Co-designing Digital Interventions and Technology Projects with Civil Society

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Foreword

Technology governance in the Fourth Industrial Revolution must contend with mitigating the risks posed by digital and emerging technologies to maximize the collective good, which requires new approaches to co-design.

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The application of digital and emerging technologies has become a core feature of the institutional response to COVID-19 and previous crises. Often disconnected from decision-makers, civil society experts highlight how digital interventions can come to be designed outside of critical needs, out of context and with temporary rights trade-offs, becoming permanent forms of social control or surveillance.

This paper explores the concept of co-design in partnership with civil society, using COVID-19 technology interventions as an entry point. While media headlines often focus on the new technologies themselves, such as contact tracing apps, the focus of this paper is the role of civil society in developing these technologies in collaboration with the private and public sectors. The paper is a step towards thinking analytically, and therefore intentionally, about co-design as the practice continues to be explored. While care has been taken not to overgeneralize, the findings of the report suggest that the ability of civil society to influence the development and impact of COVID-19 tech tools was made possible by access to resources, long-standing relationships with the private sector or government, and the capacity to be seen as a trusted expert.

Co-designing crisis-oriented tech interventions offers designers direct access to workable knowledge, equitable practice and the lessening of unintended but harmful consequences related to technological implementation within a given context. The paper also suggests that, while co-design is no panacea, it is a practice that emphasizes how core values such as trust and empowerment can serve as a common language for meaningful collaboration. Co-design methods have the potential to be a first step towards building equitable relationships among civil society and the private and public sectors, and can help address the power imbalances inherent in such collaborations.

(1) Introduction

The application of digital and emerging technologies has become a core feature of the institutional response to COVID-19 and previous crises.

❝ Our analysis suggests that co-design today is aspirational when it comes to collaborating with civil society.

From infectious disease surveillance (e.g. Ebola, Zika and malaria) to disaster response (e.g. the 2010 Haiti earthquake and the 2015 Nepal earthquake), government and industry responses have brought public attention to a range of challenges in designing and deploying technologies in crises. However, the potential for technology to improve people's lives in both acute and protracted crises is hampered by techno-solutionist approaches, invasive data-collection practices affecting vulnerable communities, individual and collective privacy concerns, the acceleration of existing inequalities (including gender, race and ethnicity) and missing mechanisms for transparency and accountability.

These challenges have been raised by civil society experts examining the short- and long-term impacts of such interventions in regions across the world. Often disconnected from decision-makers, these experts highlight how digital interventions can come to be designed outside of critical needs, out of context and with temporary rights trade-offs, becoming permanent forms of social control or surveillance. Additionally, the emergence of technology reveals asymmetrical power relationships, such as when digital technologies designed in the Global North are deployed in the Global South with the assumption that one-size-fits-all.

Civil society experts on the ground are critically important for identifying contextual concerns and local risk models across technological interventions. This strategic intelligence from civil society can be highly context-specific, hard to find and unstructured, making it difficult for decision-makers, particularly in the private sector, to receive and apply this knowledge in ongoing or future crises. What is missing are the

mechanisms that would enable decision-makers to activate this critical intelligence for the sake of minimizing risks and harms, as well as maximizing any positive outcomes.

This paper explores the concept of co-design in partnership with civil society, using COVID-19 technology interventions as an entry point. While media headlines often focus on the new technologies themselves, such as contact tracing apps, we are interested in the role of civil society in developing such technologies in collaboration with the private and public sectors. We examined this issue mostly through desk research, which was augmented by a small selection of in-depth interviews with six civil society organizations in India and two organizations in the EU, to gain a more nuanced understanding of the challenges and opportunities that arise in the co-design of COVID-19 tech.

Given the exploratory nature and limited scope of this paper, our analysis suggests that co-design today is aspirational when it comes to collaborating with civil society. Empirically, the examples we learned about did not fit the ideal type of equitable co-design relationships, particularly among the organizations we spoke to in India. This paper is, however, a step towards thinking analytically, and therefore intentionally, about co-design as the practice continues to be explored. While we are cautious not to overgeneralize, we found that the ability of civil society to influence the development and impact of COVID-19 tech tools was made possible by access to resources, long-standing relationships with the private sector or government, and the capacity to be seen as a trusted expert.

" The participation of civil society organizations in the co-design of crisis-oriented tech interventions is critical.

The paper also suggests that, while co-design is no panacea, it is a practice that emphasizes how core values such as trust and empowerment can serve as a common language for meaningful collaboration. Co-design methods have the potential to be a first step towards building equitable relationships among civil society and the private and public sectors, and can help address the power imbalances inherent in such collaborations.

However, for co-design to work, it cannot be a one-time effort centred on a particular application, concern or user group. Our interviews suggest that co-design works best when there is a durable alignment of values, priorities and capacities. Differences in language, working cultures and decision-making structures are further obstacles. Identifying appropriate engagement actors and formats is also a challenge. A one-time attempt at co-design is thus likely to be ineffective – multiple smaller steps, in varied formats and aimed at building long-term relationships, can create the foundations for a rewarding co-design process. When time is limited, such as in the case of COVID-19 tech, it is important for civil society organizations that have relationships with and investments in the most vulnerable users to be engaged early in the process. This may require

creating new engagement formats that are best able to draw out civil society expertise, or working through boundary institutions, such as academic centres. Global technology companies will also need to decentralize their decision-making structures, enabling in-country teams to work more closely with civil society actors.

Mitigating the challenges and risks of co-design is no easy task; often, the firmest solution to ensuring the most equitable and effective collaboration is *more time* to develop trusted relationships between participants and to sufficiently understand the social and political contexts at hand. But, in a crisis, time is of the essence. All the same, dispensing with the practice of co-design because of these challenges poses a greater risk in terms of the potential and often unforeseen negative impact of tech interventions on the most vulnerable and marginalized communities. As such, this paper suggests that the participation of civil society organizations in the co-design of crisis-oriented tech interventions is critical, as it offers designers direct access to workable knowledge, equitable practice and the lessening of unintended but harmful consequences related to technological implementation within a given context.

BOX 1 | Tech tools for COVID-19: India

Governments around the world are deploying technological tools to manage the COVID-19 pandemic. Much of the media and policy attention has focused on digital contact tracing tools. However, many of the other tech tools in use also deserve close scrutiny, as they raise similar concerns about privacy, accountability and misuse. Many of these tools are likely to persist beyond the pandemic, shaping the digital ecosystem. Beyond specific instances of harm, the widespread use of these tools can restructure existing political and social relations. It is important to anticipate and understand these risks early in the design and deployment processes in order to avoid harmful technological and societal lock-ins.

In May 2020, Tandem Research set up a public tracker to document the new tech tools being used in India to manage the pandemic. More than 80 tools were identified across six categories: telemedicine; testing and screening; remote health patient monitoring; virus mapping and contact tracing; information alerts; location tracking and quarantine management. The tools were then evaluated on six parameters: equity and inclusion; privacy and data protection; accountability and transparency; adequacy of legal frameworks; scientific validity and efficacy; potential for misuse.

Many of these tools were introduced as necessary for safeguarding public health. However, they were unavailable on feature phones (earlier generation non-smart phones) or in regional languages, thereby excluding a large proportion of the Indian population. Most lacked clear policies on data collection, data use, data retention and data sharing; in some cases, privacy policies were available only on a browser version of the application, making them inaccessible to the majority of India's users who rely on mobile phones to access the internet. Many collect excessive user data, beyond what is needed for health purposes, and lack a sunset clause. Function creep (when use goes beyond the original intended purpose), misuse and harmful unintended consequences were also identified as major concerns for a number of the tools. In addition, the review highlighted the lack of policy and regulatory frameworks for governing the deployment of these tools; India is yet to pass a data protection law, for example.

India's digital contact tracing application Aarogya Setu raised serious concerns about privacy, surveillance and misuse. The app was initially made mandatory by the central government, but this was diluted to a "best effort basis" after legal petitions were filed and campaigns launched by civil society organizations. Despite this, numerous instances of mandatory use have been documented, from gig economy platforms to government offices. Civil society actors also demanded access to the source code as a way to enable transparency and accountability. After sustained pressure, the source code for the app was made publicly available; however, only the source code at the user end, not the back end, was shared.

As the use of these tools persists beyond the pandemic, many are likely to set new precedents for monitoring and surveillance practices, normalizing some of these practices as necessary for maintaining public health. Some of these tools represent a classic case of technological solutionism, where technology is assumed to be an impartial solution to complex social problems, and deployed without an adequate dialogue taking place on its appropriateness, efficacy, risks and safeguards. Closer engagement with civil society groups could help improve the safety and efficacy of these tools and help anticipate unintended consequences. Civil society engagement could also help identify where technological interventions are needed, if at all, and the type of interventions best suited for the context.

② What is co-design?

Co-design is an umbrella term for various approaches to design that assume a collaborative process between two or more actors or stakeholders.

❝ The practice of co-design spans multiple fields, from community architecture and urban planning, to consumer products and IT, to large-scale systems and services.

Ranging from the relatively neutral "user-centred design" to approaches such as "design justice" that are overtly committed to overturning existing social hierarchies, these various schools of thought share a common belief that good solutions to design problems are not generated solely by professional designers, technical experts or managers. Instead, co-design proposes that the perspectives, values, situated knowledge and experiences of other internal and external stakeholders have much to offer the design process. The practice of co-design spans many fields, from community architecture and urban planning to consumer products, IT and large-scale systems and services.[1]

Co-design implies some degree of collaboration between those who develop, invest in and maintain a particular design product or process, and those who use, experience or are affected by it. Yet it is also crucial that co-design processes themselves are equitable and in service of the most vulnerable stakeholders. Indeed, co-design approaches run the risk of fine-tuning the methods and practices of design and participation at the expense of addressing larger patterns of dominance or focusing on the greater social and political context.[2] Simply building moral elements or values, such as "fairness" or "democracy", into the design process from the outset does not ensure that the values and experiences of participants – nor their perspectives on what the problem is in the first place – are incorporated into the solution. Furthermore, it is important to consider that a model of co-design developed in one country or region of the world may not easily translate to countries or regions that have greater variations in education and income levels and stronger social hierarchies.[3]

Generally speaking, civil society organizations can facilitate the equitable participation of non-designers in the design process, while also offering the value of situated knowledge and experience of a specific geographic context. In the case of a global public health crisis such as COVID-19, the importance of involving civil society within the process of co-designing solutions is paramount.

2.1 | Challenges for technological co-design

Three important considerations of co-design approaches – power, inclusion and justice – assume greater significance in the context of technological design initiatives. To begin with, the hierarchies of power that the tradition of participatory design is committed to upending are reinforced by the opacity – or black box – of technology's inner workings. This situation creates a power imbalance between designers and users or stakeholders purely on the basis of the designer's technical expertise. Participatory co-design would enable, and in fact *require*, the sharing of that expertise to the extent that the social effects of this knowledge hierarchy would be lessened.[4]

In the case of inclusive design, the sheer speed with which technology increasingly underpins all areas of everyday life means that designers' decisions have greater consequence for people if they do not account for differences, e.g. physical or language abilities, or if they ignore marginalized groups. The problem of inaccessible technology will only grow more pronounced if designers continue to design for, rather than with, people of different abilities. Co-designing technological objects and services with a wider population of users both in mind and in partnership offers a practical way to advance more equitable, accessible and flexible use of technology.[5]

Finally, justice with regard to a given society's structural inequalities is a significant concern in the realm of technological design, particularly when considering the substantial financial and cultural rewards bestowed upon professional designers in the software and tech industries. These rewards are unevenly distributed along lines of race, class and gender, and tend to replicate existing power dynamics. As such, co-designing technology from a design justice perspective has implications beyond the design process itself. In addition to "diversity in tech" initiatives, the design justice perspective advocates for collaboration specifically in terms of who owns, profits from and is credited for technological objects and services.[6]

2.2 | Incentives for co-design

It is important to understand the incentives for each actor involved in co-design relationships. While a full mapping of actual and perceived benefits and risks is beyond the scope of this report, the following gives a basic idea of what civil society, the public sector and the private sector may have to gain in a co-design relationship.

– For civil society, collaboration with either the public or private sector can bring increased impact, visibility or funding opportunities. Political and infrastructural support from national and regional authorities enables civil society organizations to coordinate and streamline their services, and potentially become more effective and sustainable over the longer term.[7] However, these kinds of support are not the only incentives. Engaging directly with technology companies is a way for civil society organizations to serve the interests of their local communities and protect them from the risks and harms of technological interventions. Civil society organizations play a vital role in preventing corruption, ensuring access to due process on behalf of a local community and holding corporations accountable for prioritizing profits over the safety, security and well-being of their users.[8]

– The benefits of collaboration for private enterprises can vary according to how robust the regulatory infrastructure is in a particular country and, in a related point, how much the public can trust the private sector to operate beyond profit incentives. In countries such as the US, where the private sector overlaps with the public sector and therefore maintains a great deal of unchecked power, collaboration with civil society organizations can demonstrate that a company is indeed invested in the rights and liberties of its everyday users. However, there is a risk that this will appear to be no more than a public relations effort, especially when the civil society partner is, for example, a large, well-funded non-profit foundation rather than a grassroots organization. For tech companies that are not simply seeking public approval, collaboration with civic society organizations can direct prosocial product strategy and development, ensuring that their products are accessible to all populations and mitigate harm to any individual or community. Civil society organizations can help corporations be more specific in their accountability to users through the collaborative development of value-aligned objectives and plans. Finally, collaboration with civil society can prove to be profitable, as innovation originating

from everyday users of tech products can be commercially advantageous and has, in fact, been commercialized by manufacturers.[9]

– The public sector has the potential to benefit significantly from collaboration with civil society. In countries where civil society organizations are valued and supported by a strong public infrastructure, such organizations are able to assist with essential and emergency needs unmet by an overwhelmed government in a crisis situation. Furthermore, when governments, even those operating in non-crisis conditions, are focused on meeting the essential needs of the community, the public sector can benefit from the innovative capacity of civil society and the private sector, both of which repeatedly demonstrate their ability to pioneer technological advancement across the world and in ways in which the public sector can fall short. Finally, governments invested in preserving the rights and liberties of the public (as well as private companies that have similar commitments with regard to their users) can benefit from civil society organizations playing oversight and regulatory roles on tech issues such as surveillance, privacy and civil liberties.[10]

2.3 | Co-design relationships

Incentives for civil society to collaborate with either the private or public sector

– Can increase impact, visibility or funding opportunities

– Can be a way to serve the interests of local communities and protect them from the risks and harms of technological interventions

– Can hold corporations to account for prioritizing profits over the safety, security and well-being of their users

– Political and infrastructural support from national and regional authorities can help coordinate and streamline civil society organization services, and potentially make them more effective and sustainable over the longer term

– Can play a role in preventing corruption, ensuring access to due process on behalf of a local community

Incentives for private enterprise to collaborate with civil society

– Can depend on public trust that the private sector will operate beyond profit incentives

– Can demonstrate that a company is indeed invested in the rights and liberties of its everyday users; however, can be seen as a public relations exercise

– Can direct prosocial product strategy and development, ensuring accessibility to and mitigating harm to any individual or community

– Can help corporations be more specific in their accountability to users through the collaborative development of value-aligned objectives and plans

– Can prove to be profitable, as innovation originating from everyday users of tech products can be commercially advantageous

Incentives for the public sector to collaborate with civil society

– Civil society organizations can assist with essential and emergency needs unmet by an overwhelmed government in a crisis situation

– Can benefit from the innovative capacity of civil society with its ability to pioneer technological advances in areas where the public sector falls short

– Can benefit from civil society organizations playing oversight and regulatory roles on tech issues such as surveillance, privacy and civil liberties

③ # Value of civil society as a partner in co-design

As our desk research and interviews explored the value of co-design in COVID-19 tech and broader contexts, general themes emerged.

These themes are shown below and are accompanied by a selection of voices and ideas offered during the conversations held with civil society organizations. First, it is important to note that civil society represents a wide range of actors with contrasting interests, values and commitments. Identifying appropriate and legitimate partners for co-design is complicated by value contestation, power struggles and varied capacities within civil society itself. Ideally, the private sector should engage with a wide selection of civil society actors and – at the minimum – with those organizations that are committed to addressing the concerns of the most vulnerable social groups, relevant to the particular product or service offering. We also acknowledge that organizations that speak "for" vulnerable or marginalized communities can do so authentically only by committing to accountability, humility, inclusivity and empowerment in their relationships with those very communities.

Bottom up

Civil society organizations not only offer access to user experience, expertise and value, they are often experts in working from the bottom up, sharing information equitably and having on their radar the most vulnerable populations within a society.[11]

This bottom-up orientation of civil society organizations can encourage democratic practice and value co-creation, while challenging existing social hierarchies and avoiding exploitative and extractive practices against vulnerable populations.

> **Top-down projects are often unsuccessful and can cause harm.**
>
> European robotics organization

> **Civil society networks can draw on expertise and experiences across geographies, often in ways that governments are unable to do.**
>
> Indian artificial intelligence [AI] research organization

> **Civil society can play an important watchdog role. This is relevant in both the design and post-deployment phase. They draw in local expertise, and amplify concerns around the harmful or unintended consequences of tech.**
>
> Indian AI research organization

Trust

Civil society organizations also present the potential to mitigate trust issues on the part of vulnerable populations that have long been neglected by government or private enterprise, offering legitimacy and operational transparency instead.[12]

> **Cooperative frameworks help to decrease suspicion and build trust.**
>
> Indian digital rights organization

> **There is often a mistaken assumption that because people are not educated, they are unable to voice their concerns, and there is no need to engage at that level. This is a mistake – people know what they want and need, but might need different formats to express themselves.**
>
> Indian gender and technology organization

> **Risks can be minimized and benefits better realized when technological solutions are interrogated by external independent organizations.**
>
> Indian digital education organization

Local expertise

Civil society organizations often hold situated knowledge and experience of a particular country, region or subregion, which is valuable for tailoring general models of co-design to different social and political contexts. They draw in local expertise and understand local needs, all the while amplifying contextually relevant concerns about the harmful or unintended consequences of tech.[13]

> **The design of tech is often totally dissociated from the contexts in which it is deployed.**
>
> Indian digital rights organization

> **Co-design must include all the various actors within an ecosystem.**
>
> Indian AI research organization

> **The largest number of users are in Asia and Africa, but they are rarely included in decision-making conversations.**
>
> Indian digital rights organization

In the spring of 2020, a group of academics and experts in the EU made an intervention in the development of COVID-19 contact tracing apps, such as the Google/Apple exposure notification app. At the time, these apps were being designed with starkly different approaches to privacy, which could result in risks and harms to the rights of large swathes of the global population if deployed. The consortium of experts developed a privacy protocol based on a decentralized model in order to ensure privacy. This model competed with centralized models, which were backed by certain governments, companies and other powerful interests. After much contentious debate, the Decentralized Privacy-Preserving Proximity Tracing (DP-3T) protocol eventually won out as an effective solution; it was integrated by Google/Apple, and additional organizations adopted a number of the consortium's approaches for preserving privacy.

In exploring the role of the EU DP-3T consortium for this report, one primary question emerged: how did a consortium of experts from civil society come to have so much influence on decision-makers within tech companies and governments dealing with the COVID-19 crisis in real time? We learned that the group had a unique ability to quickly gain visibility as a trusted voice. Its members were able to build trust in a competitive ecosystem by using their considerable expertise and openly publishing their findings as they gained knowledge about proximity tracing apps. While expertise was important, members of the group also activated their strong existing professional and social networks. Indeed, a number of individuals within the consortium already had "seats at the table" when it came to interacting with government and corporate actors. Furthermore, the consortium did not immediately reject the idea that a contact tracing app could be helpful, which differed from the stance of some other civil society organizations that were doubtful that any app could preserve privacy. Instead, the consortium sought to address privacy problems at the point of design, in order to establish a design standard that could mitigate the harm caused by an app if and when it was deployed. Vested interests were pushing apps that preserved privacy to a lesser degree at the outset and there was no guarantee that the DP-3T protocol would be seen as a better option, technically or politically. However, the ability of this civil society consortium to use its strengths to make a successful intervention delivers a clear lesson: addressing issues such as privacy at the design stage can help mitigate the potential risks and harms of technologies developed in crises such as the COVID-19 response.

> **Any time an app is being built, the real intervention is dealing with platform power. We support the idea of intervening at the tech design point, when the app is less invasive [to society] than at the point of deployment.**
>
> **EU privacy organization**

(4) Challenges for co-design

Politics of representation

Civil society consists of a wide diversity of actors, from grassroots NGOs to labour unions to media organizations. Who constitutes civil society? Whose world views and interests should be represented in co-design processes? Those who are the most accessible may not be the most knowledgeable, and those with the most capacity for engaging in co-design processes may represent dominant values or powerful interests in civil society. In addition, many of the large international organizations with the most recognizable brands may not necessarily have strong grassroots ties or a local understanding of the issues at hand. The growing role of social impact enterprises increases the importance of this question: what are their value commitments and organizational goals? As noted earlier, designers of technology should strive to ensure grassroots-level organizations that can speak to the concerns of the most vulnerable are included in co-design processes.

> **It is important not to romanticize the 'local'. The local is not devoid of its own politics of representation.**
>
> Indian AI research organization

The global scale of technology deployment further complicates this politics of representation. Civil society organizations from the Global South rarely get a seat at the table; often, it is only tokenism, or limited to the largest and best-funded civil society organizations. Beyond the development of tech, even critiques of technology thus tend to be dominated by experiences in, and perspectives from, the Global North.

This issue is particularly pronounced in developing countries. Civil society is often under-resourced and fragmented. This can enable governments and industry actors to claim that civil society does not always represent the interest of wider publics, and therefore lacks democratic legitimacy.

> **Most digital advocacy organizations are elite, English-speaking and have a top-down approach, working with governments and corporates. Who speaks for the people? Who represents the masses?**
>
> Indian digital education organization

> **As tech companies repeatedly seek out the same set of civil society actors, these organizations begin to play a middle-man role, motivated at least partly by their own organizational interests. A better option might be to identify and work with dedicated individuals, who do not stand to gain anything financially from advising tech companies.**
>
> Indian digital education organization

BOX 3

Example: design of India's contact-tracing app

India's digital contact-tracing app was reportedly developed by the National Informatics Centre (NIC) in collaboration with volunteers from industry and academia. These volunteers can be considered to be a part of civil society; however, civil liberty and digital rights organizations argue that they are motivated by commercial interests.

Natural friction

One of the interviewees stressed the "natural friction" between governments, industry actors and civil society owing to differing working cultures and organizational structures. Some of these differences are inevitable, but can nonetheless make it difficult to arrive at a common language and process, reducing the willingness of actors to continue to engage, and undermining trust in the longer run. For example, industry actors are often frustrated by bureaucratic structures and slow decision-making processes in government and civil society organizations.

In the case of India's digital contact-tracing apps, policy-makers were looking for quick, large-scale solutions to manage the pandemic. The select "volunteers" who were able to help the government develop the app quickly were mostly from the private sector or had prior industry experience. Civil society groups, however, emphasized the need for a more inclusive and transparent process in order to adequately consider possible harms and alternative solutions. The legitimacy of the process is as important as the final outcome, even if it slows it down. These differing values, commitments and work cultures contributed to friction between the groups and reduced the space for co-design.

> **Consultations with civil society often do not make it to the products produced by tech companies. Civil society engagement is often only a public relations exercise.**
>
> Indian digital education organization

Proximity to power

Organizations that are closer to, or better heard by, government and technology companies often have more influence in the design and deployment of tech. But this proximity to power also raises the danger of co-option of civil society organizations by these actors. Civil society organizations seek financial support and opportunities to maximize their impact, and engagement with the government and technology companies could help civil society achieve these goals. But this can also compromise their actual and perceived independence. Indeed, many civil society organizations rely on the tech industry for funding, and may appear to be captured by those interests.

> **Addressing cronyism is hard because of the financial levers governments and technology companies wield over civil society organizations.**
>
> Indian digital rights organization

> **Technology companies and civil society organizations must be transparent about their incentives for partnering with each other – the exchange of value for both must be publicly acknowledged in order to build trust.**
>
> Indian digital rights organization

Capacities and resources

Civil society organizations, particularly in the Global South, often lack the resources and infrastructural capacity to engage effectively in co-design processes. Grassroots-level organizations are often already understaffed and under-resourced, and may not be able to direct adequate and sustained attention to co-design processes. The lack of long-term, flexible funding is a major barrier for civil society organizations from developing countries and limits their capacity for sustained and coordinated policy engagement.

In addition, these processes are not typically designed in a way that can draw out the knowledge and experience of civil society actors – whether in terms of language, format or location. There is often a mistaken assumption that because civil society organizations do not adequately understand the technology they will be unable to contribute to co-design processes, or that a prior step of training civil society actors and building expertise is needed. However, civil society can use its understanding of local contexts and social groups to inform various parts of the design process – from the identification of the problem to be solved to horizon-scanning for possible unintended and undesirable consequences – even without "speaking technology".

> **Unlike organizations in the North that have dedicated campaign directors, civil society organizations do not have the resources for sustained or coordinated policy engagement.**
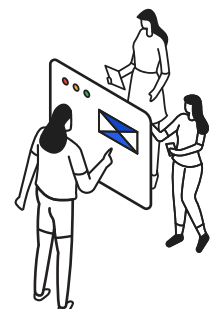>
> Indian digital rights organization

> **We need to build the digital capacity of grassroots organizations who work on a broad set of social justice issues, beyond digital rights.**
>
> Indian gender and technology organization

> **Successful civil society campaigns are born out of continuous institutional engagement.**
>
> Indian digital rights organization

(5) Towards equitable co-design strategies

Cooperative frameworks for partnering with civil society in the design of technology are needed to build trust between institutions and to steer natural friction towards constructive engagement.

Such frameworks should rest on the recognition of mutual value across all actors, whether they are from civil society, the tech industry or government.

The concept and practice of co-design in its many iterations can serve as a model in this regard. By studying, adopting and adapting the approaches of successful participatory design, inclusive design and design justice projects, collaborations in the context of technological design have the potential to offer more effective and equitable solutions to social, political and environmental crises.

However, actors involved in such collaborations between civil society and the tech industry and/ or government should keep in mind the risks and challenges involved, including the potential for co-option of grassroots knowledge and expertise, the effects of power imbalances within partnerships related to financial and other resources, and the possibility that greater social hierarchies will remain unaddressed and unchanged.

Since the co-design relationships explored in this paper, particularly in relation to COVID-19 technology, remain aspirational, more research is needed to assess whether these cooperative frameworks are strong enough to address issues such as power, inclusion and justice. There is also a need to better articulate and develop the incentives for all parties to participate in co-design relationships, especially those already in power. A future study, for example, would examine the potential advantages and disadvantages of co-design from the perspective of private-sector companies.

In the meantime, the following can be seen as necessary considerations for building effective and equitable co-design partnerships:

5.1 | For tech companies

1. Build-up to co-design

Co-design requires a familiarity with working cultures, a common language and some degree of trust. This cannot emerge through a one-time engagement effort, and will require numerous small "on-ramping" steps first. This could take many forms, including regular dialogue with leading civil society actors, focus group discussions on important issues, product evaluations and even co-research projects in which civil society organizations themselves conduct research, similar to consumer insight companies.

2. New formats and expertise

New formats for engagement that can best draw out relevant civil society expertise and knowledge are needed. Many civil society actors have relevant local or contextual knowledge, but may not necessarily "speak technology". New formats of engagement could include working with unexpected collaborators, such as creative professionals, storytellers or artists, as well as those with specialized facilitation skills and interdisciplinary knowledge. Technology companies could also work with "boundary institutions", such as academic institutions, that can help provide a neutral platform and build bridges between industry and civil society.

3. Early and sustained engagement with multiple stakeholders

Co-design must include multiple stakeholders across the ecosystem. Stakeholders at various points or levels in an ecosystem can have differing priorities and interests, and these need to be understood, articulated and considered throughout the design and deployment stages. Accounting for all the relevant stakeholders and engaging with them early in the design process, and in a sustained manner, is critical.

4. Transparency

It is vital that technology companies maintain transparency about their objectives in engaging with civil society actors. More specifically, they should be transparent as to how and to what extent consultations will be used to inform the design of their technology products and services. Civil society organizations are typically concerned that their engagement will be used as a way to improve the image of tech companies, as a public relations exercise. This can be partially addressed through more transparent engagement and acknowledgment of the value of collaboration for tech companies, and what, in turn, they have to offer civil society.

> " It is not just about developing inclusive products and projects but a broader power shift, where local actors are in the lead of 'tech for good' projects. We need a mindset shift to make that the norm, rather than the exception.
>
> EU robotics organization

5. Designing/decentralizing for other contexts

Large technology companies with a significant global footprint should ideally have a long-term presence in their key markets. This can help them better understand user needs and concerns, test and iterate on products and build meaningful relationships and trust with local civil society actors.

The focus should be not only on creating more inclusive platforms for civil society to engage with technology companies, but also on decentralizing decision-making. The ultimate goal in this regard and on the part of technology companies should be to reduce the distance between decision-makers and those affected by such decisions. This should include hiring locally for important decision-making roles within the organizations.

> " Most organizations have a one-way relationship with their country teams. This must change. We need to enable local leaders to have meaningful leadership roles.
>
> Indian digital rights organization

> " Instead of globalizing the local, we need to localize the global.
>
> Indian gender and technology organization
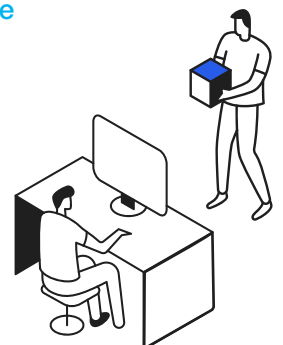
6. Ecosystem investments

Digital rights and policy organizations across the Global North and Global South receive funding from large technology companies. The degree of dependence is even greater for organizations in the Global South. Rather than project-based funding, technology companies should support the development of the broader ecosystem. This could include supporting civil society with long-term and flexible funding, helping grassroots-level organizations to build digital capacity, and seeding new independent research centres. This can lead to co-option, of course, and it speaks to problems that arise from a general lack of investment in civic infrastructure and the closure of civic spaces. However, these investments are necessary given the lack of alternative sources of funding. Moreover, these types of ecosystem investments are already made by technology companies in organizations and coalitions in the Global North.

> **It is important to focus on big-picture ecosystem investments that can facilitate knowledge transfer and opportunity transfer. Success cannot be judged at a project level alone – a broader, more panoramic view is needed.**
>
> EU robotics organization

BOX 3 | **Example: social enterprise helps hospital management in Mumbai**

In India, a "tech for good" social enterprise was able to help the Mumbai municipal authorities with hospital bed and equipment management using machine learning tools. A vital enabler was a pre-existing relationship with the authorities and clarity about the process and outputs in working together. Both groups understood clearly what was needed and there was already a basic level of trust.

5.2 For civil society

1. Strategic engagement opportunities

Civil society actors need to be on the lookout for relevant engagement opportunities that will enable them to provide the right information at the right time to those designing and developing tech solutions. This can be achieved when engagement between civil society and government or tech companies is ongoing and long-term. This will enable civil society organizations to anticipate issues and provide constructive feedback over time, instead of engaging only reactively.

2. Strategic engagement formats

Civil society actors also need to position themselves as strategic engagement actors. The tone and manner of engagement can make a significant difference in whether their suggestions are taken onboard. Civil society actors often do not understand how the private sector works, and thus do not make adequate investment in translating their concerns into something that is achievable and relevant for private-sector companies.

3. Evidence before ideology

In order to engage effectively with tech companies and convince them of their expertise, civil society organizations need to use concrete, empirical evidence. Often, when engagement is based on ideological factors, it is more easily brushed aside by decision-makers. In gathering such evidence, information should be translated and tailored for decision-makers so they can process it more easily.

4. Independence

Since many civil society organizations working in the digital space get their funding from tech companies, it is important that they assert and demonstrate their independence from their financial sponsors. Strategies available to civil society organizations include diversifying funders, working through consortia and focusing on areas in which companies do not have an active commercial interest.

5. New capacities

Civil society organizations need to invest in people who understand both grassroots-level social justice and development issues, as well as those who can engage in conversations about technology design and policy.
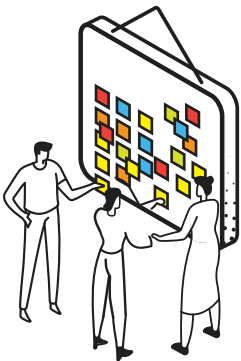
> **We were unable to develop a cooperative framework because we didn't know what agency to engage with.**
>
> Indian digital rights organization

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Acknowledgements

Endnotes

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