

Civil Society in the Fourth Industrial Revolution: Preparation and Response

In collaboration with Pact

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Executive summary

Grasping the opportunities and managing the challenges of the Fourth Industrial Revolution require a thriving civil society deeply engaged with the development, use and governance of emerging technologies. It is, therefore, important to highlight and share more widely the ways in which civil society organizations (including advocacy, development, humanitarian and labour unions) are using digital and emerging technologies to increase impact and efficiency, as well as how they are advocating for responsible practice across the sector and society.

Starting October 2017, the World Economic Forum Society and Innovation team initiated consultations for a novel initiative on Preparing Civil Society for the Fourth Industrial Revolution, with the aim of tracking and disseminating efforts while encouraging new collaborations across the sector linked to the responsible use of emerging technologies. Over this time, 154 civil society leaders and experts participated in 63 interviews and four workshops, collectively taking stock of the ways in which civil society is currently responding to digital and emerging technologies in their work and how societal challenges might be better addressed through future cross-sector partnerships.

The ensuing debates and discussions reveal three cross-cutting considerations as to how civil society can participate in, and in many ways lead, the Fourth Industrial Revolution:

1. **Civil society organizations face pressure to play a diversity of roles¹ in the technological and institutional context of the Fourth Industrial Revolution**

As the Fourth Industrial Revolution matures, civil society must recognize new, distinct roles for the sector in responding to existing and new societal challenges. Several examples have already emerged, including roles as watchdogs, advocates and facilitators. To successfully navigate pressure to play multiple roles, civil society organizations will need to enter into cross-sector partnerships and will require the development of new sets of skills. Importantly, insights from this research highlight that civil society cannot stand still as the relationship between society and technology changes.

2. **Civil society organizations must resolve a range of tensions to responsibly play these roles and respond to the governance and use of emerging technologies**

How civil society organizations grapple with tensions in their approach to innovation and technology will affect their ability to positively impact and influence the Fourth Industrial Revolution. Those tensions include:

- Independence: How do civil society organizations stay independent and critical as part of civil society while participating in corporate digital platforms or using algorithmic tools from the private sector?

- Motivations: What is driving civil society organizations' motivations to use technology? What problems are they trying to innovate for?
- Architecture: How do civil society organizations design for innovation, considering organizational structure(s), culture(s), talent(s) and other factors?
- Investment: How do civil society organizations make decisions on using limited resources on technology towards short-term and long-term change?
- Learning: How do civil society organizations structure knowledge management and learning, weighing both global best practices and context-specific details?

3. **Civil society organizations need to make critical investments to lead by example in key areas of the Fourth Industrial Revolution**

Civil society organizations have long-standing knowledge and histories in working with the most vulnerable populations in difficult contexts. To capitalize on its experience of and proximity to community issues, the civil society sector should make investments in a number of areas to lead the way in modelling key elements of a human-centred Fourth Industrial Revolution:

- Responsible, rights-based use of digital and emerging technologies
- Inclusive and participatory approaches to social innovation and technology
- Models for translation across sectors, disciplines and experiences on technology and society issues

The nature of technological change, combined with other drivers such as shrinking civic space,¹ means that civil society organizations cannot change on their own, or in silos. Knowledge-sharing, cross-sector learning and multistakeholder cooperation and investment will be needed both to accelerate civil society's readiness for the Fourth Industrial Revolution and to ensure that civil society organizations are active leaders in shaping the development and adoption of technology in ways that are beneficial to the communities they serve.

This publication is intended as a reference document for civil society actors and partners from government and business who are willing to engage with one another to build a thriving social sector in a future characterized by technological change. The complex and uncertain nature of emerging technologies means that civil society organizations must partner with other sectors, seek external expertise, and access stakeholder networks and resources from other areas to accelerate the right mix of incentives and capacity building.

¹ See The Future Role of Civil Society: http://www3.weforum.org/docs/WEF_FutureRoleCivilSociety_Report_2013.pdf p9

Introduction

The extensive historical, economic and social literature detailing the impact of past industrial revolutions illustrates the numerous ways in which technological innovation created both widespread benefits and a range of negative consequences. As is often the case, marginalized populations bore the greatest costs associated with technological development, as evidenced by many examples in history. The arrival of the steam engine, steel manufacturing and railways corresponded with unsafe factory working conditions, the use of child labour, rising levels of air and water pollution and the proliferation of disease in urban communities.

The negative impacts of industrialization led to the rise of organized, citizen-based activism focused on the rights of workers and improving quality of life within and across communities. Faith-based charities, labour unions and friendly societies worked to improve worker conditions and reduce the impact of risks that emerged as society transformed in mid-18th century Great Britain. Since then, civil society, more broadly in the form of global NGOs, trade unions, social movements and religious organizations², have constantly advocated for workers, marginalized populations and others when the benefits of industry and government during these industrial revolutions failed to trickle down. Today, as detailed in [The Future Role of Civil Society](#) report, a huge range of organizations are engaged in championing human rights, delivering emergency services and assistance, and fostering needed dialogue on societal values and goals.

Throughout their history, civil society organizations have innovated to address emerging challenges and improve their effectiveness in relationship to existing ones, adopting new approaches to leveraging the power of populations, new ways of organizing and influencing policy change. Civil society leaders such as Octavia Hill (National Trust), Henry Dunant (Red Cross), Isaac Myers (Colored National Labour Union), Emma Mashinini (South African Commercial, Catering and Allied Workers Union) and others began to organize their efforts and use private goods and resources for public benefit in new and innovative ways. Mass education, healthcare, safety measures and other social services scaled by governments find their origins as prototypes and policy positions advocated for by civil society in the late 1800s. Today, these movements have resulted in the complex and varied social systems that exist in most countries around the world. In many cases, civil society organizations themselves have become global organizations.

However, there is inevitably a lag between the emergence of a social challenge and a systemic response supported by enforced law and investment by businesses. In both the first and second industrial revolutions, it took several generations of civil society advocacy and policy support to adopt widespread

systems of social protection and response to help people respond to the impacts of the technological changes of the time. As just one example, while use of child labour in factory settings became widespread in Britain in the 1770s, the first laws governing the use of child labour emerged in 1803 but were only effectively enforced in the middle of the century.³

The Fourth Industrial Revolution is a global phenomenon characterized by the convergence of digital, physical and biological technologies and is still in its early stages. It builds directly on the third, digital revolution, which has connected billions of people by mobile devices “with unprecedented processing power, storage capacity and access to knowledge”.⁴

As the Fourth Industrial Revolution builds on the digital foundations of the third, the speed of technological advancements today has already gone beyond historical precedent.⁵ The rate of change under way has significant implications for the ability of civil society to innovate and respond using historical approaches and existing resources.

As with prior industrial revolutions, which transformed how value is created and distributed, the Fourth Industrial Revolution will have a disruptive impact on society. Emerging technologies such as artificial intelligence, distributed ledgers, biotechnologies and neurotechnologies will alter how people live and even how humanity perceives and understands itself. These technologies will tend to scale exponentially thanks to digital networks and interoperable systems. But they will also emerge physically, manifesting in the real world in the form of smart products and services, increasingly defining our physical environments and our relationships with both other individuals and institutions. They will even embed themselves in our biological selves, shaping the experience of our bodies and the world. In this way, the Fourth Industrial Revolution will have profound social impacts that far surpass those of previous industrial revolutions.

With the digital revolution still unfolding around the world, the technologies of the Fourth Industrial Revolution offer opportunities for civil society organizations to deploy powerful new tools to better achieve their goals. Expanding access to and use of the internet, mobile phones and other information and communication technologies have led many civil society organizations to explore the use of digital technologies across almost all functional areas, including monitoring and evaluation, service delivery and communication with stakeholders. Similarly, the recent emergence of technologies that build on these digital foundations – such as machine learning algorithms or the use of drones – has prompted civil society leaders to experiment with their use in a range of contexts to access new functionalities or to seek efficiencies.

But how effective have these technologically focused activities been in solving the most important problems facing

² The World Bank refers to civil society as the sphere (or sector) “outside the family, the state, and the market...[including] a wide array of non-governmental and not-for-profit organizations that have a presence in public life and express the interests and values of their members or others, based on ethical, cultural, political, scientific, religious or philanthropic considerations.”

communities and in supporting the core missions of these civil society organizations? What categories of needs are investments in Fourth Industrial Revolution technologies and related experiments trying to address?

While innovation is a well-researched topic in commercial and government contexts, there is relatively limited data on how civil society players strategically invest in and deploy technology. According to NetChange's [2017 survey on non-profit technology use](#), only 11% of non-profit respondents viewed their organizations' digital strategies as effective. While there have been several attempts at mapping social innovation activities across society⁶, these mapping exercises rarely capture specifically how non-profits have been using digital and emerging technologies to better meet the needs of the communities they serve.

This document goes a small way towards filling this gap. In the initial stages of the World Economic Forum's project Preparing Civil Society for the Fourth Industrial Revolution, we engaged 154 civil society leaders and experts, conducted 63 interviews and held four workshops with dozens of senior leaders across NGOs, labour movements and faith-based organizations.

These interviews and consultations aimed to take stock and highlight how civil society organizations are already responding to digital and emerging technologies—for example, by piloting and using these technologies, or by advocating for responsible practice in public, private and civil society use. This paper is an attempt at concisely summarizing the key points and interesting examples of ongoing work that emerged from these discussions.

This document aims to support members of civil society organizations as well as practitioners and strategy leaders from industry, philanthropy and the public sector on:

- How civil society has begun using digital and emerging technologies
- How civil society has demonstrated and advocated for responsible use of technology
- How civil society can participate and lead in a time of technological change
- How industry, philanthropy, the public sector and civil society can join together and invest in addressing new societal challenges in the Fourth Industrial Revolution

Section 1 highlights five categories of use related to how civil society organizations have been piloting digital and emerging technologies, with key examples from various organizations in civil society. Section 2 describes how the sector has begun critically assessing its own use of these technologies. Section 3 details three cross-cutting considerations for civil society and its readiness for the Fourth Industrial Revolution.

Relevant digital and emerging technologies in the context of the civil society sector

- **Civil society data.** This includes the use of internal data, such as administrative data and beneficiary/survey data, citizen-generated data, as well as open and crowdsourced data available from government databases and physical sensors in the built environment.
- **Private sector/proprietary data, metadata and the Internet of Things (IoT).** This includes big data (digital translations of human actions, interactions and transactions picked up by digital devices and services), including call detail records (CDRs), GPS, social media, nanosatellite imagery, online marketplace data, credit/debit card data, night lights, IP addresses, unmanned aerial vehicles (UAVs); intelligence products; data sharing research partnerships, challenges and experiments; and data dashboards.
- **Artificial intelligence and machine learning.** This includes the use of various types of traditional algorithms within existing data structures (for prioritization, classification, association and filtering), machine-learning algorithms, deep-learning algorithms and some forms of robotics.
- **Blockchain and distributed ledger technologies (DLTs).** This includes cryptographic verification, crypto-philanthropy, remittances, cash-based interventions in crises, regulatory compliance and auditability, digital identification.
- **Drones and autonomous vehicles.** This includes remote sensing and cargo delivery (particularly in humanitarian crises).
- **Multidimensional printing (or 3D printing).** This includes rapid prototyping, 3D scanning, moulds and tools, digital manufacturing and personal fabrication.
- **Virtual, augmented and mixed reality.** This includes initiatives in fundraising, raising awareness, empathy building, creative visualization of non-profit impact, distance learning platforms.
- **Biotechnologies.** This includes emerging biotechnologies, such as gene editing, and the fast-evolving social context (business and governance models) in which they are developed and applied.

Section 1: Civil society use of digital and emerging technologies

Civil society organizations have engaged with digital and emerging technologies to address and solve various categories of problems. Instead of focusing on individual technologies, this paper presents a taxonomy of functions enabled by these technologies including:

- Understanding communities and their needs
- Providing precision service delivery
- Communicating new information more effectively
- Tracking, compiling and verifying information
- Forecasting trends and influencing decision-making

While these use cases may demonstrate possible, context-specific benefits for different kinds of civil society goals, missions and purposes, they are not meant to be prescriptive for all civil society organizations to use or invest in.

1. Understanding communities and populations, their needs and environments: Often in the form of maps, data visualizations, dashboards or statistical outputs, civil society has leveraged greater computing, processing and analytics tools, volumes of high-quality data derived from diverse sources, and interoperable structures to develop greater situational (and sometimes, real-time) awareness of populations and the environments in which they live. The data may be administrative (e.g. census data, business records), derived from surveys, come from the web, be citizen-generated (e.g. opinions, votes and recommendations), or come from a variety of sensor technologies (including drone aerial imagery and IoT-enabled sensors). These tools allow organizations to better allocate time, effort and resources, prevent issues before they arise or tackle them more quickly as they do (as early warning systems), and provide improved narratives as to how those problems and contexts have evolved and changed through their own efforts.

“Non-profits have hit a barrier in transitioning from being simply users of technology to digital organizations. Becoming a digital organization will require concerted effort and shared intelligence; working together results in cost savings for organizations that want to do it right.”

Lauren Woodman, NetHope

Humanitarian Data Exchange

The [Humanitarian Data Exchange](#) (HDX) is a project launched in 2014 and managed by the UN Office for the Coordination of Humanitarian Affairs (OCHA) to provide a data-sharing platform for humanitarian organizations. Organizations can sign up to share their data which can be [wide-ranging](#): datasets on population statistics, development funding, refugee movements, infrastructure status, environmental indicators, etc. By providing access to a range of data sources and formats, the HDX allows any interested user to take stock of issues in the development space quickly, with a wide spectrum of precision and granularity. For example, data can be used, on the one hand, to understand overarching [trends in the types of disasters that have been happening in the past 10 years](#) or [access to different energy sources for refugees](#) globally. On the other hand, they can be used to create data visualizations of more bounded problems and contexts; for example, the [number and location of Rohingya refugees](#) in Myanmar and Bangladesh.

World Wildlife Fund (WWF) aerial drone imagery for forest damage

In 2008, WWF [partnered](#) with North American paper manufacturer Domtar as part of a [larger initiative](#) with the Four States Timberland Owners Association to promote sustainable wood harvesting practices under sustainability criteria defined by the Forest Stewardship Council (FSC). In 2016, this initiative saw the introduction of aerial image-mapping drones, which have been used since to monitor large areas of forest in Arkansas to check for compliance with FSC standards. In particular, drones have been used to provide a real-time understanding of the health of the area of forest in Arkansas, with large gaps in forest cover suggesting illegal logging and large patches of foliage discoloration (at a time when leaves should be green) hinting at a possible pest or disease. By identifying such problems quickly, Domtar and the WWF have been able to prevent forest damage sooner than if the forest area had been monitored on foot.

MercyCorps' Syria Incident Frequency Dashboard

In Syria, MercyCorps launched the [Syria Incident Frequency Dashboard](#), a resource in which data is collected from disparate sources (e.g. information on the timing and location of bomb strikes and other violent incidents), layered on to a map that also includes information about where different political groups have power and influence. This open resource helps to coordinate emergency and aid workers responses and deliveries by providing a real-time picture of where communities are most in need of support.

2. Providing precision service delivery: Access and sharing of data from various sources provide situational awareness to give greater context for human-centred service design. Combined with certain emerging technologies, these clearer views have a powerful effect on how civil society organizations deliver their services. For example, by using additive manufacturing technologies to create specific items, and by using drones to deliver them to specific places, civil society organizations have found new opportunities in efficiency and quality of service delivery by getting the right things to the right places quickly. As these tools become cheaper to purchase, civil society organizations have begun applying them in contexts where delivery of supplies and equipment are urgently needed and transport and supply chain infrastructures are underdeveloped.

Gavi drone delivery initiative

In 2016, Gavi, the Vaccine Alliance (in partnership with drone-delivery enterprise Zipline, the United Parcel Service and the Rwandan government) launched a drone delivery initiative to carry blood, vaccines and medical supplies throughout Rwanda. Gavi recognized that many medical clinics in Rwanda are difficult to reach via traditional means of transport, due to the specific morphology of the landscape (e.g. mountains to be climbed, poor-quality roads). With this initiative, partners aim at increasing vaccine coverage with a target of 7 million deliveries in western Rwanda across an area of about 7,000 square miles.[7]

Oxfam 3D printing in crisis environments

Oxfam in 2014 began trialling [additive manufacturing technologies in its Lebanon office](#) as part of an effort to tackle sanitation issues across the country. The use of 3D printing in this context allows Oxfam to improve the quality and prolong the life cycle of equipment which is, in large part, donated and thus often obsolete or out of date, or made up of parts that can only be sourced from where the equipment originated – often in developed countries. Additive manufacturing provides a means to acquire the precise components needed without having to rely on long-distance shipping or the manufacturing of specific parts which may no longer be in production. 3D printing is additionally used in other applications, for example, to create bespoke handwashing fixtures, or even emergency shelters with larger-scale 3D printers.

Handicap International 3D prostheses printing

In 2016, Handicap International began to trial 3D printing technologies for the manufacturing of transtibial prostheses in Togo, Madagascar and Syria, countries that lack the technology development needed for creating individually measured prosthetics. With this effort, Handicap International has sought to test whether the use of additive manufacturing technologies could help deliver more physical rehabilitation services of higher quality in

developing countries. In particular, the use of 3D printing for manufacturing prostheses helps to bring orthopaedic device production into local areas so they are more accessible, while driving down the costs of logistics processes where fully manufactured items are sent to these countries.

3. Communicating new information to various communities and stakeholders: It is imperative for civil society organizations to report and showcase what they do in order to advocate for issues and marginalized communities, demonstrate the impact of their work, and solicit funding and donations. Civil society organizations have initiated technology pilots to enhance their communication abilities, from giving immersive experiences from places where programmes are being delivered through virtual and augmented reality to providing data-driven evidence through data visualizations and artificial intelligence chatbots.

WaterAid AI chatbots

In 2018, clean water charity WaterAid has launched a Facebook accessible chatbot to solicit donations for clean water projects. The initiative aims to provide a more interactive means for donors to understand the issues and contexts to which their donations would be directed. As an example, the WaterAid chatbot can introduce the user to a villager in a remote area of Sierra Leone and use an [interactive artificial intelligence-based chat](#) to show photo and video media of the village. Such interactive media documentation gives users a sense of how donations are utilized, while additionally providing a layer of education on clean water issues that would not be achievable via a simple donation portal.

PATH Visualize No Malaria

In 2015, PATH and the Tableau Foundation launched the [Visualize No Malaria](#) initiative in Zambia, in which malaria responders in the country were empowered with real-time data about malaria outbreaks so that resources could be deployed and outbreaks contained more quickly. Using data dashboards about incidents of malaria outbreaks and about resource deployments, the performance of responders could be improved and feedback loops defined to better understand quality control. In three years, Visualize No Malaria resulted in a 92% decline in malaria-related deaths and an 85% decline in malaria cases. The approach could be scaled to other countries and for other diseases.

4. Tracking, compiling and verifying information as evidence: The disbursement of aid and assets (e.g. monetary, physical, digital) to communities and individuals is a core activity for several civil society organizations, particularly those engaged in humanitarian and development work. Transferring money, medicines, foodstuffs or other kinds of aid requires attention to tracking, traceability and verification, and these functions are often enabled by

digital technologies. Civil society organizations have been exploring pilots in distributed ledger technologies (DLTs) and the linking of disparate databases to assist in the verification of records and transactions as well as improving the transparency of their work and resilience against fraud, corruption and opaque value chains.

Other civil society organizations collate digital artefacts (tweets, images, or other data points) to use as evidence in identifying human rights violations and delivering programmes. Such digital information often requires several verification checks for it to be useful as evidence and this is often achieved through “crowdsourcing” or citizen-science type processes.

Amnesty International Amnesty Decoders

[Amnesty Decoders](#) is an online citizen science-style platform where volunteers around the world help tag and analyse pictures, documents and other information to help human rights researchers. Example projects include identifying and collecting sexist and racist tweets against women on Twitter (as part of an effort to inform a larger machine-learning algorithm to do so automatically), identifying the [origins and extent of oil spills](#) in Nigeria through image tagging, and [mapping remote and vulnerable villages](#) in Darfur by tagging satellite imagery. By using human effort to track, collate and verify digital artefacts, these data can be corroborated and become useful as evidence in policy arguments and advocacy work.

World Food Programme (WFP) Building Blocks

Launched in 2017, [Building Blocks](#) is a WFP initiative that seeks to transform how cash transfers are given to those vulnerable populations served by the WFP. The project uses DLTs to help increase transaction speed while decreasing the likelihood of fraud or data corruption and removing the need for financial intermediaries in these contexts. The Building Blocks programme has already shown a 98% reduction in money transfer fees and is now seeking to explore the use of DLTs in digital identity management. The goal is to link DLTs to UNHCR’s existing biometric authentication technology so that vulnerable populations can receive aid and benefits where identity provision, certification and management are problematic or non-existent.

Cancer Research UK Genes in Space

In 2014, Cancer Research UK launched [Genes in Space](#), a game-based citizen science initiative in which players navigate a spaceship to collect a fictional substance, “Element Alpha”, which actually represents genetic cancer data. By finding patterns through the map in the game, users helped Cancer Research scientists analyse patterns in cancer data. According to Cancer Research UK, the game’s players analysed the entire genomes of 1,980 patients, each checked 50 times for accuracy. By

engaging players through a game interface to do what would otherwise be a repetitive exercise in analysing medical data, [Genes in Space](#) helps to turn data into useful information for practitioners through extensive human checks on digital data.

5. Forecasting trends and influencing decision-making:

With more data and stronger processing power comes a greater ability to detect trends, establish correlations and make predictions. Often with assistance from data consultancies and civic tech actors, a number of civil society organizations have experimented with predictive analytics and algorithmic approaches to quantify and model the issues they work on, to direct resources proactively rather than reactively, and to be able to identify where resources are either over- or under-applied.

International Rescue Committee (IRC) Placement Algorithm

The IRC’s innovation team, the Airbel Center, is piloting and scaling a machine-learning algorithm developed by the Stanford University Immigration Policy Lab that matches refugees in areas where they are most likely to thrive when resettled. The placement algorithm analyses historical data on “refugee demographics, local market conditions, individual preferences and outcomes” to generate predictions for ideal resettlement locations and inform decision-making. The IRC is working with the Lutheran Immigration and Refugee Service and other potential resettlement agencies to roll out a pilot of the algorithm.

Crisis Text Line

Launched by DoSomething.org in 2013, [Crisis Text Line](#) (CTL) is a free text-messaging hotline where volunteer crisis counsellors help and advise people in crisis. CTL is notable for taking historical data from its system about what types of message content tend to indicate which kinds of crises so as to develop a predictive “triage” system whereby incoming text messages are algorithmically assessed and placed into a queue in terms of the severity of the crisis. The same predictive analytics also alert crisis counsellors to the types of situations they may be faced with based on specific keywords in incoming messages. [Crisis Trends](#) is an open-data portal that uses anonymized data from CTL to create data visualizations of patterns of crises in terms of where and when they occur and the type of crisis in question, also helping to better predict, for example, at what time of day certain types of issues are more likely to occur.

Section 2: Civil society response to Fourth Industrial Revolution challenges

A [recent timeline](#) curated by New York University's AI Now Institute describes at least 20 "scandals" in 2018 related to how companies, governments and civil society have made decisions on technology use, including news reports and revelations on:

- [Cambridge Analytica](#) harvesting 50 million Facebook profiles to target US voters in the 2016 presidential election
- Facebook silencing Rohingya [reports of ethnic cleansing](#) in Myanmar
- Launching of rural version of China's SkyNet, "Sharp Eyes"
- [Strava data heatmaps](#) exposing locations of global military bases
- Flawed algorithm used to identify fake test results, leading to [deportation of thousands of student visas](#) by the Government of the United Kingdom
- Tesla's fatal autopilot car crash and Uber's fatal self-driving car crash
- Google's plans to launch [Project Dragonfly](#)
- IBM Watson's recommendations of "unsafe and incorrect" [cancer treatments](#)
- The discovery of the [Red Rose vulnerability](#) in Catholic Relief Service's digital payment system

These decisions related to the use of digital and emerging technologies by companies, governments and civil society groups have ushered in new challenges and entrenched existing difficulties associated with accountability, fairness, trust and transparency in society. Civil society organizations have been outspoken on these issues. As a watchdog, [BSR was commissioned by Facebook](#) to conduct an independent human rights assessment of the company's presence in Myanmar. And in censuring and calling out the actions of technology companies, a group of NGOs issued a [joint statement against Google's Project Dragonfly](#).

Beyond its role in outward advocacy and in responding to issues in sectors outside its own, emerging examples in civil society have begun also focusing on the inward management of the sector's own technical and organizational systems as well as in those issues emerging from the Fourth Industrial Revolution that involve its own practice. Civil society has been responding to these challenges in its use of emerging technologies in multiple ways. The following section reflects on five categories of civil society's response to digital and emerging technologies.

1. Adoption of ethical principles and responsibility frameworks

Crises in data protection, digital misinformation and growing ethical concerns related to technology highlight the need for the right mix of regulations, principles and standards to govern how these powerful, emerging technologies shape societies.

Non-profits have become more aware of data protection needs and practices in their organizations since the adoption of the General Data Protection Regulation in the EU. However, as several categories of potential digital harms fall outside the regulation and its jurisdiction, sub-sectors and groups within civil society have begun developing and adopting principles and standards for responsible and ethical use of digital and emerging technologies, especially with vulnerable populations.

“**The risks of introducing machine learning into domain areas such as criminal justice, health and others is that governments, companies and even civil society may unintentionally scale inequality even faster – with less transparency and accountability than ever before.**”

Mark Latonero, Data and Society

Harvard Humanitarian Initiative Signal Code

In 2017, the Harvard Humanitarian Initiative published the [Signal Code](#), which translates existing human rights standards into the context of humanitarian information activities, such as mobile devices, WiFi provision, data collection, storage and analysis and biometric registration tools.

International Committee of the Red Cross Handbook on Data Protection in Humanitarian Action

The International Committee of the Red Cross in 2017 published its [Handbook on Data Protection in Humanitarian Action](#), which aims to help staff in international humanitarian organizations apply relevant data protection standards in data collection and processing.

Unmanned Aerial Vehicle (UAV) Code of Conduct

Launched in 2014, the Humanitarian UAV Network's [Code of Conduct](#) provides guidance to humanitarian organizations to use UAVs in responsible and ethical ways. This is an open document developed and revised by a network of over 60 organizations seeking the continued use of UAVs to increased public confidence in their impact and safety.

Oxfam Responsible Data Toolbox

Oxfam has developed a [Responsible Data Management](#) toolkit, a guideline and training pack to help humanitarian organizations in managing programme data and protecting the rights of the people whose data is collected in humanitarian programme delivery. The [training pack](#) defines responsible data management, offers planning processes for data collection, storage and use, and helps organizations identify potential risks and prepare for contingency scenarios.

2. Participatory approaches and citizen engagement

As civil society matures in its use of technology, participatory approaches to technology-enabled or data-driven projects and programmes feature heavily in their work. Civic and citizen engagement are central to programme and project design, as a means to come to shared understandings and definitions, to identify and mitigate risks before they occur, and to imbue projects with legitimacy as the people they affect participate in their design and implementation.

Moreover, the participation of beneficiaries can often improve the quality of emerging technology projects in civil society, especially in instances where citizen data and personal information help to inform the design of algorithms, or are the very data needed to carry out projects successfully.

Participatory approaches help to augment the effectiveness of technology-enabled projects in this space, identifying areas of shared concern as well as distributing some monitoring functions to make gaps in the data or in project implementation more easily identified.

Global Symposium on AI and Inclusion

The [Global Symposium on AI and Inclusion](#), co-hosted in 2017 by the Institute for Technology and Society Rio and Harvard's Berkman Center for Internet and Society, convened 170 participants from more than 40 countries. Supported by the Ethics and Governance of Artificial Intelligence Fund and other donors, the symposium focused on global digital inequalities and the risks of machine learning and AI to marginalized populations, including LGBTQI individuals, women, youth, disadvantaged ethnic groups, and people with disabilities.

World Wide Web Foundation Africa Summit on Women and Girls in Technology

The 2018 [Africa Summit on Women and Girls in Technology](#) was a collaboration between the World Wide Web Foundation and a network of government and international organizational partners. The summit took an active focus on how to include the voices and interests of women in Africa in technology and digital policies. This summit builds on the Web Foundation's ongoing work in fighting for digital equality and protecting the rights of women online.

Making All Voices Count

As a programme run by Hivos, Ushahidi and the Institute for Development Studies between 2013 and 2017, [Making All Voices Count](#) provided grants to support innovation and technology for good governance, developed a research repository of evidence on innovation processes for accountable governance and engaged with policy-makers and other stakeholders to communicate impact. In total 178 grants were issued and each programme was evaluated to generate evidence on how various technologies can contribute towards greater accountability, openness and citizen engagement.

3. New institutional models and alternative governance

Civil society organizations have become increasingly aware of the importance of steering technological innovation towards fair and positive outcomes by the means of appropriate institutional and governance frameworks. In some instances, civil society organizations have begun exploring new forms of institution-building in response to challenges in digital and emerging technologies (e.g. data trust models to share data between organizations under defined frameworks). Meanwhile, other new forms of civil society organizations are concerned specifically with the adoption of ethics and principles in the use of emerging technologies, focusing on digital inclusivity, participation and data governance.

Data Trusts

Building on almost 1,000 years of legal precedent, [data trusts](#) are contracts giving power to trustees to make decisions on how data assets can be used on behalf of the group. Data trusts can “steward, maintain and manage how data is used and shared – from who is allowed access to it, and under what terms, to who gets to define the terms, and how.”^[8] In contrast to society's existing data relationships, with the creation of data trusts, trustees are invited into a new, beneficial relation with their data that all parties can agree on, creating a form of “collective bargaining” for data-sharing relationships. The UK is co-piloting its [first data trusts with the non-profit Open Data Institute](#), in partnership with central and local government. The goal of these pilots is to manage and safeguard data on cities, environment, biodiversity and transport.

The Open Algorithms (OPAL) Project

Developed by the MIT Media Lab, Imperial College London, Orange, the World Economic Forum and Data-Pop Alliance, in collaboration with Telefónica, the [Open Algorithms \(OPAL\) Project](#) aims to unlock the potential of private-sector data for public good. To date, while ample evidence exists on the potential of “big data” sources from companies to help measure and improve socio-economic outcomes, legitimate ethical, commercial and privacy concerns related to the sensitive nature of these data have limited their use. Starting with pilots focusing on cellphone data in Colombia and Senegal with their National Statistical Offices and two major telecom operators, OPAL aims to address these challenges by developing next-generation technological and governance standards through its “state-of-the-art privacy preserving open source platform, open algorithms running behind the firewalls of the data partners companies, and participatory deployment with local advisory and oversight bodies and capacity building activities”. The vision of this project is to democratize insights and use cases derived from these privately held data sources to inform better decisions to fight poverty, disease, illiteracy, urban congestion, crime and other social issues.

4. Capacity building and digital literacy efforts

Several initiatives emerge from civil society organizations related to capacity building and digital literacy. Some of these efforts involve framework development and skills and maturity benchmarking, providing baselines for entities to interpret their organizational and employee literacy as part of their talent development and learning strategy. Other efforts involve knowledge creation of best practices and evidence of digital projects, in the form of toolkits, reports and other outputs. Other projects include specific digital literacy campaigns, through direct and online training sessions that address digital opportunities, design and implementation processes, as well as technical skills themselves.

NetHope Center for the Digital Nonprofit

The [NetHope Center for the Digital Nonprofit](#) is an initiative that brings together development and humanitarian organizations within a network to disseminate best practices and past learnings. The centre has developed tools to help non-profit organizations develop their digital capacity, including the [Digital Nonprofit Ability Assessment](#) that benchmarks organizational readiness for developing and implementing digital transformation strategies, and the [Digital Nonprofit Skills Assessment](#), establishing baseline indicators for digital skills for individual roles as well as for the organization as a whole.

“Digital literacy and learning in general within organisations requires processes that weave responsible data priorities into existing policies.”

Linda Raftree, MERL Tech

Digital Impact Toolkit

The [Digital Impact Toolkit](#), created by the [Stanford Center on Philanthropy and Civil Society](#), helps civil society organizations collect, store and use data in ethical, safe and effective ways. It comprises checklists and toolkits to assess organizational digital readiness and data maturity, as well as a means for civil society organizations to share insights and learnings through a community portal that also provides access to events, funding partners and mentorship.

Data Culture Project

The [Data Culture Project](#) is a hands-on learning programme to kickstart a data culture within the social sector. An initiative of [DataBasic.io](#), the project aims to develop capacity within organizations to undertake data-driven projects through webinars, presentations and in-office training programmes.

Digital Defenders Partnership

Launched in 2012 by the Freedom Online Coalition, the [Digital Defenders Partnership](#) (DDP) provides emergency support for individuals and organizations that face emergency situations online, such as website and email hacks. Through incidental emergency grants to tackle digital emergencies and larger sustainable emergency grants for longer-term support, the partnership enables civil society organizations to build their own capacity to safeguard and respond to digital attacks.

International Federation of Red Cross and Red Crescent (IFRC) Data Literacy Playbook

Developed by the IFRC in collaboration with hundreds of contributing organizations, the [Data Literacy Playbook](#) is a learning guide on organizational data literacy that has been designed with specific downloadable modules primarily targeting data-practitioners in the humanitarian sector. The playbook contains case studies, guidance, toolkits and materials designed to inform responsible data use and data readiness.

MERL Tech

[MERL Tech](#) is a platform and space for discussion, learning and sharing experiences and challenges with the use of technologies for Monitoring, Evaluation, Research and Learning (MERL) in the social impact, humanitarian and international development fields. MERL Tech aims to strengthen understanding of the value, impact and risks of digital technology in MERL and to support learning and discussion on new approaches and tools for MERL work. The community is also focused on strengthening the evidence base and learning on technology used in MERL and technology in development.

Section 3: Cross-cutting considerations for civil society in an emerging Fourth Industrial Revolution

The described use cases and responses to digital and emerging technologies point to three cross-cutting considerations for civil society readiness in an emerging Fourth Industrial Revolution.

1. Civil society organizations face pressure to play a diversity of roles in the technological and institutional context of the Fourth Industrial Revolution

What is the role of civil society in understanding and responding to these new challenges in the Fourth Industrial Revolution with other stakeholders? [SM8 A key function of a thriving civil society sector in democracies is its ability to promote accountability, fairness, trust and transparency in society, particularly in response to gaps and failures across the sectors. The 2013 World Economic Forum [The Future Role of Civil Society](#) report describes the critical and diverse set of roles that civil society organizations and representatives play in society and how these roles are evolving: “Civil society actors are demonstrating their value as facilitators, conveners and innovators, as well as service providers and advocates.” Expanding its engagement with and repertoire of these roles will be needed for civil society to successfully respond to emerging challenges associated with the development, governance and use of emerging technologies.

When it comes to civil society’s diverse roles in the Fourth Industrial Revolution, several examples have begun to emerge.

As an advocate: raising awareness of societal issues and challenges and advocating for fairness and trust

In India, Facebook’s attempt to rollout “Free Basics” (an initiative in which Facebook partnered with local telecommunications providers to offer free internet access to a limited set of services and applications) was [challenged](#) by a coalition of activists, entrepreneurs and open-source advocates. The coalition launched a national campaign (Save our Internet) describing how Free Basics distorted local telecommunications regulations by introducing variable pricing models and violated the basic tenets of net neutrality. After a national level policy debate, the Telecom Regulatory Authority of India banned differential pricing models.

In Australia, the launch of My Health Records (an electronic patient health record that is a partial summary of healthcare treatment received by an individual) met with heavy criticism from civil society organizations after the Australian government’s decision to switch from an informed consent “opt-in” model to an “opt-out” model for citizens. In particular, civil society organizations [objected](#) to the collection of patient and individual data without people’s consent under the “opt-out” model, [ultimately raising public awareness and a change in law](#).

In 2018, Access Now and Amnesty International launched the [Toronto Declaration](#), building from previous discussions on ethical principles in machine learning and AI deployments to provide a starting point for “protecting the rights to equality and non-discrimination in machine learning systems”.

As a watchdog: holding institutions, organizations and individuals to account, promoting transparency and accountability

In 2016, investigative journalism non-profit [ProPublica](#) conducted an [investigation into the use of predictive analytics for crime prevention](#) and found that the algorithms employed were biased against African-Americans. Racial biases in such predictive algorithms are a prime example of issues of fairness and transparency in the use of algorithms and data-driven prediction-based projects.

An initiative emerging from the ThingsCon Responsible IoT community, the [Trustable Technology Mark](#), acts as an indicator of trustworthiness to help consumers make informed decisions about purchasing and using IoT technologies. Elements that help determine whether an IoT application or product is trustworthy include: privacy and data practices; transparency of data usage; the security of the underlying platform(s); the stability and robustness of the technology; and the openness of both the devices and manufacturing, as well as of the data produced and collected.

As a solidarity supporter: promoting fundamental and universal values

The [Workers Lab](#) invests in and incubates scalable and sustainable models that build power for working people by: opening new capital flows (e.g. building [digital tools and prototypes](#)); catalysing partnerships (e.g. [convening](#) technology and civil rights innovators); and demonstrating impactful innovations (e.g. online [platform](#) designed to support young people taking collective action).

The [Citizen Clinic](#) is a public interest cybersecurity clinic at UC Berkeley that helps provide technical assistance for politically vulnerable organisations to defend themselves against online threats. The clinic’s interdisciplinary teams of students “assess threats to targeted organizations, provide risk appropriate mitigations and work collaboratively with clients to implement new policies and technical controls that enhance their cybersecurity.”

As a definer of standards: creating norms that shape market and state activity

The [Center for Humane Technology](#) focuses on humane design, moving away from norms in technology related to addition, attention, manipulation and exploitation. Emerging out of the [Time Well Spent](#) movement, the centre aims to spark a grassroots movement for ethical technology and put pressure on major technology companies for change. This coalition of technologists and chief executive officers is creating new design standards, policy and business models that “more deeply align with our humanity”.

The [Internet Society](#) (ISOC) is a global chapter-based volunteer-driven organization that seeks to promote and preserve the internet’s openness, stability and globally connected nature. Alongside community development and policy advocacy on internet-related issues, ISOC also engages in internet standards and protocol development, primarily by funding – and being the organizational home of – the [Internet Engineering Task Force](#) (IETF), an internet standards development body. In particular, the IETF focuses on the development of open standards for interoperable networks, with an emphasis on the participatory, transparent and voluntary nature of such standards development.

As a representative: giving power to unrepresented or marginalized voices

[Black Girls Code](#) is a social-purpose organization working at the intersection of under-represented racial and gender categories in the technology space more generally. Its mission is to deliver technical and computer skills training within under-represented African-American communities to prepare this group for a labour market increasingly demanding technical skills, and to ultimately train 1 million girls by 2040.

[Lesbians Who Tech + Allies](#) is the largest global LGBTQ professional event, showcasing the work and contributions from its community of over 40,000 LGBTQ women, trans and gender non-confirming individuals, LGBTQ people of color and other underrepresented populations in the technology sector. The summit focuses on amplifying their voices and contributions to technology, as well as supporting their professional growth.

As a capacity builder: providing education, training and other capacity building

Access Now’s [Digital Security Helpline](#) is a free resource for civil society organizations, providing access to “real-time, direct technical assistance and advice to civil society groups/activists, media organizations, journalists/bloggers and human rights defenders”. Such assistance and advice focus on issues including protecting the digital communications and sensitive information of civil society organizations that have been targeted online; helping with organizations whose websites or digital systems have been taken down; and helping organizations that deal with

sensitive and personal information (e.g. in humanitarian contexts) to safely store that information in the event of security breaches.

Civil society in the Fourth Industrial Revolution will continue to be the “diverse and fractious space where minority demands, rights and ideas [can thrive with some degree of independence.”³ Civil society organizations must recognize emerging technology-related challenges to accountability, transparency, trust and fairness as 21st century societal questions requiring the sector to play new roles. Given the varied nature of civil society organizations locally and globally, it has to be expected that not every organization will be able to undertake all these roles autonomously, and that multistakeholder approaches will require a deeper understanding of how to bring the most appropriate organizations and representatives to the table.

2. Civil society organizations must resolve a range of tensions to play these roles successfully

How civil society organizations grapple with pressure and rigidity in their approach to innovation and technology will affect their ability to positively impact and influence the Fourth Industrial Revolution. Five categories of tensions can be identified:

1. Independence – The sector’s digital relationship with the private and public sectors and blurred boundaries within what is considered “civil society”

How does civil society stay independent and critical while also participating in corporate-owned digital platforms or using algorithmic tools from the private sector?

Lucy Bernholz, in her work with the [Stanford Digital Civil Society Lab](#) and [Blueprint](#), details civil society’s dependencies on digital tools, data and digital infrastructure governed by industry and governments. These digital dependencies expose civil society to further constraints and shrinking of its space to operate – by governments attempting to “shut down assembly, expression and privacy” and corporate-designed products and services “that default to their values and may impede the values of civil society”.

Additionally, new communities and forms of organizations are blurring lines within what has traditionally been recognized as “civil society organizations”. Civic tech organizations, digital native communities, academic innovation labs and civic platforms have populated the social good space for the past 15 years, driven by self-trained volunteers exploring specific tools of engagement (e.g. open source, GitHub, etc.). These communities have a sense of civic responsibility and in recent years have begun developing consultancy relationships with traditional civil society organizations.

“ Our dependence on digital data and infrastructure expands both the options for civil action and the levers and forces by which it can be restricted.”

Lucy Bernholz, Stanford Digital Civil Society Lab

³ Lucy Bernholz (2018), *Philanthropy and Digital Civil Society: Blueprint 2018. The Annual Industry Forecast*

“Civic tech groups have developed communities around technical expertise, design and purpose. In the future, these actors could find synergies with traditional charities and non-profits that know how to run campaigns and hold memory of historic oppression and injustice.”

Julia Kloiber, Mozilla Foundation

“Civil society typically adapts by substitution. Just as in the past, society needs new organisations within civil society capable of creating new forms of change and influencing industry. These may not look like organisations that exist today.”

David Sasaki, The Hewlett Foundation

2. Motivations – Factors driving use of technology in the sector

What's driving civil society's motivations to use technology in their organizations? What problems are we trying to "innovate" for?

With pressure from donor organizations, competition for limited funding and “access asymmetry” to technology providers, the civil society ecosystem is often rife with inflated expectations and hype around technology. These factors push organizations to search for use cases for these emerging technologies, rather than find solutions to existing problems in the communities they serve.

These dynamics can leave the sector susceptible to risky, low-impact partnerships. For example, companies and academic researchers may find civil society organizations eager to partner in the use of untested technologies and launch projects in contexts with limited legal protections, consent and organizational accountability to communities.

“Data-driven processes cannot save dysfunctional organizational models or ineffective leadership.”

Emma Prest, DataKind UK

“Technology allows individuals to scale their impact when solving community problems.”

Brian Gallagher, United Way Worldwide

“In using technology civil society must navigate the fine line between experimentation and exploitation, not reflecting the biases of the past. Our future requires true co-creation with end users driving the types of innovation that will impact their lives.”

Aarathi Krishnan, International Federation for Red Cross and Red Crescent Societies

3. Architecture – How innovation and technology are structured in the sector

How do we design civil society organizations for innovation, taking into account their organizational structures, culture, talent and other factors?

There are several trends in how civil society designs for innovation within organizations – with specific opportunities and challenges attached to each type of innovation architecture: centralized innovation R&D labs (e.g. Habitat for Humanity's Terwilliger Center for Innovation for Shelter; International Rescue Committee's Airbel Center, etc.); foresight units (e.g. IFRC's Future and Foresight Unit); innovation accelerators (e.g. World Food Programme; NetHope Center for the Digital Nonprofit; FastForward, etc.); decentralized innovation processes (e.g. UNHCR's a.i. innovation service).

Additionally, organizations are working with capacity-building partners to receive support and inputs to their work:

- Flowminder Foundation's work to process geospatial data and provide products for NGOs to use during crises
- HURIDOCS's work with small human rights groups to verify and process massive new sources of human rights information
- DataKind UK's work as a community of pro bono data scientists helping social sector organizations understand data and build predictive models

“Structuring innovation work as a 'lab' can often introduce a Western, male-oriented construct for what innovation should look like, rather than building on what innovation already looks like in the contexts we work in.”

Chris Earney, UNHCR a.i. innovation service

“In creating the Terwilliger Center for Innovation for Shelter, we've focused our efforts on not just responding to issues at the household level, but working across issues in the housing value chain including financial inclusion and securing land tenure.”

Jonathan Reckford, Habitat for Humanity International

4. Investment – Use of limited resources towards short-term versus long-term social change

How do civil society organizations make decisions on using limited resources on technology towards short-term and long-term change?

In considering technology adoption, civil society organizations must wrestle with investment decisions towards short-term and long-term change. Investing in current digital infrastructure, data literacy and building an organizational data culture often fall outside the scope of short-term project grant funding. Investing in creating platforms and products requires long-term investment and partnerships in systems that could scale impact.[9]

A key element in investment decision-making is in talent procurement: what new profiles shall be hired and can existing organizational structure and staff manage these individuals? Can civil society organizations afford to invest in personnel who might not fit the organizational culture and, therefore, impact the bottom line?

“ We need to move from the project-based view of the world to a platform-based view – in which development organisations are creating the kind of platforms that involve several other stakeholders to tackle global challenges. This is difficult since most of the organisations in the development sector are tied to project funding. ”

Mark Viso, Pact

5. Learning – How organizational learning is structured and how to weigh global best practices (or “what works”) and local context

How do we structure knowledge management and learning, weighing both global best practices and context-specific details?

Learning and knowledge-sharing are difficult within the civil society ecosystem. Due to the nature of their work and funding models, organizations are incentivized to share success stories instead of pain points and reflections on processes in introducing new systems and tools in their organizations. Even when these details are shared (e.g. in global conferences and platforms as case studies, best practices, or “what works”), it can be difficult for organizations to relate these findings to their own organizational and community contexts. In this respect, it is important for any new learning and shared practice to be analysed and assessed by civil society organizations vis-à-vis their specific domains of work, operational models and organizational cultures.

In initiating their “Flying Labs” in different communities, as an example, drones non-profit WeRobotics conducts large-scale needs assessment workshops with groups of academics and practitioners to identify existing problems and specific areas where drones can provide new value – months before even bringing in any drones.

Civil society organizations globally already face significant funding, capacity and operating constraints, but how they wrestle with these tensions and create strategies will ultimately define their relevance and impact.

“ Civil society acts as ‘eyes and ears’ working together with the community to design and apply technology as an enabler to real problems.”

Ed Duffus, Plan International

“ Civil society can play a strong role in shaping positive visions of what communities want the future to look like.”

Kathy Peach, Nesta

“ As organizations mature in their use of technology for development, there is a growing opportunity now to reflect on the power asymmetry and unpredictability that technology can bring. As development practitioners, we are learning that we are both reflections of and creators of our technology, and what we are doing is fundamentally restructuring the world.”

Jonathan Donner, Caribou Digital

3. Civil society organizations need to make critical investments in order to lead by example in key areas of the Fourth Industrial Revolution

An informed and innovative civil society can revolutionize the Fourth Industrial Revolution in advocating and demonstrating:

– **Responsible, rights-based use of digital and emerging technologies**

International human rights law provides a unique lens to evaluate the impacts of AI across different legal jurisdictions and value systems, with the potential to activate mechanisms, frameworks and communities for monitoring. Rights extend beyond ethics and should ground multistakeholder discussions on AI, to avoid “ethics washing”, especially where the adoption of ethics and establishment of ethical review boards can be vague enough to avoid meaningful enforcement.¹⁰

Civil society can promote human rights and play a role in advocating and demonstrating responsible, rights-based use of technology in its work. Building on the sector’s fundamental ethics and duty of care, civil society has the potential to lead the way in understanding potential digital harms not covered by current legislation (e.g. defining group data protection) and model what responsible data practice looks like in work with vulnerable groups. Resources such as Harvard Humanitarian Initiative Signal Code and Stanford Digital Civil Society Lab’s Digital Impact give civil society organizations new language and guidance for the safe and effective use of data.

– **Inclusive and participatory approaches to social innovation and technology**

Civil society organizations bring long-term domain expertise, community connections and inclusive approaches that are critical to the human application of technology, as they take into account experiences of identity, power and historic oppression that are not often part of governance conversations.¹¹ This is particularly essential as public and commercial entities explore the use of emerging technologies in areas such as criminal justice, digital identity, immigration and humanitarian response. More diverse voices need to be present to inform what the edge cases or experience are, particularly as the current gender, racial and socio-economic dynamics of technology companies are concentrated often on western, male-oriented experiences.

Civil society can help include these voices in the governance process, employing existing protocols and mechanisms (e.g. International Governance Forum), intersectoral multistakeholder platforms (e.g. Web Foundation, Electronic Frontier Foundation, the World Economic Forum, etc.), and others.

– **Models for translation across sectors, disciplines and experiences on technology and society issues**

While several new cross-sector initiatives and convenings have emerged on technology and society issues, these groups are often housed within specific disciplines, with few people able to translate and bridge concepts across disciplines and regional experiences. In her work in connecting critical social theory with data science and ethics, Catherine D’Ignazio from Emerson College emphasizes how multistakeholder conversations on algorithmic bias can often describe bias “as a product, a bad apple, or an output of technology, without acknowledging the bigger structural issues that surround data, such as historic oppression and misogyny”.

Civil society can play a much-needed translation and communications role in discussing the Fourth Industrial Revolution, particularly in ensuring that the concepts discussed stay grounded in a diversity of lived experiences and focus on solutions that do not avoid acknowledging fundamental issues related to power and structural inequality. In the example of Myanmar and extremism on the Facebook platform, informed and innovative civil society organizations could act as an early warning system with platform companies, gathering signals about emerging impacts on local communities as briefings and on-the-ground intelligence for companies to take into account across teams.¹²

The transformation that civil society needs to undergo to maintain its relevance and acquire new roles in the Fourth Industrial Revolution is not just a responsibility of civil society actors. Investing in civil society – its preparedness, digital infrastructure and inclusion in the governance of emerging technologies – is investing in the future of accountability, transparency, fairness and trust in the Fourth Industrial Revolution for everyone. Philanthropy, industry, government and other stakeholders have significant roles to play in working with the sector towards ensuring a fairer, human-centred Fourth Industrial Revolution. This is even more relevant as it is becoming clearer that civil society organizations by themselves will not be powerful enough to affect change on their own, but would require support and benefit from multistakeholder actions to accelerate the right mix of incentives and capacity building. The sector’s engagement with philanthropy, industry and government is critical to incentivize radical change and reshape approaches towards social impact.

Matched crowdfunding, evidence building and experimentation, portfolio-funding (versus project funding), novel legal frameworks for social purpose entities: these are just some examples as to how civil society could benefit from new approaches and the support of other actors in the broad civil society ecosystem to drive sector change.

Civil society stands on the frontline of responsible innovation and, with critical investments in its preparedness, the sector has the potential to lead the way towards a people-centred Fourth Industrial Revolution.

Conclusion: Catalysing a thriving civil society in the Fourth Industrial Revolution

As the Fourth Industrial Revolution emerges, civil society actors are called to play key roles in solving global challenges, championing human rights and fostering needed dialogue on societal issues. A more informed and innovative civil society has the potential to revolutionize the Fourth Industrial Revolution, in advocating and demonstrating responsible use and practice of digital and emerging technologies; inclusive and participatory approaches to social innovation and technology; and models for translation across sectors, disciplines and experiences on technology and society issue.

However, the nature of technological change, combined with other economic, political and environmental pressures, means that civil society organizations are struggling as they attempt to respond to the Fourth Industrial Revolution. As they wrestle with a range of tensions in their approach to technology, they will inevitably need to rely on cross-sectoral partnerships and knowledge-sharing to advance meaningful change and to realize their goals.

Civil society organizations cannot change on their own, or in silos. While strategy and partnerships are essential for all sectors, civil society faces a unique set of challenges that warrant both organizational change and new multistakeholder models for protecting and catalysing civil society action.

The research for this paper suggests there is a significant proportion of the international civil society sector actively seeking opportunities to represent the stakeholders and beneficiaries they aim to protect. While many civil society organizations are involved in these issues and are seeking ways to engage further with the development, use and governance of emerging technologies in ways that reflect their values, ensuring that this occurs is not the sole responsibility of civil society organizations themselves. It is, therefore, a matter of common investment from foundations, businesses and others to support a thriving civil society sector that helps to safeguard peace, security and solidarity in the emerging economic, political and social context of the Fourth Industrial Revolution.

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Endnotes

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- 14 Interview with Mark Latonero and Jake Metcalf from Data and Society



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