Privacy, Technology Media and Privacy Law Conference, University of Florida Law School (March 2022).

85   Mozur, P., 2019. *One Month, 500,000 Face Scans: How China Is Using A.I. to Profile a Minority (Published 2019).* [online] Nytimes.com. Available at: <https://www.nytimes.com/2019/04/14/technology/china-surveillance-artificial-intelligence-racial-profiling.html> [Accessed 6 April 2022].

86   ARTICLE 19. 2022. *Emotion Recognition Technology Report - ARTICLE 19.* [online] Available at: <https://www.article19.org/emotion-recognition-technology-report/> [Accessed 6 April 2022].

87   Franceschi-Bicchierai, L., 2017. *Ethiopia Allegedly Spied on Security Researcher With Israel-Made Spyware.* [online] Vice.com. Available at: <https://www.vice.com/en/article/j5d8ng/ethiopia-allegedly-spied-on-security-researcher-with-israel-made-spyware> [Accessed 6 April 2022].

88   Human Rights Watch. 2021. *Unchecked Spyware Industry Enables Abuses.* [online] Available at: <https://www.hrw.org/news/2021/07/30/unchecked-spyware-industry-enables-abuses> [Accessed 6 April 2022].

Maintenance of data mining and brokering is also a continuous problem throughout the tech industry. Some companies hold that this data mining is used for operationalization or for compliance with their national jurisdictions' law enforcement and legal requirements. However this data brokering has at its core revenue profitability and expansion[89].

These numerous cases are only a tiny segment of the colossal issues we face, especially in respect to those at the margins. No small fixes can address the larger and deeply rooted structural issues that foreground how these technologies are deployed or weaponized. However, in centering, consulting, and understanding the legal, social, and political issues that impact decentered and marginalized groups some protections can be provided. Some of that mitigation might be in the form of identifying that certain technologies should not exist as they perpetuate harm by design. Even in these cases, if we consult with those groups who are most targeted, disenfranchised, marginalized and criminalized, we can build better organizing plans and strategies to challenge and navigate these technologies.
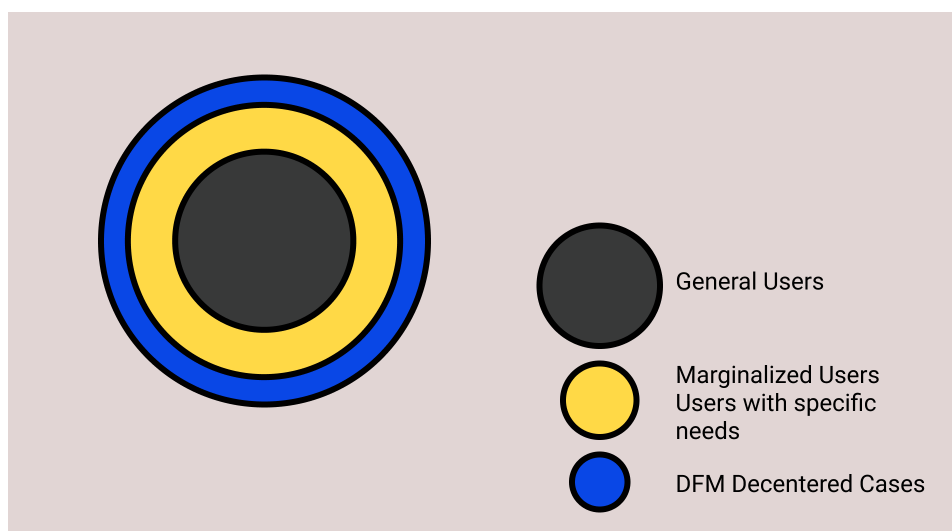
Decentered Cases: A Decentered Design

1. Definition of decentered cases

Decentered cases are ones that involve decentered users who are identified *as groups most at risk and under-supported in the contexts in question.* These groups are also usually the most criminalized compared to general users with many protections, other marginalized users and users with specific needs (who are generally protected). The name decentered plays with the notion that these users should not be at the margins but instead hold central power - they have not only been displaced from the center due to broader systems at play, but also by the companies and technologies. The term embodies the concept of movement, and a call for the de-centered to be moved to their rightful place at the center of these processes.

89   Hernandez, A., 2021. *Utility Giants Agree to Stop Selling Data to ICE But Some Loopholes Remain.* [online] WTTW News. Available at: <https://news.wttw.com/2021/12/16/utility-giants-agree-stop-selling-data-ice-some-loopholes-remain> [Accessed 6 April 2022]. Electronic Frontier Foundation. 2019. *EFF Sues AT&T, Data Aggregators For Giving Bounty Hunters and Other Third Parties Access to Customers' Real-Time Locations.* [online] Available at: <https://www.eff.org/press/releases/eff-sues-att-data-aggregators-giving-bounty-hunters-and-other-third-parties-access> [Accessed 6 April 2022]. Fix It Already. 2019. *Fix It Already.* [online] Available at: <https://fixitalready.eff.org/slack/#/> [Accessed 6 April 2022].

Image 4: **DFM key**

Thinking in forms of a spherical visualization of DFM decentered cases, in blue, are those identified as groups most at risk and under-supported in the contexts in question. These groups are also usually the most criminalized and comprise the outer layer (margins). The next layer consists of other marginalized groups and users who have specific needs but are generally protected and/or less at risk. The middle layer is populated by the mainstream users. Here the image shows the decentered cases are at the edges however, they contain the other layers – this symbolizes that when we design for the most marginalized, we encompass and are designing for all

In development, an "Edge Case"[90] is seen as an atypical or less common use case for a product. Edge cases are seen as more difficult to solve and as cases that impact fewer people. The "move fast, break things" ethos was also built on the belief that you can develop products for the masses without solving "Edge Cases". Even if we hear that our tech giants and Silicon Valley ethos has evolved past the "Move Fast, Break Things" era, "edge case"[91] thinking still embodies western-centrism and has disproportionate impacts on vulnerable and/or hard-to-reach communities. Reframing how we see an "edge case" becomes fundamental here.

90   Say Yeah!. 2022. *Glossary Archive — Say Yeah!.* [online] Available at: <https://sayyeah.com/glossary/#edge-case> [Accessed 6 April 2022].

91   Taneja, H., 2019. *The Era of "Move Fast and Break Things" Is Over.* [online] Harvard Business Review. Available at: <https://hbr.org/2019/01/the-era-of-move-fast-and-break-things-is-over> [Accessed 6 April 2022].

Although many designers and experts suggest moving away from "main use" cases (opposite of edge cases), there has not been a push to focus on those most at the margins: those without infrastructures of legal protection and those who are historically impacted by social and political oppression. In *Design for Real Life,* Eric Meyer and Sara Wachter-Boettcher suggest that designers depart from the concept and terminology of "edge cases" as it marginalizes users and their inherently complex human realities by seeing them as consumers. For example, certain features may cause emotional harm for everyday users in extreme circumstances and these need to be accounted for. They suggest redefining "edge cases" as "stress cases". But Meyer and Wachter-Boettcher do not go far enough as they are still concerned with the emotional circumstances of [presumably White, American] mainstream users that are commercially incentivisable and are still in the scope of the intellectual vision of creating these products. The cases I and many others are documenting are far more complex than this and are evidence of a much higher degree of harm towards groups that are not as commercially incentivisable and exist far outside the range of vision of technology designers.

These "edge cases" are often crucially informative, highlighting key needs for products across the board and are better seen as cases repositioned from their rightful spaces of importance and power. As such, I will be referring to these as decentered cases. How such cases are protected are a vital metric on how other users are protected. Referring to them as decentered rather than edge cases also signal a need to reposition these cases to a central point from the onset of the design and engineering processes of our communication technologies.
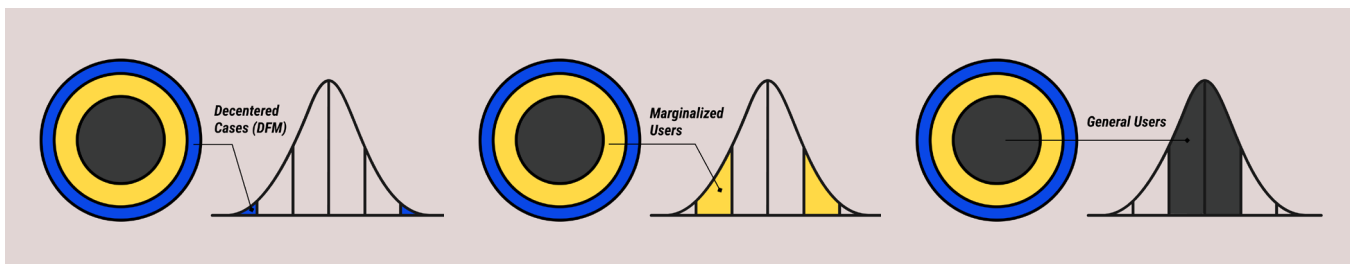
Image 5, 6, 7:   *In terms of numbers, imagine a curve graph: General users > marginalized users and/or users with specific needs (who are generally protected legally/ societally) > Decentered users are most at risk and under-supported, and are also usually the most criminalized and comprise the outer layer.* This is often why the "main" or "larger" user groups of a specific technology are designed for as they are a dominant segment of a company's income pool. The Decentered are often the least in number and thus left in the periphery. This is a pictorial representation of the status quo.

Bearing in mind the Legal, Political, and Social context and outlines laid out, the decentered cases are identified as being most impacted and least protected. They are often lower in number within a set population, but due to the risks that they face, have the most needs to be designed for – or more complex needs. Examples include: undocumented people, sex workers, indeginous, Black and brown people in improvrished areas in the US; queer people and ethinic minoroty dissedents in Iran; trans people and sex workers in Egypt; displaced Tigrayans in Ethiopia; migrant workers in the kafala system in the Gulf; dissidents in Saudi Arabia; Rohingya people in Myanmmar; indeginous communities in Australia and so on. In the outlines there are also general marginalized users or users with specific needs in yellow, and they are the second layer in this outline. Although they are facing structural issues that the generalized users do not face, they are generally protected and supported, i.e. not socially disenfranchised or face large scale criminalization.[92]

A lot of this knowledge is already accessible from community groups, NGOs, and subject experts. In employing this methodology, when doing user and broader research, the experts covering these issues who are part of or deeply connected to the communities should be consulted with experts from the ideation and broader research phases into the documentation carried out [more on identifying decentered cases below].

The reality is that addressing these cases and reframing them as central is not only about improving the design process. It is also about justice and addressing the human rights abuses that occur when technology is used in a context it was not designed for. It is about addressing the effects of western-centrism on vulnerable and/or hard-to-reach communities.

---

92   For example, in the US white women face layers of gender discrimination. however, they are generally protected by law and society, and are not largely criminalized. In fact, due to their placement of power in terms of race, they have caused the criminalization of Black folks (who are the decentered people in this context) especially in public spaces. Please see works by Apryl Williams, including this gem: Williams A. *Black Memes Matter: #LivingWhileBlack With Becky and Karen.* Social Media + Society. October 2020. doi:10.1177/2056305120981047 available at: <https://journals.sagepub.com/doi/full/10.1177/2056305120981047> [Accessed 6 April 2022]. Also take for example queer folks (generally not queer follks of colour) who live in contexts where they are legally and socially protected and in positions of power.

Digital Security and Privacy

In general, the design of privacy-preserving tools and security protocols does not have a set methodology.[93] Often they are built on an ad hoc basis, tailored towards individual use cases for problems in the financial technology and military domains, and then later repurposed to serve users outside this context. With this, many gaping holes in the protocols remain, especially for outside the military or financial complex estimations. Every security system is designed with a certain set of adversaries in mind, and systems designed for most high-risk and power-holding adversaries are more generalizable. For example, if the Design from the Margins methodology is used to identify and define the adversaries that privacy-preserving protocols protect against in high-risk harms and abuses faced by these adversaries, especially against those who hold the least level of official and political power, (for example a surveillance state), then we can be sure that the system will also cover and protect against weaker adversaries that arise in other contexts. When the protocol is robust enough against the highest threats, it often covers any other types of threats. In an effort to create more protections for decentered users, the collateral byproduct is better privacy protocols.

Even though mainstream users often do not have to worry as much about large scale harms and human rights abuses via tech, it is still important that their privacy is protected. Yet, because the safety, protection, and rights of these users are not breached as overtly or as arbitrarily, it would be harder to identify an appropriately high-risk adversary or their methodologies if we only focus on mainstream US-based users, for example.

On the other hand, If we design out adversaries around a surveillance methods used by the cyber police in Iran, or by Israeli intelligence against Palestinian activists and so on, we can design for the most powerful adversaries from the beginning, and build protocols that are ultimately safer for users in all contexts. Building from decentered cases provides for a better process in identifying major security holes that must be addressed in

---

93   There are many papers discussing privacy design, this standout work by Carmela Troncoso outlines issues (and recommendations) very clearly. For example, in the abstract it states "Nevertheless, the privacy community has not yet developed a general methodology that allows engineers to embed privacy-preserving mechanisms in their designs, and test their efficacy." Troncoso, C., 2011. *Design and analysis methods for privacy technologies* (Doctoral dissertation, Ph. D. thesis, Katholieke Universiteit Leuven).

order to build robust systems. Taking in a DFM methodology in building these protocols has potential to create highly robust and secure systems with real life experiences. It seems logical to consider the worst-case scenario first. Yet, most of those developing these tools or protocols do not do this and are not aware of the decentered cases that need to be considered. We can identify the larger holes and gaps in our systems by building them for those most marginalized, criminalized, who are the most likely targets for the weaponization of tech.

Issue of Corporate Responsibility

Designing and developing tools with an understanding of potential harms and human rights abuses is not about optimization or increased revenue (though the byproduct can lead to that), it is also about corporate responsibility. Corporations as a whole – and not only the legal and policy teams – have a responsibility to create safe products for those who rely on their products. The burden of protection should not be solely on users: UN standards make clear that companies have human rights responsibilities.[94] Companies must make the concerted effort to understand their users' environments and experiences, especially those most marginalized and impacted. As these technologies expand in use and importance, recognition of human rights responsibilities is critical. Businesses have an obligation to provide proactive protective, security, and safety measures to their users. Proper planning and assessment of how technologies are used might help mitigate some of the negative impact on users: while it is certain that there will still be some unforeseen consequences, there are initiatives, standards, and efforts which can and should be put in place to predict and minimize threats to users.[95] Providers therefore have a responsibility to protect the users of their products by implementing prevention and mitigation strategies. They must practice due diligence and make proactive efforts to support users in staying safe: Designing

---

94   For example, the UN Guiding Principles on Business and Human Rights Ohchr.org. 2021. [online] Available at: <https://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR_EN.pdf> [Accessed 22 December 2021].

95   The framework established in the UN Guiding Principles on Business and Human Rights (UNGPs) provides a valuable starting point and a minimum baseline for understanding the human rights responsibilities of business enterprises in the ICT sector. Team, O., 2022. *ODS HOME PAGE*. [online] Documents-dds-ny. un.org. Available at: <https://documents-dds-ny.un.org/doc/UNDOC/GEN/G16/095/12/PDF/G1609512. pdf?OpenElement> [Accessed 6 April 2022].

From the Margins can guide them towards accomplishing this difficult and important task.[96]

This is especially the case when these apps are functioning in countries in which there are higher risks to marginalized users. In fact, the UN Special Rapporteur on Freedom of Expression has clarified that for ICT companies (and tech companies in general), a proper process of due diligence requires considering the human rights impacts of "design and engineering choices."[97]

Case Studies of Designing for the Decentered

To bring DFM out of abstraction, I lay out some examples of its ability to bring about inventive and universally useful changes. While these changes do not address the institutional, legal, and historical roots of these harms and human rights abuses, they do provide some recourse to those impacted as well as optionality, safety, and innovation for all generalized users. Designing from the margins has collateral benefits to all of society.

Example One: Grindr and MENA Queer Users

I led a project and research[98] at ARTICLE 19 with local organizations in Iran, Lebanon, and Egypt (Spectrum[99], Helem[100], EIPR[101] and Rainbow

---

96   To date, the majority of UN frameworks also focus more on grievance procedures and how to handle human rights breaches after the fact. However there is an increasing need for mitigating breaches before human rights abuses occur.

97   David Kaye, Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression, Report to the UN Human Rights Council, May 2016, para 88 another note can be seen in the Toronto Declaration on Machine Learning Systems "Private sector actors have a responsibility to respect human rights; this responsibility exists independently of state obligations.12 As part of fulfilling this responsibility, private sector actors need to take ongoing proactive and reactive steps to ensure that they do not cause or contribute to human rights abuses – a process called 'human rights due diligence'".

98   Rigot, A., 2018. *Apps and traps: why dating apps must do more to protect LGBTQ communities*. [online] OpenGlobalRights. Available at: <https://www.openglobalrights.org/apps-and-traps-why-dating-apps-must-do-more-to-protect-LGBTQ-communities/> [Accessed 6 April 2022].

99   Home - Spectrum. 2022. *Home - Spectrum*. [online] Available at: <https://feministspectrum.org> [Accessed 6 April 2022].

100   Helem.net. 2022. *LGBTQIA+ Non-Profit Organization | Helem Lebanon | Home*. [online] Available at: <https://www.helem.net> [Accessed 6 April 2022].

101   Egyptian Initiative for Personal Rights (EIPR). 2022. *Egyptian Initiative for Personal Rights (EIPR)*. [online] Available at: <http://eipr.org> [Accessed 6 April 2022].

Egypt[102]) with support and research from international experts and technologists (such as Guardian Project[103], Norman Shamas[104], Dia Kayyali[105], Amnesty Tech[106], SMEX[107]) where we centered and worked with MENA LGBTQ communities, many of whom were from rural parts of each country studied or from doubly marginalized identities. We consulted with hundreds of individuals in Egypt, Lebanon and Iran for this research[108]. In US/EU design processes these cases would be deemed as the extreme scenarios/"edge cases" that were rarely engaged with. Yet, by focusing on these cases, we worked with Grindr (through a team led by Jack Harrison-Quintana[109]) to bring about[110] changes such as the "discreet app icons"[111] and a self-destruct PIN to Grindr[112].

One of the initial desiderata from those interviewed and surveyed was a way to hide the app in plain sight. A core documented scenario we based this on was:

- A queer Syrian refugee in Lebanon is stopped at a police or army check point for papers. They have their phone arbitrarily searched. The icon of a queer app, Grindr, is seen. This outs the individual as queer in the officer's eyes. Other parts of the individuals phone

102 Rainbow Egypt   . 2022. *Rainbow Egypt*   . [online] Available at: <https://rainbowegypt.org/> [Accessed 6 April 2022].

103 Guardian Project. 2022. *About Guardian Project.* [online] Available at: <https://guardianproject.info/> [Accessed 6 April 2022].

104 You can read their insights on the issues of queer dating app safety and work on the project here: Shamas, N., 2022. *Queer Dating Apps Need to Protect Their Users Better.* [online] Slate Magazine. Available at: <https://slate.com/technology/2018/02/queer-dating-apps-need-to-protect-their-users-better.html?via=gdpr-consent> [Accessed 6 April 2022].

105 You can find Dia on Twitter here and follow their broad range of work internationally: 2022. *Twitter - Dia Kayyali.* [online] Available at: <https://twitter.com/DiaKayyali> [Accessed 6 April 2022].

106 Amnesty International. 2022. *Amnesty Tech | Amnesty International.* [online] Available at: <https://www.amnesty.org/en/tech/> [Accessed 6 April 2022].

107 SMEX. 2022. *SMEX.* [online] Available at: <https://smex.org/> [Accessed 6 April 2022].

108 ARTICLE 19. 2018. *Apps, arrests and abuse in Egypt, Lebanon and Iran - ARTICLE 19.* [online] Available at: <https://www.article19.org/resources/apps-arrests-abuse-egypt-lebanon-iran/> [Accessed 6 April 2022].

109 2022. *Twitter - J. Harrison-Quintana.* [online] Available at: <https://twitter.com/jchq59> [Accessed 6 April 2022].

110 2020. *Twitter - Article 19.* [online] Available at: <https://twitter.com/article19org/status/1231913545333428224?s=20&t=G-UKMeYKcfY-VQK9oxgm6w> [Accessed 6 April 2022].

111 ARTICLE 19. 2017. *ARTICLE 19 partners with Grindr to improve protection of LGBT users - ARTICLE 19.* [online] Available at: <https://www.article19.org/resources/article-19-partners-grindr-improve-protection-lgbt-users/> [Accessed 6 April 2022].

112 Hudson, D., 2017. *Grindr to allow users in anti-gay countries to change Grindr icon on their phone to keep them safe.* [online] Gay Star News. Available at: <https://www.gaystarnews.com/article/grindr-icon-anti-gay-countries/> [Accessed 6 April 2022].

are also then checked, revealing what is deemed as "queer content". The individual is taken in for further interrogation and subjected to verbal and physical abuse. They now face sentencing under Article 534 of the Lebanese Penal Code and face potential imprisonment, fines and/or revocation of their immigration status in Lebanon.[113]

But what if this logo was hidden and an app indicating an individual's sexuality was not readily available to them? While still letting the individual keep the app and connection to other queer people? Based on the research and recommendations from it, Grindr worked with the codes and expertise provided by the Guardian Project[114], who had been developing such stealth modes, to make this concept a reality.

Other recommendations to Grindr and other partnering apps included (and continue to include):

- best practice outlines on mobile application security and API security;

- more creative and privacy respecting user verification models;

- unsend and disappearing messages to help ensure better secure communications especially against entrapping police fake profiles, and avoid backlogs of chat and photo data if devices are under inspection as well;

- blocking or providing alerts when another user takes a screenshot as police rely heavily on screenshots when using fake profiles to entrap queer individuals;

- providing more up-to-date, geolocation-based safety guides (instead of generic tips) that reflect country-specific laws, practices, events, with consistent feedback from local organizations;

- direct lines of communication in cases of arrest or emergencies via apps;

---

113   Rigot, A., 2022. *Digital Crime Scenes.* [online] Berkman Klein Center. Available at: <https://cyber.harvard.edu/publication/2022/digital-crime-scenes> [Accessed 5 April 2022].

114   Guardian Project. 2022. *About Guardian Project.* [online] Available at: <https://guardianproject.info/> [Accessed 6 April 2022].

- implementation of PINs for extra safety (including options to block access by a second PIN that initiates a freezing of the app instead of opening it) and panic buttons for moments of emergency to delete all the contents of an app that can lead to arrest and further prosecution after a device is searched; and others.

Changes such as the Discreet App Icon were game changers. This allowed people to use a feature that turns their app icon to look like a calendar, or calculator (and other variations). So, in an initial police search users can bypass that risk of being outed by the content or visuals of the apps they own. Branding efforts are typically considered a critical part of any corporate identity, and when we pushed to enable users to hide the Grindr logo to protect vulnerable people from device searches in countries that criminalize LGBTQ identies, it was clearly a very difficult request. This feature was created solely based on these "extreme" cases, but proved especially popular with their users globally, so popular that it went from only fully being available in "high risk" countries to available internationally for free[115]. People anywhere in the world have personal reasons to maintain their privacy. It should be noted that this was the first time a dating app took such radical security measures for its users and many followed suit.
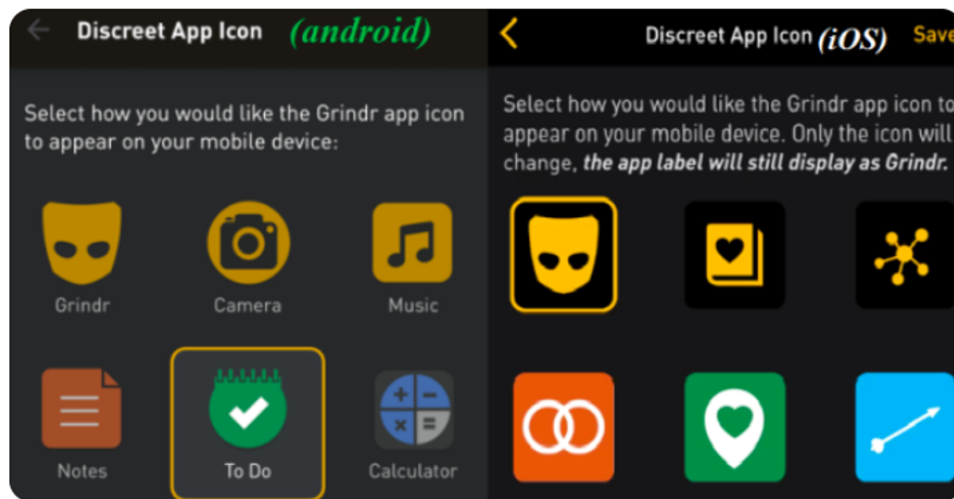
Image 8: **screenshot of Discreet App Icons**
Source: https://www.muchtech.org/2021/01/how-to-change-grindr-app-icon.html

115   Prnewswire.com. 2020. *Grindr Introduces Discreet App Icon Feature for All Users.* [online] Available at: <https://www.prnewswire.com/news-releases/grindr-introduces-discreet-app-icon-feature-for-all-users-301008211.html> [Accessed 6 April 2022].

In continuing to push more changes based on the original research and more, Grindr introduced a variety of new features[116] unprecedented for a dating app such as the option to time or "unsend" messages, timed or expiring photos, screenshot blocking for photos, chats, and profiles, and increased legal, digital, and physical security advice. Due to their importance and popularity most of these features are now deployed to their millions of users worldwide[117][118] These changes are harm reduction changes brought in to provide immediate safety to users in highly risky and often under reported contexts, to support in protecting them from arrest and physical harm, yet are now utilized by users worldwide, from NYC to São Paulo.

Internally in the company, the push was led by Jack. This required meetings with the context experts, technical experts to verify technical details; it also needed coordination with many teams or executives through presentations, memos, and other methods to mainstream the needs identified with the right people in the company. Importantly, there was a requirement for the checking and testing of the features with us throughout the process to ensure the implementation is accurate and refined. For example, beta versions of some of the features were demonstrated to us with an "is this what was imagined" ethos and we provided feedback. This was also possible because our recommendations to the companies always included how the recommendations needed to be implemented. The layout of the recommendations are always:

- **What does this recommendation mean?**
- **Why is this needed?**
- **How can this recommendation be implemented?**

---

116   Paul King, J., 2022. *Grindr Rolls Out New Feature for Countries Where LGBTQ Identity Puts Users at Risk.* [online] Washington Blade. Available at: <https://www.washingtonblade.com/2019/12/13/grindr-rolls-out-new-features-for-countries-where-lgbtq-identity-puts-users-at-risk/> [Accessed 6 April 2022].

117   2022. *Twitter - Article 19.* [online] Available at: <https://twitter.com/article19org/status/1231913545333428224?s=20&t=X4ecFs6FpT--iB1g63FlZA> [Accessed 6 April 2022].

118   This in turn increased their user counts and user trust. This of course is necessary in times where the company has lost the trust of many world-wide due data breaches/scandals. Arntz, P. and Arntz, P., 2021. *Grindr fined for selling user data to advertisers.* [online] Malwarebytes Labs. Available at: <https://blog.malwarebytes.com/reports/2021/12/grindr-fined-for-selling-user-data-to-advertisers/> [Accessed 6 April 2022]. Npr.org. 2022. *NPR Cookie Consent and Choices.* [online] Available at: <https://www.npr.org/sections/thetwo-way/2018/04/03/599069424/grindr-admits-it-shared-hiv-status-of-users> [Accessed 6 April 2022].

Ensuring adequate implementation of the recommendations is very important. It provides a valuable return in accurately accounting for the needs. The effort put into this led to undeniable results.

In an unpublished and ongoing research I'm continuing to lead at ARTICLE 19, along with excellent research assistants Senda Ben Jabara and Zoheir O, we are conducting similar research in 5 other countries (Tunisia, Jordan, Algeria, Morocco, and Sudan and continuing the research in Egypt, Lebanon, and Iran). One segment of our research includes a large survey. Looking at the 2000+ full responses thus far, we can report that currently on average 65% of the respondents decide which dating or social media apps to use based on whether they provide the above security measures.119 The most utilized safety methodology (over an average of 47% mentioned this method in each country) is the method of discreetly cloaking their apps. To do this, they use discreet app icons along with the option to time or unsend messages. Third highest option is deferring to deleting all apps when faced with a sufficiently big risk.120 The full outline and details of the research remains to be published. We will use these results to outline the impact of technology in the region on this marginalized and criminalized community. However, even the brief outline of 2 questions from the findings show the power of such changes for communities and how such optionality does affect what tools people decide to use.

Designing based on the needs and centering those most marginalized works. The experiences documented in the work were very remote to the conceptualisation of many, but it is a lived reality. It is perhaps seen as a very extreme scenario and most of the users of Grindr would never experience this. But these are the types of people using this technology who are the most at risk, socially, politically and legally: the arrest can lead to abuse, imprisonment and a loss of refugee status amongst other things. This is designing from the margins based on what's deemed "edge". It comes with more innovation and sustained growth but for once not at the expense of those often left forgotten.

---

119   The question outlines the specific features "such as app cloaking, PINs, direct lines of communication with local groups, timed pictures, and unsend messaging.". The full outline and details of the research remain for the publication of the research which looks to

120   The other options include: "I use a fake name," "I do not provide my picture," "I do not give my location," "I use a fake location (e.g. using a fake GPS)," "I do not mention the gender of the individuals I am attracted to," "I do not use any particular method to protect myself when using mobile dating apps or social media platforms" This research will be released in 2023.

Example Two: Queer Digital Crime Scenes and WhatsApp

Another similar and linked example is about the changes brought to disappearing messages on WhatsApp. From 2020 to 2022 I worked with frontline lawyers and defense attorneys in Lebanon, Egypt, and Tunisia, as well as local expert organizations working with and as part of LQBTQ communities in each country,121 to create a very detailed report on the prosecution of LGBTQ people and how digital private data was used as evidence against them: Digital Crime Scenes: The Role of Digital Evidence in the Persecution of LGBTQ People in Egypt, Lebanon and Tunisia.122 The purpose of the report is to document what has been happening systematically in the court systems, but it is also a document that outlines how general tools and platforms we use have become weaponized against this community.123 This includes entrapments on queer datings apps by police and informants as well as data gathered and collected from the device itself. It looks to also be a blueprint on how better security and harm reduction can be implemented.
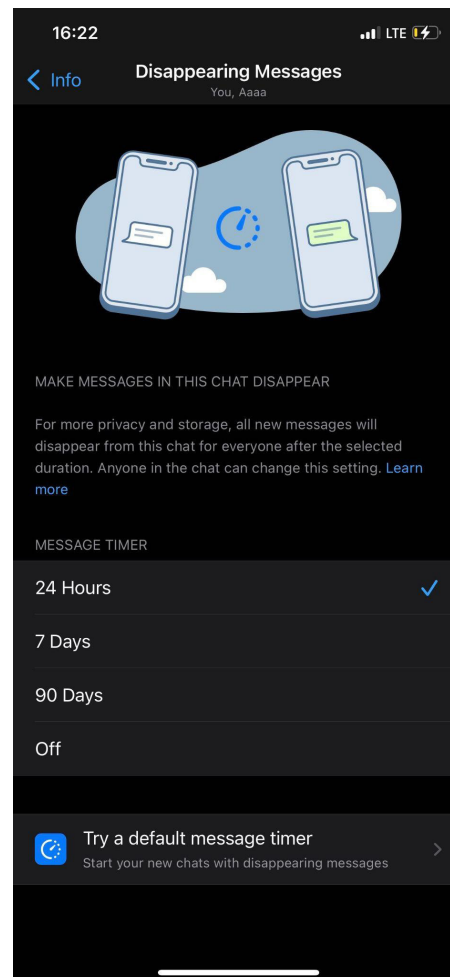
Image 9:   Screenshot of WhatsApp Disappearing Messages options.

---

121   such as Helem, Mawjoudin, Bedayaa, and Legal Agenda

122   Rigot, A., 2022. *Digital Crime Scenes.* [online] Berkman Klein Center. Available at: <https://cyber.harvard.edu/publication/2022/digital-crime-scenes> [Accessed 5 April 2022].

123   Rigot, A., 2022. *Digital Crime Scenes: How Police Use a Mosaic of Private Data to Persecute LGBTQ People in the Middle East and Northern Africa.* [online] Tech Policy Press. Available at: <https://techpolicy.press/digital-crime-scenes-how-police-use-a-mosaic-of-private-data-to-persecute-lgbtq-people-in-the-middle-east-and-northern-africa/> [Accessed 6 April 2022].

Importantly, the report highlighted the intense reliance on communication apps by police and prosecutors in these cases. 100% of my interviewees (the frontline lawyers) and the majority of the court files mentioned data used from WhatsApp. Earlier in 2021, I and my team at ARTICLE 19 had commenced conversations with the WhatsApp teams to inform them of the cases and the data being gathered for the report. There was a decision to privately share these findings before the publication of the report to see what urgent moves could be made and one of these was via a brief to WhatsApp. I provided some of the initial data and some of the recommendations that the lawyers and I outlined (based on work with the community and the previous ARTICLE 19 project recommendations124 to companies) about how to limit the amount of data being used and relied upon in these cases of LGBTQ arrests in MENA. You can see a rundown of the generalized version of these technical and practical recommendations on page 133-143 of the report.125

One recommendation in the private brief was titled: "Timed messages – Cases Require Swifter Action Than Seven Days" - recommending the need for more options to allow for timed messaging for safe messaging and to avoid a backlog of data on chats to remain and be used against individuals, including unsend or ephemeral options for photo and video sharing. In the recommendation directly to their team, it was outlined that the current disappearing messages options were not very useful in these cases. This was in reference to the changes in November 2020 when WhatsApp had introduced a 7 days option[126] for disappearing messages. The recommendation required more timing and general optionality for this, highlighting the risks outlined.[127] The brief outlined *"Sixteen of the lawyers interviewed mentioned the need for timed message deletion options (for longer and shorter periods than are allowable on WhatsApp). To them, this makes the gathering of data on queer individuals harder, especially as the*

124   Rigot, A., 2018. *Apps and traps: why dating apps must do more to protect LGBTQ communities.* [online] OpenGlobalRights. Available at: <https://www.openglobalrights.org/apps-and-traps-why-dating-apps-must-do-more-to-protect-LGBTQ-communities/> [Accessed 6 April 2022].

125   Rigot, A., 2022. *Digital Crime Scenes.* [online] Berkman Klein Center. Available at: <https://cyber.harvard.edu/publication/2022/digital-crime-scenes> [Accessed 5 April 2022].

126   Charlton, H., Hardwick, T., Fathi, S. and Clover, J., 2020. *WhatsApp Rolling Out Disappearing Messages Feature.* [online] MacRumors. Available at: <https://www.macrumors.com/2020/11/05/whatsapp-rolling-out-disappearing-messages-feature/> [Accessed 6 April 2022].

127   This is a private communique and remains so not to provide homophobic actors a blueprint of safety options for them to bypass in these cases.

criminalisation of queerness needs these types of evidence. The 7-days feature can support users against a bulking of evidence against them, however many are likely to have had conversation on the day or same week as their arrests that has led to their targeting."[128] The document also outlined some of the inceptions of Design From the Margins, pointing to the net gain of designing for those users who are highly marginalized and at-risk.

Whatsapp has been working on these findings and recommendations, understanding the needs and urgency of these cases for this highly marginalized and structurally criminalized community. In December 2021 they rolled out more disappearing messages options on WhatsApp[129]: 24 hours, 7 days, 90 days, and a default disappearing messages setting for all their users – again predominantly designed with the needs of these users at the forefront. In a statement for the ARTICLE 19 press release of the Digital Crime Scenes report, Kathryn Harnett WhatsApp Policy Manager who had been working to push changes internally said: "'*In line with Design From the Margins, we also believe that when you design with the most at-risk groups in mind, it benefits everyone,*' the company said, pointing out that it had also added '*end-to-end encrypted backups for additional security*' and provided other safety[130] tools."[131]

This might seem like a small change, but it has already been a big shift in how people use disappearing messages on WhatsApp. Signal has always been the secure alternative to WhatsApp with a lot of these functionalities, however Signal is not always available in certain countries[132]and realistically due to the ubiquitous nature of WhatsApp people use WhatsApp for their everyday communications around the world. For this, having such options and changes could be imperatively vital for millions

128   Ibid

129   WhatsApp.com. 2022. *WhatsApp Help Center - About disappearing messages.* [online] Available at: <https://faq.whatsapp.com/general/chats/about-disappearing-messages/?lang=en> [Accessed 6 April 2022].

130   WhatsApp.com. 2022. *WhatsApp.* [online] Available at: <https://www.whatsapp.com/safety> [Accessed 6 April 2022].

131   Rigot, A., 2022. *Digital Crime Scenes: How Police Use a Mosaic of Private Data to Persecute LGBTQ People in the Middle East and Northern Africa.* [online] Tech Policy Press. Available at: <https://techpolicy.press/digital-crime-scenes-how-police-use-a-mosaic-of-private-data-to-persecute-lgbtq-people-in-the-middle-east-and-northern-africa/> [Accessed 6 April 2022].

132   Ooni.org. 2021. *How countries attempt to block Signal Private Messenger App around the world.* [online] Available at: <https://ooni.org/post/2021-how-signal-private-messenger-blocked-around-the-world/> [Accessed 6 April 2022].

of users and especially those at risk where the content of their phones are used against them. In turn, the app now has more functionality which is useful in remaining relevant, its disappearing messages function is used more often by its users and can be applied to many contexts such as just general conversations people want to keep private or, for example, in cases of phone searches seen in Russia since the invasion of Ukraine.[133] Also, in a period where WhatsApp has lost masses of trust with its users due to numerous privacy issues[134], this is also a move towards upholding its own dedications to privacy, especially against its competitor, Signal. WhatsApp is also working on more features and updates in the same vein.[135]

WhatsApp has far more resources and infrastructure to implement this. They also have many more "general users" who become their *power users* or main user bases profitability-wise. So, if Whatsapp - a massive company that has over 2 billion users - can design for folks most impacted and at-risk (in this scenario), then there is no reason others of this scale cannot design for other *decentered cases. It is* a question of reprioritization, industry will and reconstruction on what is seen as *edge. [For the future stages of the DFM work, more guidance will be developed for smaller academic or start up projects]*

---

133   Balevic, K., 2022. *Moscow police are stopping people and demanding to read their text messages, reporter says*. [online] Business Insider. Available at: <https://www.businessinsider.com/russian-police-are-demanding-to-read-peoples-text-messages-reporter-2022-3> [Accessed 6 April 2022].

134   For example Statt, N., 2021. *WhatsApp to delay new privacy policy amid mass confusion about Facebook data sharing.* [online] The Verge. Available at: <https://www.theverge.com/2021/1/15/22233257/whatsapp-privacy-policy-update-delayed-three-months> [Accessed 6 April 2022].

135   WABetaInfo. *2022. WhatsApp beta UWP 2.2212.2.0: what's new? | WABetaInfo.* [online] Available at: <https://wabetainfo.com/whatsapp-beta-uwp-2-2212-2-0-whats-new/> [Accessed 6 April 2022].

Example Three: Airbnb and Racism

In 2016 Airbnb faced claims of rampant rasicm and many cases of discriminating against Black users.[136] A Harvard University study[137] found that Black individuals have a harder time finding rooms to rent through Airbnb than do white people, as on the review of their profiles their requests were less likely to be accepted than white guests: "[Black guests] where roughly 16 percent less likely to be accepted as guests than those with distinctly white names."[138] A federal lawsuit was filed against Airbnb for descrimination against Black guests in 2016.[139] Of course, the design of the platform had not taken into concideration how to protect their users from racism and discrimination when one of the main premises of their functionality includes possible renters submitting an application to be reviewed by owners. Discrimination against folks of color in renting is a historic and prevalent issue[140] that should have been centered and designed for.

In 2016, Airbnb responded by hiring national civil liberties and civil rights expert Laura Murphy (former director of the ACLU) as a senior advisor to focus on providing for users of color and particularly Black users. Her task was to aid the company in updating its anti-descrimination policies and inform changes. Her work with Airbnb became a significant and innovative success.[141]

136   Glusac, E., 2016. *As Airbnb Grows, So Do Claims of Discrimination (Published 2016).* [online] Nytimes. com. Available at: <https://www.nytimes.com/2016/06/26/travel/airbnb-discrimination-lawsuit.html> [Accessed 6 April 2022].

137   Edelman, B., Luca, M. and Svirksy, D., *2016. Racial Discrimination in the Sharing Economy: Evidence from a Field Experiment.* [ebook] American Economic Journal: Applied Economics. Available at: <https://www. benedelman.org/publications/airbnb-guest-discrimination-2016-09-16.pdf> [Accessed 6 April 2022].

138   Glusac, E., 2016. *As Airbnb Grows, So Do Claims of Discrimination (Published 2016).* [online] Nytimes. com. Available at: <https://www.nytimes.com/2016/06/26/travel/airbnb-discrimination-lawsuit.html> [Accessed 6 April 2022].

139   Scribd. 2016. *Selden v. Airbnb - Complaint 2016-05-18 | PDF | Diversity Jurisdiction | Lawsuit.* [online] Available at: <https://www.scribd.com/document/313056929/Selden-v-Airbnb-Complaint-2016-05-18> [Accessed 6 April 2022].

140   Desmas, J., 2021. *Black and Hispanic renters experience discrimination in almost every major American city.* [online] Vox. Available at: <https://www.vox.com/22815563/rental-housing-market-racism-discrimination> [Accessed 6 April 2022].

141   Penn, C., 2020. *Meet The Black Woman and Civil Rights Activist Behind Airbnb's Battle Against Discrimination On the Platform.* [online] Essence. Available at: <https://www.essence.com/lifestyle/travel/black-woman-laura-murphy-civil-rights-airbnb-discrimination/> [Accessed 6 April 2022].

Murphy made it a point of bringing Black employees and civil rights leaders into the process of tackling race relations and crafting the new race anti-descrimination policy. By centering folks of color in the design process, major progress was made.142 Their team introduced, amongst other changes, the option of 'instant booking', a function we all now rely on on the app. Their updated report from 2016 stated: "Instant Book allows certain listings to be booked immediately—without prior host approval of a specific guest. Airbnb will accelerate the use of Instant Book with a goal of making one million listings bookable via Instant Book by January 2017."143

They also suggested and encouraged users to go beyond photos: "Profile photos help hosts and guests get to know one another and can serve as an important security feature. At the same time, some have asked Airbnb to remove profile photos from the platform. Airbnb's new product team dedicated to fighting discrimination will experiment with reducing the prominence of guest photos in the booking process and enhancing other parts of host and guests profiles with objective information."

Both of these innovative features were focused on reducing avenues for discrimination against users, but ended up benefitting everyone trying to book on the app: instant booking makes the booking process more efficient and easy and prevents against arbitrary decision making. Again, something created for those most impacted and marginalized has become an important feature for all. Imagine the harms that could have been avoided if much of the design and development had initially been done based on users who were most impacted. This does not cover for all harms Airbnb has been a leading part of, such as mass gentrification and their part in increased housing prices and many other layers of large scale harm. Whether or not they will or are working with communities harmed to alter their business model and economic harms is unclear (and unlikely). However, the example is a nod to the power in enlisting the right experts and focusing on the right communities.

---

142   Murphy, L., 2016. *Airbnb's Work to Fight Discrimination and Build Inclusion.* [online] Blog.atairbnb.com. Available at: <https://blog.atairbnb.com/wp-content/uploads/2016/09/REPORT_Airbnbs-Work-to-Fight-Discrimination-and-Build-Inclusion_09292016.pdf> [Accessed 6 April 2022].

143   Murphy, L., 2016. *Airbnb's Work to Fight Discrimination and Build Inclusion.* [online] Blog.atairbnb.com. Available at: <https://blog.atairbnb.com/wp-content/uploads/2016/09/REPORT_Airbnbs-Work-to-Fight-Discrimination-and-Build-Inclusion_09292016.pdf> [Accessed 6 April 2022].

Example Four: Meta Platforms, Inc.'s Lite Applications

Another good example of designing for context and folks outside the US/EU context and especially at-risk and disenfranchised groups is the example of Facebook Lite Applications. Although the full intention behind the application is not clear, it seems to have been created to tailor for populations with lower levels of internet access, who are sensitive to price and bandwidth of mobile data usage. 65% of emerging market populations144 are online, compared to 90% in North America, according to Facebook estimates.145 Meta has therefore launched several "Lite" versions of its applications in an effort to cater tousers in emerging markets,146 beginning with the launch of Facebook Lite, in 2015. This is currently available in North America, parts of Asia, South America, Africa, and Europe and has over 200 million active users per month. **Instagram Lite** launched March 10, 2021147 and went live in 170 countries, including countries that also deal with lower bandwidth access and government censorship of social media148 often requiring them to access these platforms via Virtual Private Networks(VPN)149 making speed and bandwidth issues even more of an issue for users.

---

144   Fancy business terminology to refer to countries outside the North America or EU that have strengthening markets, such as India, Mexico, Russia, Pakistan, Saudi Arabia, China, and Brazil.

145   2022. *Internet World Stats.* [online] Available at: <https://www.internetworldstats.com/stats.html> [Accessed 6 April 2022].

146   Lunden, I., 2021. *Facebook Targets Emerging Markets with Instagram Lite.* [online] Techcrunch. com. Available at: <https://techcrunch.com/2021/03/10/facebook-targets-emerging-markets-with-instagram-lite-a-new-android-app-that-takes-up-just-2mb-in-170-countries/?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS88&guce_referrer_sig=AQAAAKa1b7aPUg-po3UGTKGGJ_vTxdc_dmqTSV3yUZcJb_NVrPc8vO8iUqG7diTtsufGM8S9uczrvAi-9w74ZC8VKfFLABjbKfbxg0_pIAfLqNIcykRAAj9FovxELxgJ59XgfvRXC0Jwf0QPxbHHTWa7yOthFvhKkauOaF4B7-FBifFj> [Accessed 6 April 2022].

147   Chaney, S., 2021. *Instagram vs. Instagram Lite: What Are the Differences?.* [online] MUO. Available at: <https://www.makeuseof.com/instagram-vs-instagram-lite-differences/> [Accessed 6 April 2022].

148   Such as Iran, China, or Turkamanistan; Barry, E., 2022. *These Are the Countries Where Twitter and Facebook Are Banned.* [online] Time. Available at: <https://time.com/6139988/countries-where-twitter-facebook-tiktok-banned/> [Accessed 6 April 2022].

149   Roach, J. and Hardy, A., 2022. [online] Forbes.com. Available at: <https://www.forbes.com/advisor/business/software/what-is-a-vpn-and-how-does-it-work/> [Accessed 6 April 2022].

Facebook Lite can work under 2G conditions, and uses 10MB of space on the user's phone (compared to the 167MB that the original Facebook application uses). Instagram Lite takes up only 2MB of space on a phone (compared to 30MB for the original Instagram application). There is also a Lite version of Facebook messenger, which is available for both Android and iOS.

Such an option provides accessibility for so many – from those living under information controls and censorship, to anyone without a high income and capacity for high bandwidths of mobile data usage. Even beyond that, who doest want access to their favorite social media application eating away at data allowances? Designing tools like this really improves the lives of the many.

Example Five: Facebook Takes Steps to Protect Vulnerable Users in Myanmar

Before jumping into this example, it is important to outline the devastation that Meta Platforms, Inc.'s Facebook brought upon the Muslim minority group, the Rohingya, in Myanmar. Many rights groups and experts and a recently legal action in the US and the UK[150] have pointed out that their flawed and negligent algorithmic recommendation design and deeply flawed content moderation (or lack of) facilitated the genocide of Rohingya Muslims in Myanmar[151] after the social media network's algorithms amplified hate speech and failed to take down inflammatory posts. More than 730,000 Rohingya Muslims fled Myanmar's Rakhine state in August 2017 after a military crackdown that refugees said included mass killings, burning of villages, and rape of Rohingyas in the country.[152]

The issues around Facebook's content recommendations, moderation and algorithms have been a subject of controversy, even internally.[153] Yet, while campaigning research and work is being done to shift the harms, and hold Meta accountable, immediate action was needed in Myanmar when protests erupted once more. In February of 2021, in opposition to the military junta's takeover of the country, protestors faced violence and deadly retaliation. The military has detained and killed thousands of protestors since.

Making changes based on the needs of the people of Myanmar, Facebook announced in April of 2021[154] that it will provide safety features for its users in Myanmar in an attempt to protect them from military surveillance

150   Milmo, D., 2021. *Rohingya sue Facebook for £150bn over Myanmar genocide.* [online] the Guardian. Available at: <https://www.theguardian.com/technology/2021/dec/06/rohingya-sue-facebook-myanmar-genocide-us-uk-legal-action-social-media-violence> [Accessed 6 April 2022].

151   the Guardian. 2020. *Myanmar's genocide against Rohingya not over, says rights group.* [online] Available at: <https://www.theguardian.com/world/2020/nov/23/myanmar-is-still-committing-genocide-against-rohingya-says-rights-group> [Accessed 6 April 2022].

152   Culliford, E., 2021. *Rohingya refugees sue Facebook for $150 billion over Myanmar violence.* [online] Available at: <https://www.reuters.com/world/asia-pacific/rohingya-refugees-sue-facebook-150-billion-over-myanmar-violence-2021-12-07/> [Accessed 6 April 2022].

153   Engadget.com. 2020. *Facebook's own research warned its algorithms exploit 'divisiveness'.* [online] Available at: <https://www.engadget.com/facebook-resisted-efforts-to-be-less-divisive-report-203314601.html> [Accessed 6 April 2022].

154   Frankel, R., 2021. *An Update on the Situation in Myanmar | Meta.* [online] Meta. Available at: <https://about.fb.com/news/2021/02/an-update-on-myanmar/> [Accessed 6 April 2022].

and arrest via information gathered on them on the platform.[155] These new features gave users the ability to keep non-friends from accessing their profile, prevent non-friends from seeing timeline posts, and prevent non-friends from enlarging, sharing, or downloading photos. Facebook also blocked military-linked ads on its platform. Although compared to the scales of harm these changes can be inconsequential, they are included as an example of options that should have been in place a long time ago if they had adequately identified the needs of those facing threats in dictatorships. Such privacy features are useful for anyone, whether in a context such as a surveillance state, or for privacy and protection from stalkers and abusers. Also, by understanding the impact of military promotional material on marginalized, criminalized and colonized contexts, we can show how similar bans for other groups can be fundamental in pushing back against violence and hate.

Example Six: Apps/tools for the at-risk, marginalized and vulnerable groups by design

Outside these highly corporate and commercialized examples, there are many projects, products, and apps that are created for at-risk, marginalized and vulnerable groups by design and much of their methodology and design shows how our generalized tools can do the same. Looking at these products, we can gain vital insight on how our communication technologies can be better for the safety, privacy and general enjoyments of the general public. For example, a number of police watch apps[156] were created based on the experiences of Black and brown people, protestors and others unduly targeted by police violence in the US. The apps provide an accessible user interface for recording, streaming, and posting videos in a way that preserves their privacy and are verifiable. This however, requires a separate document of its own to dive into.

155 Fallert, N., 2021. *Facebook taking steps to protect users, block military usage in Myanmar.* [online] Newsweek. Available at: <https://www.newsweek.com/facebook-taking-steps-protect-users-block-military-usage-myanmar-1580770> [Accessed 6 April 2022].

156 Jacqui Ford Law. 2020. *Best apps to safely and effectively record police violence | Jacqui Ford Law.* [online] Available at: <https://fordlawokc.com/apps-record-police-violence/> [Accessed 6 April 2022].

Círculo app

Another app that focuses on the needs of an at-risk group is the Círculo app[157] created by the Guardian Project in collaboration with ARTICLE 19.[158] This app is centered on the needs of women journalists in Mexico, where there has been an increasing and endemic violence against journalists with broad impunity.[159] Seven journalists were killed in 2021 and four were killed in 2022.[160] Women Journalists are even more at risk.[161] By focusing on the needs of and working directly with women in journalism, an app was created for small group communications in highly secure and private environments. The app allows for alerts and safety check-ins to be sent to a tight knit group, with location sharing that is encrypted and sent only to the specific circle. The app does not track, expose or use this location. It allows for a prioritization of alerts and situations that need a person's attention the most. Though created for journalists in Mexico it can be adopted and formulated for protestors around the world who want to plan and maintain safety checks with their trusted groups. It can also be used for groups of friends who want to check in on each other safely after dates or outings. Or with adaptation to needs and contexts, for example queer folks in dangerous contexts or for sex workers working in risky contexts who want to keep their networks informed. It is easy to see how focusing on the "extremes" or high risk contexts inspired an innovative app that is useful for the general population.

157   Círculo. 2022. *Círculo*. [online] Available at: <https://encirculo.org/en/> [Accessed 6 April 2022].

158   Okthanks. 2022. *Círculo — Okthanks*. [online] Available at: <https://okthanks.com/circulo> [Accessed 6 April 2022].

159   Article 19. 2021. *Mexico: ARTICLE 19 urges Obrador to focus on protecting journalists at home.* [online] Available at: <https://www.article19.org/resources/mexico-article-19-urges-obrador-to-focus-on-protecting-journalists-at-home/> [Accessed 6 April 2022].

160   Linares, A., 2021. *'Annihilating journalism': Mexican reporters work amid attacks, killings.* [online] NBC News. Available at: <https://www.nbcnews.com/news/latino/annihilating-journalism-mexican-reporters-work-attacks-killings-rcna14196> [Accessed 6 April 2022].

161   LatAm Journalism Review by the Knight Center. 2021. *The violence suffered by women journalists in Mexico - LatAm Journalism Review by the Knight Center*. [online] Available at: <https://latamjournalismreview.org/news/the-violence-suffered-by-women-journalists-in-mexico/> [Accessed 6 April 2022].

Scenarios and Broader Concepts

While the examples presented above help illustrate the usefulness of the DFM methodology, many of them were still adopted in a commercialized manner only after people were already harmed by their use of technology. The goal of DFM is to have this methodology as a core framework and a preemptive measure. If we start designing based on the decentered cases, we enable innovation that deeply considers safety, privacy, and justice. Below are some scenarios that further illustrate and outline the notion of "from decentered to the masses".

"Double PIN/Secret Folders"

The first user scenario concerns **"Double PIN/Secret Folders"** (or what I'm now calling the Double Skin PIN)[162] on page 139 of the Digital Crime Scenes report[163]. The invention of this feature was motivated by the prosecutions of LGBTQ people in MENA (with the note that even in these communities those most targeted are trans women, sex workers, and refugees). The recommendation outlines the option of double passwords, where one password would open up the app with all its content, and the other password would show a "clean" version of the chats, where vaulted or sensitive conversations are hidden. This provides a method for protection in case an individual (here queer people in MENA) is arrested and their Whatsapp conversations are inspected. One lawyer stated:*"I would definitely say like the double password, like just to have a certain protection from anyone trying to use the phone or entering the phone." She continues, "I've always thought if there is a way to do a password for WhatsApp, you know like a double identification [to] at least have another password to go to WhatsApp for like certain conversations." the recommendation also suggests "Creating an in-app, password-protected camera roll that photos/videos from messages in the app can be saved to (without saving to the phone's general camera roll) is also highly recommended"*

Implementing this recommendation would be game changing in these contexts and others with similar risk levels. As mentioned, the

---

162   This is in addition to the PINs recommendation.

163   Rigot, A., 2022. *Digital Crime Scenes.* [online] Berkman Klein Center. Available at: <https://cyber.harvard.edu/publication/2022/digital-crime-scenes> [Accessed 5 April 2022].

overwhelming majority of these cases are built on WhatsApp conversation gathered from an individuals' phones (in Egypt, 50% of the court files included WhatsApp conversation screenshots). However, it is easy to see how this fundamental change can be useful for just anyone!

Take for example, Frank, a father in London. Frank's daughter, 4-year-old Lily, loves to play with his phone. Sometimes when she goes into Frank's WhatsApp to watch videos sent by her grandmother, she also goes into other chats and accidently messages people, deletes things and so on. Now imagine if Frank had this magical option to have a version of the app where Frank would put in a PIN for the version of his app where Lily could run havoc: only chats with her mother or her granny for example.

Even in a hypothetical we can see the easy way to create for those who are most marginalized, and at risk, has a collateral benefit to all of society.

Sex Workers

DFM also applies to listening to and understanding the security protocols that highly marginalized and criminalized groups have adopted to protect themselves. By implementing these protocols, many security, privacy, and safety gaps are filled. Scholars, such as Zahra Stardust, along with Livia Foldes of Parsons School of Design at the New School and Danielle Blunt of autonomous collective Hacking//Hustling[164] work as part of the Decoding Stigma[165] collective conducting collaborative research, workshops, advocacy and much more, to show how better tech futures can be created if created by sex workers. As Stardust puts it *"As necessary innovators, sex workers are consistently early adopters of new technologies, designing, coding, building, and using websites and cryptocurrencies to advertise."* The power of what they can curate based on the experiences, expertise and knowledge of the collective is immense because sex workers,

---

164   Stardust, Z., 2020. *What can tech learn from sex workers?.* [online] Medium. Available at: <https://medium.com/berkman-klein-center/what-can-tech-learn-from-sex-workers-8e0100f0b4b9> [Accessed 6 April 2022].

165   Decodingstigma.tech. 2022. *Decoding Stigma*. [online] Available at: <https://decodingstigma.tech> [Accessed 6 April 2022].

from the US, to MENA[166] or Asia, are often at the receiving end of new surveillance technologies, tech policy shifts, or policing strategies. Sex workers, especially those in higher risk contexts and/or non-West contests, often are, by necessity, deeply knowledgeable on the security and privacy gaps in our everyday tools and are in a prime position to craft frameworks for better tech for all.[167] Importantly, sex worker groups, and experts themselves should frame the parameters of how any collaboration should occur to avoid further harm and exploitation of the groups. This should include memorandums or any formalization to ensure they are adequately consulted as leaders in the process and provided with the right compensation and attribution.

Sanctions and access - tech's collective punishment

Users navigating authoritarian censorship have documented frustrations of being both isolated from online services by their governments and from the United States' system of sanctions168. Especially in countries such as Iran, US sanctions have impeded access to Internet services because global Internet infrastructure, services and platforms are disproportionately held by American corporations. This has had an impact on access and accessibility online, especially as safety and privacy has many complex layers. Mahsa Alimardani, a senior researcher at ARTICLE19 has been documenting what this policy means for access through documentation of blocked services due to sanctions169, as well as documentation of impacts through surveys amongst 1500 Internet users in Iran, and a series of interviews with journalists and technology developers inside of Iran. In conjunction with the state enabled regime of information controls, she's been looking at the ineffective implementation of the US

---

166   Rigot, A., 2022. *Digital Crime Scenes: How Police Use a Mosaic of Private Data to Persecute LGBTQ People in the Middle East and Northern Africa.* [online] Tech Policy Press. Available at: <https://techpolicy.press/digital-crime-scenes-how-police-use-a-mosaic-of-private-data-to-persecute-lgbtq-people-in-the-middle-east-and-northern-africa/> [Accessed 6 April 2022].

167   Here, supporting and building on the methods used my sex wokers in higher risk or low income contexts who face many threats can also be beneficial to other sex workers. Bernier T, Shah A, Ross L, Logie C, Seto E The Use of Information and Communication Technologies by Sex Workers to Manage Occupational Health and Safety: Scoping Review J Med Internet Res 2021;23(6):e26085URL: https://www.jmir.org/2021/6/e26085 DOI: 10.2196/26085 [Accessed 6 April 2022].

168   From Alimardani's interviews from her forthcoming report. Also see Alimardani, M. and Paksad, R., 2019. *Silicon Valley preaches diversity and inclusion while excluding Iranians.* [online] Atlantic Council. Available at: <https://www.atlanticcouncil.org/blogs/iransource/silicon-valley-preaches-diversity-and-inclusion-while-excluding-iranians/> [Accessed 6 April 2022].

169   This is an upcoming 2022-2023 report Alimardani has written for ARTICLE19 with the support of the Harvard Cyber Clinic.

Treasury's General License D-1170, which makes an exemption for personal communications for users in countries such as Iran that face sanctions (i.e. exemption for technologies and companies to continue certain services). The General License was ineffective in allowing for personal communications services to continue because financial and business services, as well as other technology corporations over complied with sanctions to avoid liabilities. This has led to an environment where Iranians interviewed for this forthcoming report have said they are "isolated and separated from the world, abandoned not by the draconian practices of our own government, but the disregard by the rest of the world."171 This work underscores the weakness of these broad-based policies that when coupled with a general disregard by companies, leaves vulnerable populations to be harmed by US sanctions censorship, when they are already suffering under authoritarian censorship. There is an added layer of privacy and security vulnerabilities that arise when users have to turn to less secure technologies because of these barriers to access and the marginalized and at-risk suffer most.

For example, the introduction of Lite Applications is useful for those struggling to bypass two layers of blockages to an extent, but the shift to provide for these groups needs to be larger – from a corporate angle: how to navigate in a manner that internal protections against liability do not mean the most impacted are collectively punished and banished from services? How to provide access to folks already struggling to connect, and maintain communities online, and in return have a dedicated and active user base in an international and emerging market? Further, by providing better access and a connection to the international community, we learn more for the collective good because more people continue to relay information about human rights abuses and create collective measures for accountability.

170   *Iran sanctions.* U.S. Department of the Treasury. (2022, March 22). Retrieved April 7, 2022, from https://home.
       treasury.gov/policy-issues/financial-sanctions/sanctions-programs-and-country-information/iran-sanctions

171   Excerpt from forthcoming US Sanctions report by Alimardani for ARTICLE19.

Iran presents a highly surveilled, censored, at-risk, and often internationally isolated, population. If we create safer, accessible, and privacy respecting tools for them, we can teach many companies how to create highly effective, reliable, and secure technologies. This is definitely a collective decentered context, but moving in further, focusing on the marginalized groups (LGBTQ people, labor unionists, ethinic minorities etc) who also rely heavily on online connections provides powerful insight into the technological gaps in our tools, and the disconnect in the policies they abide by.

DFM Adjacent Work in Other Industries

Reimagining the central importance of cases that deviate from this happy path[172] and placing them as the focal point from the onset is not a revolutionary concept. Many industries need to focus on "edge cases" or "extremes" for their whole system to function as a fundamental principle. There are a plethora of examples in disability justice work that has led to immense innovation and better structures for us all, from life saving curb cuts[173] that were originally made for wheelchair access, to the captions we all love[174] on our streaming services that were made for the Deaf/those hard of hearing. However there are many more examples in many industries. For example:

- In industrial engineering, engineers often focus on the most extreme scenarios such as the highest potential impacts of natural disasters. From a financial perspective, "every $1 invested in climate mitigation avoids $4 in future losses."[175] They go even further, specifically in resilience building[176] for climate change and disaster relief, and affordable housing, where they focus on designing and improving conditions for those most impacted and for communities experiencing historical neglect and dis-investment. With a DFM frame on this, the motivations can be laid out: when a, for example, natural disaster hits affluent communities are not affected the same way as historically neglected and dis-invested communities. The decentered communities in these contexts will experience higher damage and destruction often. This inturn means higher costs and resources in rebuilding areas. In focusing on these communities not only are gaps in safety structures more

172 Weaver, J., 2019. *Edge Cases Are Real and They're Hurting Your Users.* [online] Medium. Available at: <https://modus.medium.com/who-pays-the-price-of-happy-path-design-36047f00c044> [Accessed 6 April 2022].

173 99% Invisible. 2021. *Curb Cuts - 99% Invisible.* [online] Available at: <https://99percentinvisible.org/episode/curb-cuts/> [Accessed 29 April 2022].

174 Gernsbacher, M., 2015. *Video Captions Benefit Everyone.* [online] Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5214590/> [Accessed 29 April 2022].

175 Coffee, J., 2016. *Collateral Benefits — Blog: Climate Adaptation Exchange — Climate Resilience Consulting.* [online] Climate Resilience Consulting. Available at: <https://www.climateresilienceconsulting.com/blog/category/Collateral+Benefits> [Accessed 6 April 2022].

176 resilienceforce.org. 2020. *A People's Framework for Disaster Response.* [online] Available at: <https://resilienceforce.org/wp-content/uploads/2020/01/report_jan_v8.pdf> [Accessed 6 April 2022].

clearly seen (and amendment of them can be applied to other communities) but also it reduces costs in relief when the original structures in the most impacted areas are robust. This reduces impact on these communities and also benefits people outside of these communities.

- In Resilience building,[177] focus is placed on strengthening and improving conditions to ensure long term improvement in communities. It focuses on workers rights and conditions, especially in areas post-disaster and in fields dealing with disaster recovery, including creating robust "disaster safety nets," expanding affordable/free food and medical access, rent stabilization and housing access, tax dividends paid to affected communities, etc. By investing in low-income communities, who are more susceptible to natural disasters and long term impact, resilience building cuts costs and the timeline on disaster recovery and makes communities more resilient to natural disasters: a Shift from thinking about response primarily in terms of property damage to more social-economic vulnerabilities that centers communities and individuals rather than physical structures. They note that this framework for recovery brings "fresh attention to communities experiencing historical neglect and dis-investment, rebuilds relationships across divided constituencies, address longs-tanding issues of unequal access and opportunity, creates an effective foundation for future climate resilience, and creates the safety and security necessary for people to contribute to building a stronger society, rather than being exploited by it." They note that this provides a collateral positive impact shift for the community targeted and those surrounding it.

---

177   For example the methodology created by the Resilience Force and The New Florida Majority: resilienceforce.org. 2020. *A People's Framework for Disaster Response.* [online] Available at: <https://resilienceforce.org/wp-content/uploads/2020/01/report_jan_v8.pdf> [Accessed 6 April 2022].

- In the academic field of formal verification, computer scientists use inductive proofs[178] to verify that software is correct. In inductive proofs, a statement is categorized as either a base case (which is an edge case) or a generic case. In order to prove that something is true for the generic cases, you first have to prove that it is true for the base (edge) cases. Without starting with the base cases, the proofs are impossible to complete. While this is obviously very removed from the real life frameworks we are discussing, with a DFM frame, this is another example of how industries and differing fields focus on the "extreme" situations in order to ensure a better functionality and outcome.

- Legal statutes that are originally crafted in response to specific grievances, harms or protection to specific groups (such as racism) have collateral benefit to all of society. Since laws are applicable to all, protection for one class/group expands to all others. This is especially true for federal acts which can create a 'baseline' rights regime that can then be further defined and expanded to cover more protections through the judicial process. In a very brief outline, we can see how the 1964 Civil Rights Act ushered fundamental change for many groups in the US. The act ended official segregation in public places in the United States[179] with the motivation and goal to grant equality to African-Americans with white Americans in employment, education, public services, and other areas of public life. However, this landmark law, pushed through due to the decades of work by civil rights leaders and activists, held collateral benefits to other minorities (racial and gender) by using sections (Titles) of the act to advocate for greater protections in specific sectors of society, for example:[180]

178 Web.stanford.edu. 2016. *Guide to Inductive Proofs.* [online] Available at: <http://web.stanford.edu/class/archive/cs/cs103/cs103.1164/handouts/240%20Guide%20to%20Induction.pdf> [Accessed 6 April 2022].

179 Defacto segregation continues to be rampant.

180 Shattuck, J. and Risse, M., 2020. [online] Carrcenter.hks.harvard.edu. Available at: <https://carrcenter.hks.harvard.edu/files/cchr/files/reimagining-rights-racial-discrimination?m=1607470267> [Accessed 6 April 2022].

a. Title I: used to advance voting rights in ushered in Voting Rights Act of 1965

b. Title VII: used by women's rights activists to push for gender equality in hiring and in the workplace. Used to establish Equal Employment Opportunity protection for all workers

c. 1968 Fair Housing Act expanded on protections to equal housing and accommodation

There are so many examples in different fields, or points in history of designing with this ethos, so the question remains, why are we not doing it for our communication technologies? It could transform the design and implementation of other technology products that now provide the infrastructure of our daily lives.

Identifying decentered cases

A difficult part of this process is identifying decentered cases and communities. This is often an issue when promoting new methodologies in any technological or corporate context where a lot of those involved have little to no connections to the harmed groups or communities and appropriate funding is not allocated for broader consultations, trust building, and research. In this document, we have established that designing from the margins can provide net gains and collateral positive impact is demonstrable. It is also a question of reframing priorities and deciding how to allocate funding. The sums of funds placed into user research and other product related research needs to also be addressed here. A quick search online states that on average 20% of software development budgets are allocated to UX (user experience) research.[181] This can definitely vary (and at times be higher) depending on the type of company or technology. However, the requirement here is to have sufficient allocated funds and resources in 1) bringing on the right experts who can outline and identify the decentered communities in different contexts, and are trusted or linked to those communities, 2) adequate resources and frameworks for working with such communities outside extractive, power imbalance or profitability models and 3) place in as a high priority this work without underestimating the value of fine tuning our tech before deployment, so we move slower not to break our communities. Adequate investment in a vigorous reboot of these processes will lead to innovation, sustained success, trust-building, and return on investment. It is therefore important that those involved in making these landscape-changing shifts are adequately compensated and consulted. This document does not get into the hows on working with decentered communities after they are identified, as that deserves its own document. However, below is a _suggested_ outline of how to understand the identification process of finding the decentered cases for DFM implementation.[182]

---

181   Creative.onl Ltd. 2020. *How to set your UX budget: How much do companies spend on UX? • Creative. onl Ltd.* [online] Available at: <https://www.creative.onl/how-to-set-your-ux-budget-how-much-do-companies-spend-on-ux/> [Accessed 6 April 2022].

182   I hope to deepen the methods here with more consultations and implementation sessions and so on in the further building of this project. See this as the initial skeleton outline.

In later iterations of this project there will be more details and breakdowns of methods to identify decentered groups and how to work with them. Below is an initial breakdown.

Stage one - What tool and what context?
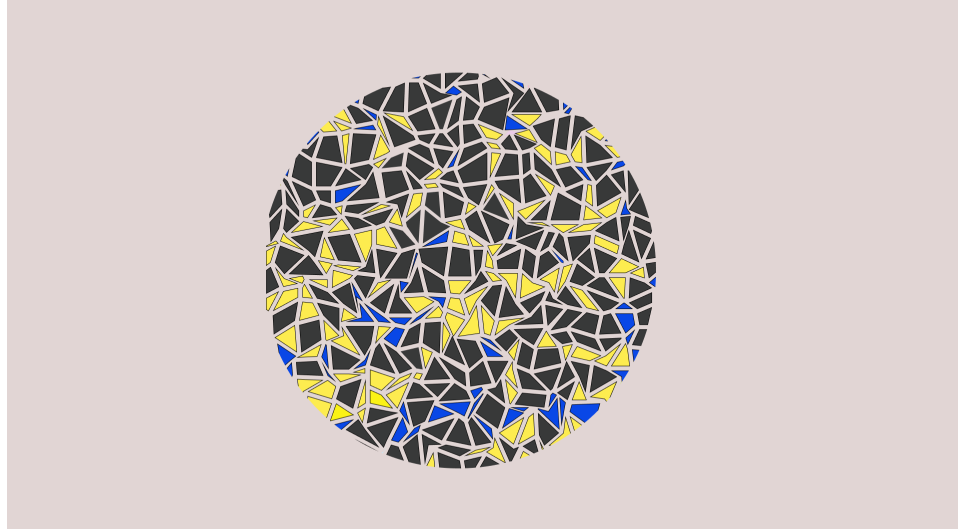
Image 10:   spherical demonstration of people/users in the identified geographies/countries/locales/demographics of focus: the general users (black), the marginalized or users with specific needs who are generally protected (yellow), and decentered users (blue).

Here, the team needs to assess the type of tool or product they are dealing with from a baseline stand point: a new feature on an existing platform? A messenger app? Or a social media tool or dating app? It is important that this happens at the point of initial ideation of a feature or a product, and before the concept is created. That way, an assessment of the target geographies/countries/locales/demographics (and an outline of unintended context that the tool might expand to) can be drawn up. The existing research of the type of communication tools used in varying contexts can be used, but ideally topic experts should be consulted. The building team should start by considering groups in non-North American or European contexts that may have a need for the end product. The DFM methodology recommends they bring on the right consultants (experts from non-US/EU, who are non-white, hold deep community links) to assess the potential expansion and scale of the product. The consultant should base the initial ideation and research on the levels of risk faced by under-supported and highly impacted communities. With the right expertise, and through the

use of existing research on technological impacts and scaling patterns, they can lay out a framework for identifying initial geographies/countries/ locales/demographics of focus.

For a very basic example:

1. Established that a new messenger tool will be developed

2. Research and consultation into what types of messenger tools are dominant in what contexts (WhatsAppbroadly internationally, Facebook Messenger in Tunisia, Weixin / WeChat in China and so on)

Based on some of the outlines of these contexts, honing in on countries or locales where messenger tools have been most weaponized or hold higher risks (expertise reliant).

Thinking in terms of product cycles, this would be part of the first and second cycle of a basic Product Development Lifecycle[183] DFM implementation starts with the "brainstorming" and "define" stages.

183   Chowdury, O., 2022. *Product Development Life Cycle.* [online] Available at: <https://blog.orponchy.com/ product-development-life-cycle/> [Accessed 6 April 2022].

Stage two - zooming in on the decentered
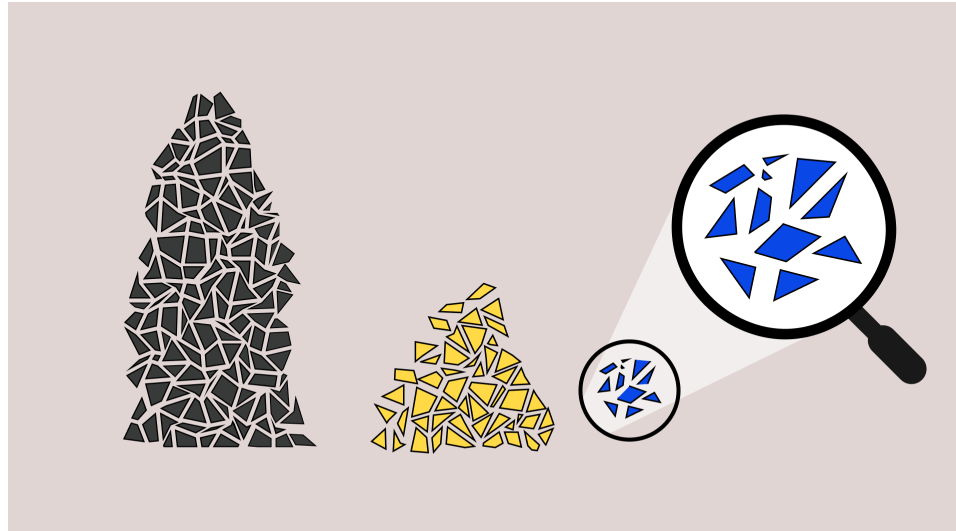
Image 11: Through contextual social, legal, and political analysis, narrowing down to decentered groups and individuals and focusing in on them.

When the specific country or context is outlined, honing in on the needs of vulnerable users requires more in-depth collaboration, research and trust building. Here, amongst these user pools, researchers should identify groups who are deemed marginalized and who have specific needs as well as assess the social, legal, and political issues that impact people (see above in *Development and Design Iceberg*). Here you are identifying who is most impacted by dangerous laws, stigmatized societal threats, and dangerous political might. Here the three layers will be identified in the pool of users. The decentered cases (blue) will be lower in number and are those identified as suffering from the most risk and the least protections: e.g., undocumented migrants, highly policed folks of colour in disenfranchised areas, sex workers, queer people living under antiqueer laws and so on (obviously the people will depend on context). You will have subgroups and overlaps.

- Here first you identify the general users of your set context or country or locale → then you identified the groups who have faced marginalization or have specific needs and within this group → the decentered cases, in blue, are identified among other marginalized groups and users who have specific needs but are generally protected and/or less at risk (of course this shifts as is rarely that

clear cut and thus having the right experts on the team who are fully aware of the contexts is very important). When identified you focus on these cases.

Here, hiring and working with culturally competent experts with deep relationships in the countries and their context is <u>vital</u>. This is also an important exercise when building trusted relationships and networks. Ideally a process of identification can start with reviewing the work of and building a connection with local organizations, NGOs, and relevant academics and experts. Hiring via existing pools and nextworks or North American/European employment services will not be sufficient - building trust is important in identifying the right people. It is also important to bear in mind that many experts from these contexts may not have online and public profiles on such websites or in agencies due to access issues or security concerns (for example I do not have a Linkedin profile or anything similar due to my own security concerns). Technologists need to expand the scope and make more accessible job listing announcements that are transparent and on the right domains (e.g. social media or technologies most used in the context in question). For notes around hiring practices refer to.[184] A lot of this information exists, but ensuring accurate analysis and establishing the right connections is an important part of understanding risks, needs and design frameworks.

---

184   Please also refer to Costanza-Chock's chapter titled Designers: Who Gets (Paid) to Do Design? : Costanza-Chock, S., 2020. *Design Practices: "Nothing about Us without Us".* [online] Design Justice. Available at: <https://design-justice.pubpub.org/pub/cfohnud7/release/2> [Accessed 5 April 2022].

Stage three - building for the decentered

Image 12: Ideate, build and deploy while focusing on the decentered.

Those most-impacted and least supported have been narrowed down. As mentioned, they are the least in number but often have the most needs, as the **design and ideation process starts with them through to production and deployment**. Here designers should work with experts, consultants and others connected to and knowledgeable about the situation in order to identify needs and wants within the ideation process and not after the development of a product or feature. For example, Grindr consulted with MENA tech and community experts to identify needs and issues faced by criminalized queer people – especially those dually marginalized – and then created security features based on them such as the Discreet App Icon. The creation was conducted with these decentered groups involved.

This is especially the case as the decentered cases are often those who are highly criminalized and thus the risks need to be assessed and commenced via the right experts (think the link to experts and conduits in the Grindr, WhatsApp and Airbnb cases for example). The decentered are lower in numbers but often have more needs.

The process in which the design, development, and building is done with them is also very important. This is not the focus of this report and will be scoped out in future renditions.

A recommendation: look at justice and community based design outlines, for example, Professor Sasha Costanza-Chock's book185 analyses and outlines some possible Design Justice methodologies and provides the necessity to move away from the extractive, raced and gendered power imbalances and extractive models that are often employed in many co-design and participatory design processes.186 They also outline alternatives and methods to work with communities outside profitability, imperialistic and extractive models.
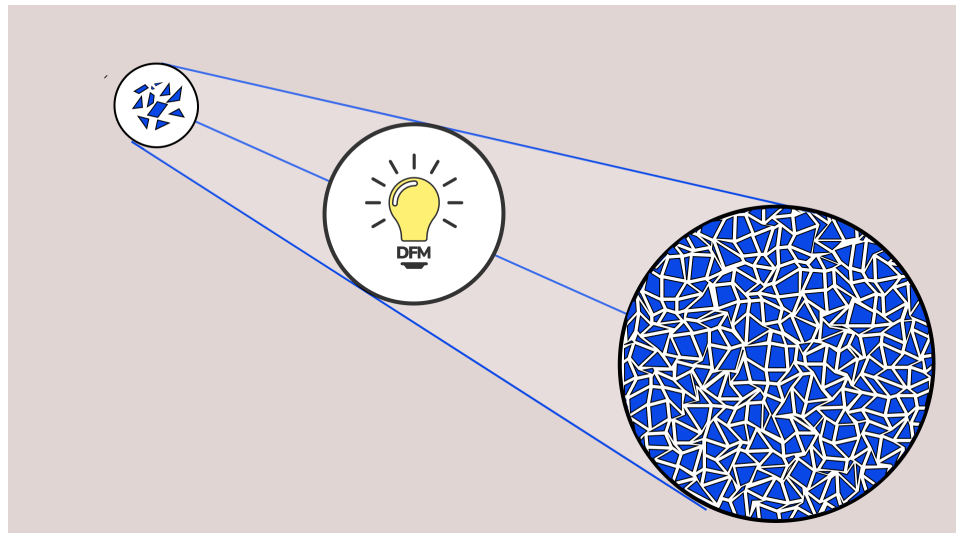
185   Costanza-Chock, S., 2022. *Sasha Costanza-Chock · PubPub.* [online] Design Justice. Available at: <https://design-justice.pubpub.org/user/sasha-costanza-chock> [Accessed 5 April 2022].

186   Costanza-Chock, S., 2020. *Design Practices: "Nothing about Us without Us".* [online] Design Justice. Available at: <https://design-justice.pubpub.org/pub/cfohnud7/release/2> [Accessed 5 April 2022].

Stage four - regeneralizing what is built for all users

Image 13:   What is created for them is given to the general population. This stylized visualization represents how the decentered are no longer at the margins or unseen in terms of needs. At this point, all are using the new changes/features: "When they're designed for, we are all designed for"

In this stage, what was ideated and created for the decentered cases (from ideation, testing to implementation) is then provided to all the user pool. It is created for the decentered and is then given back to the other user groups layers in a regeneralization process. Although not always possible (or appropriate) what is created for this group should not be watered down to fit the wants of the general public but seen as an endeavor that by default benefits the masses (a reverse of how tools made for the general public are not contextualized for the decentered after creation).

This is seen as the **design** stage in a Product Development Lifecycle[187]. However it is important that all the builders of the technology or tool (from engineers to UX designers, UX researchers, program managers, and product leads) to all work in collaboration and understand the contexts, risks and needs: see section on: **Who is the report's target?**

---

187   Chowdury, O., 2022. *Product Development Life Cycle.* [online] Available at: <https://blog.orponchy.com/product-development-life-cycle/> [Accessed 6 April 2022].

The testing stage is also important. When developing the security features on Grindr with the lead designers and engineers, the beta/prototypes of the changes were shown to select experts and community leads in a "is this what you had in mind" manner. Feedback was given and fine tuning was done. This is important as every step and code can have a different outcome- providing more oversight with a more complete understanding and expertise at all the stages creates a finely tuned outcome.

These methods and steps also need to be finetuned and prototyped. These are based on some of the good experiences of implementing such work. The main ethos here, however, is: start with the decentered, have the right experts and create trust, and have all parts of the team involved in the building for the sensitive contexts.

A few concluding words

Design From the Margins and focusing on a decentered design process is not about increasing capitalistic profitability, but reducing tech-induced harms by removing focus from the ill-conceived stronghold of who is deemed the main power users188. The real power users are the user bases who befall the structural flaws and blindspots of your systems and then become victims of how your tech is weaponized against them.

DFM is an action-oriented framework that will allow us to reimagine how we see the "extreme," "outliers," and victims of harms, human rights violations and historical and structural disenfranchisement. It is a method that works and has worked in many industries: we need to demand for more from our technologies, especially with the scale of harms seen in their mass scaling. Building our technologies for the most marginalized and the highly criminalized populations makes better tech for all. We have the data for this, it is now time to implement it.

---

188   Abercrombie, R., 2022. *The Problem With Power Users - Usability Geek.* [online] Usability Geek. Available
        at: <https://usabilitygeek.com/problem-with-power-users/> [Accessed 5 April 2022].

Team

Project Creator and Lead Author

Afsaneh is a researcher, practitioner, and advocate covering law, technology, LGBTQ, refugee, and broader human rights issues. She is a 2021-2022 fellow with the Technology and Public Purpose (TAPP) at the Harvard Kennedy School's Belfer Center for Science and International Affairs. She is also a senior researcher at ARTICLE 19 focusing on the Middle East and North African (MENA) human rights issues and international corporate responsibility; an Affiliate at the Berkman Klein Center (BKC) at Harvard and an advisor at the Cyberlaw Clinic at Harvard University.
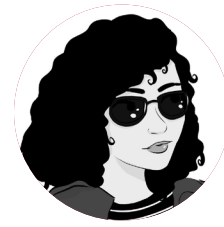
Kadijatou (Kadija) Diallo
Research Assistant

Kadijatou (Kadija) Diallo is a second year Master in Public Policy candidate at the Harvard Kennedy School and a Graham T. Allison, Jr. Student Fellow at the Belfer Center. Prior to HKS, Kadija worked in affordable housing, education access, and immigrant rights and migration policy in the U.S and abroad. Her research interests include the role of non-state actors in global governance, international migration policy, and the protection of human rights in the development and regulation of emerging technologies. She graduated magna cum laude from Temple University with B.A in Political Science.

Maya Vishwanath - Research Assistant

Maya is a first year MPP student at the Harvard Kennedy School. She is from the San Francisco Bay Area, and is passionate about technology policy, social entrepreneurship, and sustainability. At Harvard, she is involved in research with the Belfer Center's Technology and Public Purpose project, and is co-chair of the Climate, Energy, and Environment PIC. Her background is in technology consulting for nonprofits and NGOs, as well as in environmental policy work across the public and private sectors.

Zoya Ajani - Research Assistant

Zoya is currently pursuing her MPA at Harvard Kennedy School as well as an MBA at MIT Sloan School of Management. Prior to starting her masters, Zoya worked with the Aga Khan Development Network launching innovative fin-tech products to increase access to finance in Asia and Africa. She also served as the Chief Product Officer and Co-Founder of CoVerified, a COVID-19 software company backed by Y-Combinator.

Maria Alyssa - Visual Design

Maria Alyssa is a UX Researcher & Designer working at Hewlett Packard Enterprise. She studied Cognitive Psychology at Barnard College and is passionate about the intersection of technology and social change. Born and raised in the Bronx, New York, she's interested in leveraging human centered design to create tools that positively support marginalized communities on their own terms.

Acknowledgements

Technology and Public Purpose Project

Belfer Center for Science and International Affairs

Harvard Kennedy School

79 JFK Street

Cambridge, MA 02138

belfercenter.org/project/technology-and-public-purpose