25 Spheres of Digital Peacebuilding and PeaceTech[1]

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Abstract

This report outlines twenty-fives spheres where technology can contribute to peacebuilding goals and describes five generations of thinking related to the evolution of technology's impact on peacebuilding. Digital peacebuilding contributes to democratic deliberation, violence prevention, social cohesion, civic engagement and improved human security. Digital peacebuilding contributes to the wider field of digital citizenship and "tech for good."

Introduction and Methodology

In Silicon Valley, it is uncommon to hear anyone mention the field of peacebuilding. While many complain of technology's impact on polarisation, violent extremism and hate speech, few tech experts are aware that the field of peacebuilding has decades of experience working on social cohesion, civic engagement, and violence prevention. At the same time, most peacebuilding organisations are not fully aware of the extent to which technology can contribute to their work.

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[1] This Policy Brief is co-published with Alliance for Peacebuilding as it grew out of their working group.

Some peacebuilding organisations have been ramping up their explicit work using technology and understanding how technology impacts democracy and conflict dynamics. Peacebuilding organisations like Build Up, PeaceTech Lab, ICT4Peace, and Search for Common Ground have focused on 'peacetech' and 'digital peacebuilding' since the early 2010s. In 2018, the Toda Peace Institute launched a Social Media, Technology, and Peacebuilding research track. In 2019, the Washington DC-based Alliance for Peacebuilding convened a regular working group on technology and peacebuilding including dozens of the network's member organisations. Mercy Corps and Peace Direct also began convening meetings on the topic. Peacebuilding organisations are employing technology to achieve a wide range of peacebuilding goals, and they have been harnessing peacebuilding skills and processes to address challenges amplified by new technologies. In 2020, Eastern Mennonite University's Summer Peacebuilding Institute offered the first graduate course in "Digital Peacebuilding and Peacetech" and Conducive Space for Peace, Humanity United, and PeaceDirect launched an online "Digital Peacebuilding 101" training platform.

This report emerges out of a literature review and involvement in ongoing consultations within the peacebuilding community in meetings convened by Build Up, the Toda Peace Institute, the Alliance for Peacebuilding, PeaceTech Lab, Search for Common Ground, Mercy Corps, and Peace Direct.

PeaceTech and Digital Peacebuilding Defined

Peacetech is technology that contributes to peacebuilding. *Digital peacebuilding* is the broader nexus between the field of peacebuilding and digital technologies.

This nexus includes three interfaces. First, most peacebuilding efforts use "normal" technologies such as email, websites, word processing, databases, and Skype or Zoom for communication and basic computation. Second, specific types of technology can be developed with the explicit goal of analysing conflict, protecting civilians, facilitating dialogue, or other goals related to peacebuilding. Third, the field of peacebuilding can respond to new threats brought by technology, including cyber warfare tactics such as disinformation aimed at undermining democracy or hate speech on social media leading to greater polarisation.

Peacebuilding includes a wide range of efforts by diverse actors in government and civil society at the community, national, and international levels. Peacebuilding can work proactively to design societies that are both just and peaceful, and reactively to address both the immediate impacts and root causes of conflict before, during, and after violent conflict occurs. Peacebuilding ultimately supports human security—where people have freedom from fear, freedom from want, and freedom from humiliation.

Peacebuilding skills and processes centre on multi-stakeholder, intergroup dialogue, negotiation, and mediation. Peacebuilding processes build social cohesion by improving intergroup understanding, protecting human rights norms, and improving governance and collective problem solving to address inequalities. The field of peacebuilding began as an interdisciplinary subfield of political science, communication, psychology, economics, and sociology devoted to understanding polarisation and designing processes to build social

cohesion. Peacebuilding grew out of pragmatic attempts to prevent and reduce violent conflict by universities working with a few dozen small and local community organisations in the 1980s, practicing what was then called conflict management, resolution, or transformation in places like the Philippines, Colombia, Kenya, and Northern Ireland.

The technology-funded Hewlett Foundation provided USD $165 million of seed funding to the field in the 1990s.[2] The field of peacebuilding has evolved to include dozens of universities with graduate programmes, a global infrastructure of thousands of local civil society organisations and nongovernmental organisations (NGOs), and teams of researchers and practitioners working with the United Nations Peacebuilding Architecture. Today, graduate-level degrees in peacebuilding teach interdisciplinary frameworks for integrated programming design to support participatory democracy, civic engagement, social justice, and social cohesion, and a wide range of conflict transformation skills such as dialogue, negotiation and mediation.[3]

A Brief History: Generations of Peacebuilding and Technology

Technology evolves quickly. Generations of new mobile phones or computers shift every few years. Human interactions with and perceptions of technology also change rapidly. The field of peacebuilding's evolving approach to technology divides into roughly five generations. The evolution centres on both the development of new technologies as well as how people are using these tools for both violence and peace. In general, the evolution has moved from mostly techno-optimistic approaches to the rise of techno-pessimism, as the list of technology's negative impacts grows.[4]

First Generation: Basic Information and Communication

First-generation enthusiasm for Information and Communication Technology (ICT) in the early 1990s focused on the basics of internet technology. Basic ICTs like email, websites, networking portals, and platforms like Skype improved peacebuilding networking and coordination by enabling people to find each other and work collaboratively across distances to support peacebuilding efforts. These technology tools are still staple tools for peacebuilding organisations today. New virtual meeting software such as Zoom and Circles have become essential for working during the COVID 19 pandemic.

In the early 1990s, the University of Maryland created a digital platform called the International Communication and Negotiation Simulation Project (ICONS) that enables students to learn negotiation skills and practice diplomacy with the use of advanced, real-

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[2] David Kovick. The Hewlett Foundation's Conflict Resolution Program Twenty Years of Field-Building 1984-2004. May 2005.

[3] Mark Rogers, Aaron Chassy and Tom Bamat. *Integrating Peacebuilding into Humanitarian and Development Programming: Practical guidance on designing effective, holistic peacebuilding projects.* Baltimore, Maryland: Catholic Relief Services, 2010.

[4] See forthcoming book *Social Media Impacts on Conflict Dynamics: The Techtonic Shift.* Edited by Lisa Schirch. Routledge Press, 2020.

time role-play technology.[5] Other online simulation and "peace games" also began to create opportunities for gamification of learning core peacebuilding skills and values.

One of the earliest intergroup digital dialogue efforts using these basic tools took place on the divided island of Cyprus starting in 1995. [Technology for Peace (Tech4Peace)](#) enabled inter-communal communication between geographically isolated Turkish and Greek Cypriot communities. Cypriots from both communities contributed to digitally created shared strategies and visions for peaceful coexistence. The Tech4Peace portal was used for "cybercafé" dialogues and exchanges.[6]

Second generation: Crowd Sourcing Journalism, Data Collection, People Power

By the 2000s, ordinary people could participate in digital peacebuilding through collecting information, documenting their experiences, contributing data, mobilising social movements online, and participating in hackathons to generate new "peace tech." Citizen journalists began analysing their own context, sharing texts, photos, and eventually videos of events. Technology was seen as democratising media by enabling normal people to report on their context without gatekeeping by legacy media.

Nonviolent social movements began to use texting to organise street protests in the Philippines in 2001. By 2011, Twitter and Facebook became the organising sites for mobilising people power during the Arab Spring. Activists married online organising with street-based power to press for human rights and democratic changes. Digital tools like cell phones with cameras and video capacities enabled local peacebuilders to document peace activities. The ability of local people to produce digital video storytelling amplified their voice to the world.

Peacebuilding groups also began using data collection, management, and visualisation to give voice to local people's experiences. In Kenya's 2008 contested election, local bloggers and software designers conceptualised and developed a low-cost platform called [Ushahidi](#) (the Swahili word for "witness) in just a few days. Ushahidi enables the public to email or text the location of an act of violence in real-time with data mapping and mobile surveys. By mapping the outbreaks of violence, this technology enables local peace teams and police to respond to defuse the conflict as rapidly as possible.[7] In South Africa and other countries, mobile surveys enabled anyone with a cell phone to provide information to researchers on their lives. These surveys helped to develop "everyday peace indicators" measured by local people according to community indicators of peace.[8]

In the early 2000s, "peace hackathons" began to bring together peacebuilders, technology experts, community members, and the business community to identify key challenges and

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[5] For more information on the ICONS project at University of Maryland see their website at https://www.icons.umd.edu

[6] Yiannis Laouris *Information Technology in the Service of Peacebuilding: The Case of Cyprus. World Futures* 60(1). December 2003. 67-79.

[7] For more information see the Ushahidi website at https://www.ushahidi.com

[8] Pamina Firchow, Charles Martin-Shields, Atalia Omer, and Roger Mac Ginty. "PeaceTech: The Liminal Spaces of Digital Technology in Peacebuilding." *International Studies Perspectives*, Volume 18, Issue 1, February 2017, P.29.

brainstorm human-centred, user-oriented tech solutions. The Washington DC-based [Peace Tech Lab](#) sponsored hackathons in various regions of the world, and eventually set up a PeaceTech Accelerator to provide mentorship and training to scale for both profit-based and not-for-profit initiatives quickly and inexpensively. The PeaceTech Accelerator focused on startups able to produce innovative technologies that manage, mitigate, predict, or prevent conflict and promote sustainable peace.[9]

Third generation: Cyberwarfare and the 'Weaponization' of Social Media Platforms

By the early 2010s, state and nonstate groups were using social media to spread hate, division, and violent extremist ideologies. Civil society groups in Myanmar began to raise concerns with Facebook in 2013 that the Myanmar military was spreading disinformation about Rohingya Muslims and generating genocidal levels of hate and violence.[10] In Sri Lanka, civil society was making similar observations: Twitter and Facebook were being used to generate public violence.[11]

State-sponsored disinformation and polarising content from Russia and other countries escalated, with governments setting up "troll farms" and "cyber armies" to suppress their political opponents and democracy and human rights activists, polarise societies, and undermine democratic institutions and elections. Microsoft began a "[Digital Peace](#)" movement that describes itself as "a global movement of over 130,000 digital citizens from over 170 countries who demand that nations stop engaging in cyberwarfare and start working together to protect citizens from state-sponsored cyberattacks that threaten our safety and the stability of the modern world."[12]

Nonstate terror groups also became prolific generators of social media content. Groups like ISIS published daily tweets, photos, and videos on their website to recruit and gain public support. Peacebuilding organisations like the Swiss-based [ICT4Peace](#) began Tech Against Terrorism initiatives to bring diverse stakeholders together to address the spread of violent extremist ideologies. Civil society groups such as [Moonshot CVE](#) began working with technology companies to create the "redirect" method. The redirect method responds to someone searching for information on violent extremism, such as a search for "white nation under threat," by redirecting them to content that describes the benefits of multiculturalism and diversity.[13] Yet extremist content on social media continued to spread.

In 2018-2019, the Toda Peace Institute published a series of analytical policy briefs exploring the [positive and negative impacts of technology on conflict dynamics](#).[14] These detailed the positive roles of technology for civic engagement, supporting democracy movements, and governance, while also describing how social media has escalated threats

[9] For more information see the Peace Tech Lab website at https://www.peacetechlab.org
[10] Victoire Rio. "Myanmar: The Role of Social Media in Fomenting Violence." Toda Peace Institute, June 2020.
[11] Sanjana Hattotuwa. [Sri Lanka: Digital Blooms in Social Media and Violence](#). Toda Peace Institute, June 2020.
[12] For more information on Digital Peace Now see the website at https://digitalpeacenow.org
[13] For more information on MoonShot CVE see the website at http://moonshotcve.com
[14] "Social Media Impacts on Social & Political Goods: A Peacebuilding Perspective." L. Schirch. Toda Peace Institute. Policy Brief #38. April 2019; "Mapping Responses to Social Media Threats" L. Schirch. Toda Peace Institute. Policy Brief #38. April 2019.

against democracy, peace, and social cohesion. Toda published local case studies of social media impacts on conflict dynamics in diverse countries on every continent, including Venezuela, Brazil, Colombia, Zimbabwe, Nigeria, Kenya, India, Sri Lanka, Myanmar, Jordan, Egypt, and Northern Ireland.[15]

Similarly, Build Up conducted a study <u>Analysing refugee-host community narratives on social media in Lebanon</u>.[16] The study found that social media acts as a 'magnified mirror' of societal tensions, impacting perceptions of issues between refugee and host communities. Mercy Corps published a study on <u>The Weaponization of Social Media</u> that identified a range of news stories around the world indicating technology's role in the conflict.[17] And the Freedom House report on <u>The Crisis of Social Media</u> described the decline in democracy as related to the increase in social media, noting "What was once a liberating technology has become a conduit for surveillance and electoral manipulation.[18]

Fourth generation: Advocacy with Tech Companies and Government Regulation

By the late 2010s, academics and civil society groups began to realise that the fundamental business model of social media companies depended on user addiction: keeping users on their platforms longer by capturing their attention. The content most likely to keep someone on a platform includes emotionally heightened content that generates anger or outrage,[19] content that emphasises ingroup identity formation through hateful content towards other groups,[20] false information, and conspiracy theories aimed to disorient and confuse the public. The algorithms that fuel these platforms learn what people like and feed them more content that is similar. This "algorithmic" extremism is baked into the social media profit model.[21]

Civil society increased its advocacy to governments to fix these problems. Civil society groups proposed that governments mandate social media risk audits and impose special taxes or other penalties for negative tech impacts on society. In 2018, some European countries passed legislation requiring social media companies to quickly remove hate speech or disinformation and to increase privacy.[22] Social media companies have lobbied

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[15] "Social Media Impacts on Conflict Dynamics: A Synthesis of Ten Case Studies & a Peacebuilding Plan for Tech". L. Schirch. Toda Peace Institute. Policy Brief #73. May 2020.
For more information on Toda Peace Institute's local case studies see https://toda.org/policy-briefs-and-resources/social-media-technology-and-peacebuilding.html

[16] Jacob Lefton, Maude Morrison, Mira Al Mawla, Helena Puig Laurarri. "Analysing refugee-host community narratives on social media in Lebanon. Written by Build Up for UNDP, February 2019.

[17] "The Weaponization of Social Media." Seattle, Washington: Mercy Corps. 2019.

[18] Adrian Shahbaz and Allie Funk. "The Crisis of Social Media." Washington DC: Freedom House, 2019.

[19] Jonah Berger and Katherine L. Milkman. "What Makes Online Content Go Viral." *Journal of Marketing Research*. 2011.

[20] See these two studies: Matthew Barnidge. "Social Affect and Political Disagreement on Social Media." *Social Media and Society*. 3 September 2018; Karyn Amira, Jennifer Cole Wright, Daniela Goya-Tocchetto. "In-Group Love Versus Out-Group Hate: Which Is More Important to Partisans and When?" *Political Behaviour.* 20 June 2019.

[21] There is wide public conversation and scholarship on algorithmic extremism, and how social media companies profit from hate speech, conspiracy theories and other false information. For a review of this dynamic, see other Toda Peace Institute policy briefs such as Lisa Schirch. "Social Media Impacts on Social and Political Goods." Toda Peace Institute, October 2018.

[22] Counter Extremism Project. 2018. "European Commission's Proposal on Terrorist Content Needs to Protect EU Citizens." *Tech and Terrorism Roundup*, 18 September 2018.

heavily to oppose such legislation and have been reluctant to remove content that drives their profit model.[23]

Civil society groups increased their advocacy with tech companies to change their algorithms, increase content moderation, "deplatform" to remove the accounts of violent extremist groups, and add features to their platform to help users protect their privacy and to distinguish between false information and real news. Peacebuilding organisation Search for Common Ground began talking with Facebook staff on how to improve digital dialogue and to help their staff understand the "common ground approach." Another peacebuilding NGO, JustPeace Labs, began to offer "Ethical Guidelines for PeaceTech," "Conflict Sensitivity for the Tech Industry" and a suite of other tools and guidelines for tech companies as well as civil society organisations to use when planning and executing programmes involving technology.[24] The Alliance for Peacebuilding, Toda Peace Institute, Mercy Corps, Build Up, and other groups have regular contact with technology companies to increase understanding of the field of peacebuilding and to communicate concerns and ideas on how to address the link between social media, conflict, polarisation, and violence. These meetings explore potential collaborations and generate new ideas about designing platforms, moderation, public service announcements, and rewards or incentives for positive digital communication on these platforms.

In June 2020, a coalition of US civil society groups launched the #StopHateForProfit campaign , an advertiser's boycott of Facebook to press the company to take more action to address hate speech and disinformation. Nearly 1000 advertisers pulled their ads from Facebook to signal their disgust with the company's record on human rights.[25]

Fifth Generation: Digital Social Movements

The fifth generation of digital peacebuilding recognises that tech companies do not have sufficient incentives to change, that government regulations are complex and slow to develop, and that urgent and widespread need for action requires civil society to form digital social movements to participate in addressing these threats. In some regions of the world, local civil society has already taken the lead on addressing rampant disinformation and hate speech, initiating digital media literacy strategies to improve public awareness of digital threats and how to practice digital communication skills to defuse tension and find common ground to reduce polarisation.

In western Europe, the #ichbinhier (#Iamhere) civil society movement involves tens of thousands of volunteer "upstanders" to support victims of digital harassment and

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[23] For a survey of experts and research on this topic, see Denise Clifton, "Why Facebook and Twitter Aren't Stopping the Flood of False and Toxic Content" *Mother Jones.* 4 December 2018.
[24] "Ethical Guidelines for PeaceTech." Just Peace Labs. San Francisco, California, 2017. Found at https://justpeacelabs.org Access on 1 July 2020.
[25] Nancy Scola. "Inside the Ad Boycott That Has Facebook on the Defensive." *Politico.* 3 July 2020.

misogynist, racist, and anti-immigrant hate speech. These volunteers interrupt hate speech and reinforce each other in supporting victims of cyberbullying and digital hate.[26]

In eastern Europe, civil society in Latvia, Lithuania, and Ukraine has developed powerful social movements to counter Russian troll farms which launch cyber warfare. Russian cyber warfare has evolved from a small program to "troll farms" with thousands of staff planting false and divisive stories on social media in other countries. Russia's goal is to undermine democratic institutions and increase polarization. Lithuania has a volunteer citizen army of "Elves" working together to protect themselves against Russian "industrial-scale" disinformation."[27]

In Kenya, Bangladesh, and other countries around the world, peacebuilding groups are realising they need to become involved in supporting digital media literacy to improve public awareness of digital communication skills and vaccinate the public against the spread of disinformation and hate.[28]

Types and Functions of Information and Communication Technology

Half of the world's population has access to mobile phone technology. And 59 percent are active internet users as of April 2020.[29] Some of the most creative digital peacebuilding efforts have emerged from the Southern Hemisphere in countries finding innovative ways to harness basic technology to assist in development, democratisation, humanitarian and peace efforts. Digital peacebuilding does not require sophisticated or expensive forms of technology. But some peacebuilding groups are already employing advanced technologies such as geospatial information systems, drones, and artificial intelligence.

Information and communication technologies (ICTs) include any type of tool that uses numeric code, including electronic tools, systems, devices, and resources that generate, analyse, store or process data, such as mobile phones, the internet, social media, online games, and computers. Digital technologies include the following categories and examples.

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[26] Jessica Bateman. "'#IAmHere': The people trying to make Facebook a nicer place." BBC. 10 June 2019. Found at https://www.bbc.com/news/blogs-trending-48462190 Accessed on 4 July 2020.

[27] Kim Sengupta. "Meet the Elves, Lithuania's digital citizen army confronting Russian trolls. *Independent.* 17 July 2019. Found at https://www.independent.co.uk/news/world/europe/lithuania-elves-russia-election-tampering-online-cyber-crime-hackers-kremlin-a9008931.html Accessed on 4 July 2020.

[28] See for example "Pilot Study: Social Media Literacy of Madrasa Students in Bangladesh." MOVE Foundation. Dhaka, Bangladesh, 2019.

[29] J. Clemon. "Worldwide digital population as of April 2020" Statista. Found at https://www.statista.com/statistics/617136/digital-population-worldwide/ Accessed on 29 June 2020.

Categories	Examples
Information Search Technology	Search Engines such as Google
Mobile Phone Technology	Calling, texting, camera, video
Video Technology	YouTube, TikTok, Twitch
Data Collection, Management, and Visualization Technology	OpenXData, KoBoToolbox, etc
Internet Communication	Email, Skype, Zoom, Whatsapp, Messenger, etc
Data Analytics	Crowdtangle, Hootsuite, Storyful, etc
Machine Learning and Artificial Intelligence	Algorithms, bots, and other programmed technology that makes decisions, learns, or acts on its own accord
Virtual Reality	Oculus Rift, Google Cardboard, etc
Geospatial technology	Geospatial Information Systems (GIS), Drones, etc
Social Media	Twitter, Weibo, Facebook, Instagram
Blockchain	Cryptocurrencies and other record-keeping technologies

People can harness these technologies for both positive and negative goals. They can be exploited to generate hatred of another identity group, to organise an act of terror against civilians, to launch a cyberattack against hospitals or universities, or to generate support for mass violence and genocide. But these tools can also be used to support the work for social cohesion, human security, and peace.

Build Peace offers an online course, Digital Peacebuilding 101, that reviews these types of peace tech.[30] Build Peace describes three basic functions of technology expanding on the idea of "information" and "communication" technology (ICT). They break the "ICT" framework into three parts: information, strategic communication, and dialogue/networking:

First, technology can help to *gather, analyse and visualize information.* Technology can *gather information* from drones or satellites which can record photographs of movements of displaced people, weapons, or troops. Data scraping can search information on websites or social media channels to collate information across the internet. Mobile surveys can collect public perceptions. Technology can then help to *analyse information* and then *visualize* it so that others can see information in a way that enables them to make better decisions and plans based on this information.

Second, technology can be used to support *strategic communication*. Technology allows people to share information more quickly, which can help to debunk false information.

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[30] See Build Up's website for access to the free digital course on "Digital Peacebuilding 101" at https://how-tobuildup.org/community-learning/courses/digital-peacebuilding-101-introducing-technology-for-peace-building/

Technology can enable more people to have a voice in public discussions, promoting inclusion, empowerment and participation. And technology can be used to promote narrative change toward values of peace and justice and away from narratives that encourage violence or harm toward others.

Third, technology can also be used to support communication for *dialogue and networking* that supports building relationships. Technology can be used to improve participation and representation in political discussions, to support dialogue between groups of people to help build empathy and understanding, and to organise and coordinate with others to achieve shared goals.

25 Spheres of Peacebuilding and Technology

A variety of scholars have already developed taxonomies related to technology and peacebuilding.[31] [32] [33] Some emphasise the basic information and communication capacities of technology. Other categorise vertical (government to population) and horizontal (people to people) forms of digital peacebuilding.[34] This report sorts digital peacebuilding into twenty-five spheres, as illustrated in this summary chart. These spheres are applications of technology applied to peacebuilding goals.

25 Spheres of Digital Peacebuilding
1. Digital Citizen Journalism and Cyber Witnessing
2. Digital Conflict Analysis and Ceasefire Monitoring
3. Digital Election Monitoring
4. Digital Early Warning of Violence and Dangerous Speech
5. Digital Civilian Protection
6. Digital Public Opinion Polling
7. Digital Coordinating and Managing Crisis Information
8. Digital Governance
9. Digital Monitoring and Evaluation
10. Digital Responses to Violent Extremism and Terror
11. Digital Fact-Checking to Stop Rumours
12. Digital Social Marketing of Peace Narratives

[31] Helena Puig Larrauri and Anne Kahl. "Technology for Peacebuilding." Stability: International Journal of Security and Development, 2(3), p. 61

[32] Pamina Firchow, Charles Martin-Shields, Atalia Omer, and Roger Mac Ginty. "PeaceTech: The Liminal Spaces of Digital Technology in Peacebuilding." *International Studies Perspectives*, Volume 18, Issue 1, February 2017, Pages 4–42.

[33] Ioannis Tellidis & Stephanie Kappler. "Information and Communication Technologies in Peacebuilding: Implications, Opportunities and Challenges." *Cooperation and Conflict.* Vol. 51(1) March 2016. Pp. 75–93

[34] Luke Kelly. "Uses of digital technologies in managing and preventing conflict." University of Manchester. 17 May 2019.

13. Modeling Digital Communication Skills
14. Facilitating Intergroup Digital Dialogue
15. Digital Peace Education through Gaming
16. Digital Violence Prevention
17. Digital Diplomacy, Negotiation and Mediation
18. Digital Inclusion in Peace Processes
19. Digital Upstanding
20. Digital Social Movements
21. Digital Hackathons and PeaceTech Startups
22. Peace Engineering
23. The Hague Peace Data Standard
24. Digital Media Literacy
25. Digital Public Safety

1. Digital Citizen Journalism and Cyber Witnessing

Before digital technologies became widespread, publishing was expensive, difficult to distribute, and was predominantly run by professional "legacy media." Journalists, editors, and news owners in legacy media act as "gatekeepers", deciding what news they will publish, and what, in their view, is not newsworthy. Digital technology democratised the publishing process. Digital technology enables any individual with an internet connection to become a "citizen journalist" by uploading a news story, a photo, a video, or other digital content and sharing it via the internet.

Digital technologies give anyone with access (and access is often missing) the tools to voice their complaint, their vision, their request to others around the world. A refugee can write directly to the head of humanitarian relief agencies and ask for more food. A bystander filming an instance of police brutality can instantly send out the video to anyone around the world. A child can file a report of abuse without the help of a parent.

Martin Luther King wrote about the need to reveal hidden injustices. Digital technologies are bringing to the surface narratives, photos, and videos that might have stayed invisible. Atalia Omer describes cyber witnessing technologies as "witnessing tools in generating ethical outrage and commitments through knowledge production and raw images of suffering, martyrdom, and protest" that "accelerates and emboldens the involvement of third parties in developing nonviolent peacebuilding efforts."[35] Digital technologies enable individuals to tell their stories, offering agency, and empowering tools for people to communicate their identity and their story. In 2011, the website 18daysinEgypt.com created a portal where anyone could upload a photo or story about their reason for

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[35] Firchow, et al. p. 9.

protesting, their vision for their country, or any other narrative about their identity as an Egyptian.[36]

2. Digital Conflict Analysis and Ceasefire Mapping

Conflict analysis is an essential element of peacebuilding. Before deciding how to intervene in conflict, peacebuilders conduct research to uncover the "who, what, why, how, when, and where" that can reveal more information about the root causes of conflict, the deeper interests of each stakeholder, and the best strategy for transforming conflict. Conflict analysis includes diverse research methods to understand patterns of discrimination and harm in society, as well as grievances expressed by different groups.[37] Digital technologies are useful in several ways for improving conflict analysis. Peacebuilding groups use technology to help track violent incidents or assess the risk of violence using crowdsourced, user-reported data.

Digital technologies also enable civil society to report outbreaks of violence.[38] The largest peacebuilding organisation in the world, Search for Common Ground, selects, trains, and convenes conflict monitors who report on increases or decreases in conflict drivers through texts. SFCG also provides a public phone number to anyone else to contribute information on safety issues.[39]

For example, the Carter Centre's Syria Mapping Project provides mediators and humanitarian responders with up-to-date, information on developments throughout Syria including political statements, information about military defections, and armed group formations as well as footage of the actual fighting, and humanitarian relief efforts.[40]

3. Digital Election Monitoring

A variety of digital peacebuilding platforms emerged from Kenya to prevent election violence. Kenyans developed the Ushahidi platform to help prevent election violence in 2007. The platform enables data collection, management, and visualization. By crowdsourcing data, Ushahidi can take reports of election irregularities or violence and create a map for key stakeholders to respond immediately. The Ushahidi platform now performs a variety of other peacebuilding tasks that involve crowdsourcing information and providing visual maps to help communities, NGOs and governments respond to needs or issues.[41]

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[36] See http://beta.18daysinegypt.com/#/explore Accessed 20 June 2020.

[37] See for example Lisa Schirch. *Conflict Assessment and Peacebuilding Planning: Toward a Participatory Approach to Human Security*. Boulder, CO: Lynne Rienner Publishers, 2014.

[38] Jacob Shapiro, David A Siegel. "Coordination and Security: How Mobile Communications Affect Insurgency." *Journal of Peace Research.* Vol. 52, 2015. pp. 312–22.

[39] For more information on Search for Common Ground's use of technology for conflict analysis see their website at https://www.sfcg.org/tag/technology/

[40] Kane Farabaugh. "Carter Center Maps Syria Conflict" *Voice of America*. 14 March 2017.

[41] See the Ushahidi website for more information: https://www.ushahidi.com

The Kenya-based Sisi ni Amani Kenya (SNA-K) uses mobile phone-based technologies to facilitate rapid SMS (text message) communication to promote peace. SNA-K created violence prevention messages by asking communities to use their expertise in developing messages that would resonate with local audiences. SNA-K created civic education messages focusing on voter education to reduce vulnerability to false information rumours about the election process. SNA-K also emphasised calming messages. People forwarded the SNA-K messages on to others, providing election-related information.[42]

4. Digital Early Warning of Violence and Dangerous Speech

Providing an early warning of violent conflict requires collecting diverse sources of data. New technologies enable vast data collection for improved early warning of conflict, with the hope that this can translate into the political will to invest in conflict prevention.[43] Early warning indicators include an increase in hate speech, weapons purchases, increased movement of armed groups, and new patterns in the market as rumours spread. Data management systems can obtain early warning data by scraping social media, legacy media, bank transactions, traffic patterns, and troop movements observed through Google Earth, drones, and other monitors.

Following Kenya's use of technology for preventing election violence, Kenyans developed a range of technologies for preventing rumours and violence. Uchaguzi enables users to send an SMS about incidents of violence to the authorities with a toll-free number. The Kenyan government and UNDP launched the Uwiano Platform for Peace in 2010 to provide online tracking tools for citizen reports of violence. Umati uses social media data scraping to monitor hate speech on the internet and offers visual maps of where it is spreading. Una Hakika ('Are you sure?') was formed to provide users with a way to verify dangerous rumours using mobile phones following disinformation that led to several massacres and heightened inter-communal tensions in the Tana Delta region.[44]

PeaceTech Lab maps the local lexicons of hate speech on social media in various languages and regions of the world and aims to empower civil society and tech companies to identify and interrupt the spread of hate speech. The hate speech lexicons identify and explain local jargon, metaphors, and other inflammatory language on social media while offering alternative words and phrases that can be used to combat the spread of hate speech.[45] Hate speech almost always is contextually specific. Hate speech becomes "dangerous speech" when it begins to translate to direct physical threats and harms. The Dangerous Speech Project (DSP) provides early warning by monitoring hate speech to determine where and when it becomes dangerous speech that may catalyze intergroup or physical violence. By understanding the characteristics of dangerous speech, DSP explores whether this

[42] Seema Shah and Rachel Brown. Programming for Peace: Sisi Ni Amani Kenya and the 2013 Elections. Philadelphia: Center for Global Communication Studies Annenberg School for Communication University of Pennsylvania, 2014.

[43] Francesco Mancini, ed. *New Technology and the Prevention of Violence and Conflict.* New York: International Peace Institute. 2013.

[44] Patrick Mutahi and Brian Kimari. "The Impact of Social Media and Digital Technology on Electoral Violence in Kenya." *Institute of Development Studies.* No 493. August 2017.

[45] See the PeaceTech Lab's website for more information: https://www.peacetechlab.org/hate-speech

knowledge might be used to prevent such violence.[46] The [Hatebase platform](#) also collects data on hate speech and makes this data available to researchers.[47]

The [Harvard Humanitarian Initiative's Program on Crisis Mapping and Early Warning](#) uses communication technologies to collect information that can inform policymakers and assist humanitarian decisionmakers to prepare.[48] The [Early Warning Project](#), a collaboration between the US Holocaust Museum and Dartmouth College, combines mathematical models to achieve an 80% chance of predicting violence. And [Uppsala University's model, called VIEWS](#), further improves on the predictive computations.[49] The [Armed Conflict Location & Event Data Project (ACLED)](#) is a disaggregated data collection, analysis, and crisis mapping project. ACLED uses technology to collect real-time data on the locations, dates, actors, fatalities, and types of all reported political violence and protest events around the world.[50]

5. Digital Civilian Protection

Early warning systems can contribute directly to the immediate need to protect civilians. Civilian protection aims to prevent harm to civilians under threat. Digital technologies can assist in providing intelligence useful in demonstrating to offenders that their threats against civilians are being monitored and recorded. This acts as leverage to discourage harm toward civilians by groups that hope no one is watching.

For example, [Sentry from Hala Systems](#) is a multi-sensor network using artificial intelligence (AI) to generate awareness of immediate threats against civilians. Sentry validates information from multiple sources, allowing stakeholders such as governments, the United Nations, and NGOs to detect, identify, and predict threats.[51] Sentry detects the sound of warplanes and then warns local people about when and where bombs may fall.[52]

There is interest in expanding the use of drones for humanitarian uses to increase the protection of civilians. However, a variety of ethical, practical, and political questions on the use of drones during peacekeeping operations remain, including concerns for privacy, transparency, risks, and accountability mechanisms for the collection of data.[53]

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[46] See the Dangerous Speech website for more information: https://dangerousspeech.org

[47] See the Hatebase website for more information: https://hatebase.org/about

[48] See the Harvard Humanitarian Project website for more information: http://hhi.harvard.edu/research#humanitarian-data-and

[49] Tate Ryan-Mosley. "We are finally getting better at predicting organized conflict." MIT Technology Review. 24 October 2019.

[50] See the ACLED website for more information: https://acleddata.com/#/dashboard

[51] For more information on Hala System see their website at https://halasystems.com

[52] Danny Gold. "Saving Lives With Tech Amid Syria's Endless Civil War. *WIRED.* 16 August 2018.

[53] Helena Puig Laurari. "Peacekeepers in the Sky: The Use of Unmanned Aerial Vehicles for Peacekeeping." Zurich: ICT4Peace Foundation, 2015.

6. Digital Public Opinion Polling

Digital technology offers a range of research methods that can monitor public responses to peacebuilding interventions or survey public attitudes toward peace and conflict.

For example, in 2018, the peacebuilding NGO called International Alert worked with the British Council and the technology firm RIWI to conduct a [Peace Perceptions Poll](), which surveyed more than 100,000 people in 15 countries who had experienced both peace and active conflict about their views on both. The poll found that the public supports long-term conflict prevention and peacebuilding, and political and economic inclusion as fundamental to peace and security.[54]

The [Elva Platform]() or "Atlas of the Future" combines data collection tools like SMS, Smartphone, and web reports to measure public opinions on community safety in Ukraine, or violent extremism in West Africa or Georgia. These surveys collect in-depth citizen reports and surveys on local needs, empowering community leaders to monitor and manage conflict and to deliver better targeted assistance. The Elva Platform specialises in producing map-based visualizations.[55]

A group called [Data for Peace and Security]() and a 2019 [workshop]() with the same name hosted by the New York University (NYU) Centre on International Cooperation, the Netherlands Ministry of Foreign Affairs, and the UN Peacebuilding Support Office documents a range of other peacebuilding uses for digital data collection and management. One of the key concerns is the lack of data literacy by decision makers unable to distinguish quality data from "dirty data."[56]

7. Digital Coordinating of Crisis Information

Armed groups use technology to coordinate and carry out violence. Peacebuilding actors, like humanitarian and development actors, benefit from new technologies that can manage big data sets and create data visualization charts and maps that can be shared with a wide range of actors working in conflict and post-conflict contexts.[57] Peacebuilders working on a peace process, for example, need access to information regarding numbers of internally displaced people, movements of armed groups, and water availability. The United Nations [Global Pulse Initiative]() recognises big data as "a new, renewable natural resource" and aims to increase innovation and adoption of big data technologies.[58]

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[54] "Peace Perceptions Poll." London: International Alert, British Council, RIWI, 2018. Found at [http://www.peaceperceptionspoll.org/%20]() Accessed on 20 June 2020.

[55] For more information on the Elva Platform see their website at [https://elva.org]()

[56] "Report of the Practitioners Workshop on Harvesting Best Practices and Building a Community of Practice." New York: NYU Center on International Cooperation, 2019, p. 8.

[57] Andrew Robertson and Steve Olson, *Sensing and Shaping Emerging Conflicts*; Report of a Workshop by the National Academy of Engineering and United States Institute of Peace. Roundtable on Technology, Science, and Peacebuilding. Washington DC, The National Academies Press, 2013.

[58] "Big Data for Development: Challenges and Opportunities." United National Global Pluse. May 2012. Found at [https://www.unglobalpulse.org/document/big-data-for-development-opportunities-and-challenges-white-paper/]() Accessed 1 July 2020.

8. Digital Governance

Governance is a process for making decisions involving governments, civil society and the private sector. Ideally, coordination between these three elements of society work together. Too often governments make decisions that affect people's lives without actively consulting and involving civil society. Digital technologies allow service providers in government, businesses or civil society groups to hear from the public about their needs, their concerns, and their feelings toward service provision or intervention.

Open Government Partnership (OGP) includes government leaders from 78 countries and thousands of civil society advocates who work together to promote accountable, responsive and inclusive governance. OGP explores technology options that enable policymakers to listen and consult directly with their community members, and to be accountable to them.[59]

Digital governance or "GovTech" can enable "citizen-centric" public service provision where citizens evaluate government performance.[60] In 2019, the World Bank launched "GovTech" to provide technical solutions to enable simple, accessible, and efficient government by improving the government's ability to respond to citizen needs, and increasing the efficiency, transparency, and accountability of governance provision. GovTech, for example, can enable anonymous public reports to community police or reporting of abuses by the security sector.[61]

The stated aim of AI for Peace is to find ways to use artificial intelligence to aid in governance related to civil liberties and human rights, particularly decisions regarding the highly contested elements of criminal justice, law enforcement, housing, hiring, and education that often result in unintended consequences. [62] Omdena also uses AI and machine learning to address governance challenges. One Omdena project used machine learning to match land conflict events to government policies with the goal of understanding how to improve land restoration by minimising land conflicts.[63]

9. Digital Monitoring and Evaluation

Governments and peacebuilding organisations can monitor and evaluate the public perceptions of their programmes and services through digital methods of data collection using mobile technology, social media, computation of big data sets, and tools to better visualize data.[64] Mobile surveys, for example, can elicit public input on "everyday peace

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[59] For more information on Open Government Partnership see the website at https://www.opengovpartner-ship.org/about/
[60] For more information on GovTech see the website at https://www.govtech.com/The-2020-GovTech-100-In-vestors-Bet-Big-on-Gov-Tech.html
[61] For more information on the World Bank's GovTech see their webpage at https://www.worldbank.org/en/topic/governance/brief/govtech-putting-people-first
[62] For more information on AI for Peace see their website at https://www.aiforpeace.org/human-rights-and-democracy
[63] For more information on Omdena see their website at https://omdena.com/blog/land-degradation/
[64] Vanessa Corlazzoli. "ICTs for Monitoring & Evaluation of Peacebuilding Programmes. London: Department for International Development, UKAid, and Search for Common Ground. May 2014.

indicators" as well as provide information to help monitor and evaluate the outcomes of peace-related initiatives in the field.[65]

Search for Common Ground (SFCG) uses mobile phone surveys to solicit feedback on their peacebuilding radio programmes in Democratic Republic of Congo and Cote D'Ivoire. These mobile surveys monitor how the public feels about the radio programmes and measure the impact of the radio programmes on public attitudes. This is particularly helpful as conflict dynamics shift. The public can send text messages in response to the surveys that provide additional insights. In South Ossetia, UNDP Georgia has also been collecting input from community network members through the Elva program to evaluate the community safety network. This monitoring and evaluation information can help support police and security responses to conflicts and potential conflicts.

10. Digital Fact-Checking to Stop Rumours

The spread of false and misleading information on social media is having serious impacts on elections, democratic institutions, and conflict dynamics. Fact-checking initiatives to pre-bunk and debunk false information plays a role in fostering peace and stability. In Jordan, a group of students created the Fatabayyanu website to provide the first fact-checking initiative in the Middle East. Fatabayyanu means "*seek clarity*" and the website posts factual information on events and current affairs, particularly to address the viral spread of false information on social media. Volunteer "fact-checkers" are carefully chosen, receive training, and carry out investigations to verify the information before posting.[66]

11. Digital Responses to Violent Extremism and Terror

Digital technologies are also used to track and respond to the way violent extremist and terror groups spread their ideology, recruit new members, and generate financial support online. The Swiss peacebuilding organisation ICT4Peace worked with the United Nations Counter-Terrorism Executive Directorate and the global tech industry on a project called "Tech Against Terror" to prevent terrorist use of the internet whilst respecting human rights. Tech Against Terror conducts workshops, publishes risks assessments, and helps small and large platforms identify best practices.[67] Moonshot CV, described earlier in this report, redirects Google searches toward positive content on multiculturalism to undermine violent extremist content. Tanenbaum was one of the first peacebuilding organisations to address white supremacist terror threats. They published advice on "5 Ways to Counter Extremists on Social Media."[68]

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[65] Firchow, et al. p. 37
[66] Diana Ishaqat. "Social Media and Social Change in Jordan: Opportunities and Threats." Toda Peace Institute. October 2019. p. 7.
[67] See https://www.techagainstterrorism.org
[68] Tanenbaum Centre for Interreligious Understanding. "5 Ways to Counter Extremists on Social Media." 2016. Found at https://tanenbaum.org/wp-content/uploads/2016/10/Five-Ways-to-Counter-Extremists-on-Social-Media.pdf Accessed on 1 April 2020.

12. Digital Social Marketing of Peace Narratives

Peacebuilding organisations have traditionally relied on books and journals as their main communication format. Many peacebuilding groups have developed some sort of web presence, usually a simple website, in the last twenty years. New forms of digital content such as hashtags, memes, GIFs, social media quizzes and surveys, and digital storytelling videos provide low-cost methods for peacebuilding organisations to advertise peacebuilding skills, values, and processes. *Social marketing* is the idea of using business marketing concepts to sell a new behaviour, attitude, or awareness about a social concern or service by increasing engagement and traffic. A *digital marketing campaign* is an online strategy to promote a business's product. Strategic communications planning tools can help peacebuilding organisations market their work.

In 2020, the Toda Peace Institute is planning a "Digital Peace Factory" contest to spur crowdsourced digital content in the form of new hashtags, memes, videos, digital quizzes, or games that can model communication skills and support the broader goals of social justice, coexistence, tolerance, social cohesion, and peace.[69]

13. Modeling Digital Listening and Communication Skills

Some peacebuilding groups aim to support, train, and/or amplify effective digital communication. This approach is further detailed in a Toda Peace Institute policy brief to follow entitled "Digital Communication Skills: Beyond Counterspeech to Peacebuilding & Civic Engagement." Digital communication skills include active listening, paraphrasing, identifying common ground, expressing curiosity and a desire to learn about people who are different. These methods are not simply "nice" or kind. These communication methods are more likely to contribute toward shifts in understanding and action.

For example, "digital listening" is a skill that helps people to feel heard and understood. Human beings have a desire to be understood, and conflict behaviour often escalates when people do not feel heard. The Listening Café by the Listening Campaign designs a process to "go beyond simply letting participants take turns talking to instead allow participants to take turns being fully heard and understood."[70] The American Listening Project creates a space for Americans to listen across the political divide.[71] And #ListenFirst Project aims to start a movement to mend our frayed social fabric by building relationships and bridging divides one conversation at a time."[72]

The HearMe app enables people in need to connect with someone who is willing to simply listen and empathise with others. The website 7 Cups of Tea "provides free, 24/7 emotional support to millions via online chat. We want to make sure nobody has to face their problems alone. Having someone like you to listen can be all it takes to make a real difference."[73]

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[69] See the Toda Peace Institute for more information at https://toda.org
[70] See the Listening Café website for more information at http://listeningcampaign.com/listeningcafe
[71] See the American Listening Project website for more information at https://american-listening-project.org/
[72] See the Listen First Project website for more information at http://www.listenfirstproject.org/
[73] See the 7 Cups of Tea website at https://www.7cups.com/

During the COVID-19 pandemic, Listenly offers free emotional support sessions for those affected by the virus, noting, "Our Trained Listeners are Here for you. Relieve Stress and Improve Mental Clarity with a Listening Session."[74]

There are a range of organisations using evidence-based communication skills. The Dangerous Speech Project, an organisation that aims to improve responses to hateful speech that can incite violence, offers guides for "counterspeech" that can respond to online hate speech and disinformation.[75] Project Over Zero advances the uses of communication skills to address identity-based conflict.[76] The project grew out of their publication *Defusing Hate: A Strategic Communication Guide to Counteract Dangerous Speech.[77]* The organisation Braver Angels offers a free online course to help Americans learn active listening and speaking skills to increase understanding and depolarisation.[78] Smart Politics offers online training in communication skills for progressives, so that they may better communicate with conservatives to depolarise conversations on policy issues.[79]

Search for Common Ground runs a variety of online peace campaigns and works on digital rumour management and amplifying constructive peace narratives. In Sri Lanka, Search for Common Ground developed a program called "Cyber Guardians" to empower youth to combat online hate speech. The program aimed to create active mediators on social media with a "3C" process where youth would learn how to create positive content on social media, how to counter hate speech and fake content on social media, and then how to sustain the process by retaining the cyber guardians as champions.[80]

The peacebuilding NGO Build Up runs a digital communication project called "The Commons" to improve digital communication to depolarise political conversations in the US on Facebook and Twitter and to strengthen the "civic fabric" in the US through "increasing listening, respect, and understanding across the political divide.[81]

14. Facilitating Intergroup Digital Dialogue

There have been several ongoing efforts to engage people in a dialogue on online platforms, including virtual exchanges. The theory of change here is that when people have contact with each other, they learn to see each other in more complex ways, and can appreciate both what they have in common and also learn more about their differences.

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74 See the Listenly website at https://www.listenly.co/
75 For more information on Dangerous Speech Project see their website at https://dangerousspeech.org
76 For more information on Project OverZero see their website at https://projectoverzero.org/who-we-are
77 Rachel Brown. "Defusing Hate: A Strategic Communication Guide to Counteract Dangerous Speech." Washington DC: United States Holocaust Memorial Museum, 2016.
78 For more information on Braver Angels see their website at https://braverangels.org/our-story/
79 For more information on Smart Politics see their Facebook page at https://www.facebook.com/SmarterPolitics
80 Ramanaish Katheravelu. "Final Evaluation of Cyber Guardians: Empowering youth to combat online hate speech in Sri Lanka" Washington, DC: USAID, February 2020.
81 Build Up. "Scaling the Commons." Medium. 12 December 2019. Found at https://medium.com/@howtobuildup/scaling-the-commons-969b15c98012 Accessed on 1 June 2020.

The Peace Factory is a social online movement that connects people over the Middle East. It started with an Israeli graphic designer posting a message on Facebook saying "Iranians, we will never bomb your country. We love you." People could upload their photos with this message to Facebook. It caught on. Then Iranians began sending back messages to Israelis. And these became colorful graphic posters as well. These simple messages became a dialogue, with Israelis and Iranians who had never met each other sending messages to each other over social media platforms. The digital campaign spread to other countries in turmoil, such as Lebanon-Israel and US-Iran. The project translated to extended social media dialogue in some cases. And the graphic images were taken off social media and reposted on buses in Israel.[82]

Soliya brings together post-secondary youth in small, diverse groups for meaningful cross-cultural experience through digitally facilitated dialogue. Soliya's website describes its work as combining "best practices for constructive dialogue with innovative new media technology to shift the way societies resolve their differences from a confrontational and coercive approach to one defined by cooperation and compassion." Soliya's online student exchange programme, Exchange 2.0, pairs high school and college students from different regions for cultural exchange, learning cooperation, empathy, and compassion. [83]

PeaceDirect's Platform4Dialogue offers peacebuilders working in different countries a way to communicate and support each other with technology that is built for dialogue and exchange across cultures. Platform4Dialogue encourages, enables, and supports inclusive online dialogue for practitioners, professionals, and peacebuilders on a range of issues.[84]

15. Digital Peace Education through Gaming

Peace education has been a key element of sustainable peacebuilding. Teaching communication, problem-solving and other peacebuilding skills can be done in a traditional classroom. Video games are an opportunity to teach these skills through interactive methods that offer opportunities to try out new skills and ideas and gain a sense of empowerment. The game development community has created a variety of new "empathy games" where players must cooperate and negotiate with others to save civilians in times of war or achieve solutions that address human needs. [85]

In 2014, the UNESCO Mahatma Gandhi Institute of Education for Peace and Sustainable Development launched an international Gaming Challenge. They received hundreds of proposals for video games to educate players on issues of peace and sustainable development. [86] Games for Peace brings Palestinian and Jewish kids together to play "Play2Talk Minecraft World" with each other once a week in school. Kids play on mixed

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[82] For more information on Peace Factory see their website at https://thepeacefactory.org/ted-talk-pf-on-the-road/
[83] For more information on Soliya see their website at https://www.soliya.net
[84] For more information on PeaceDirect's Platform4Dialogue, see their website at https://www.platform4dialogue.org/en/
[85] Yoko Mochizuki and Gauri Khanduja. "Gaming for Peace: Onling gaming to promote peace & sustainable development." UNESCO Mahatma Gandhi Institute of Education for Peace and Sustainable Development, n/d.
[86] Anamika Gupta. "Beyond the zombie apocalypse: Video Games For Peace And Sustainability." UNESCO Mahatma Gandhi Institute of Education for Peace and Sustainable Development, n/d.

teams where they have to cooperate and think creatively with others on their team to solve challenges in the games.[87]

16. Digital Violence Prevention

Beginning in India and now around the world, an app called [Safecity](#) enables people to anonymously crowd-map incidents of sexual violence. The crowdsourced data reported to Safecity is aggregated as hotspots on a map. Stakeholders such as individuals, communities, and local leaders can identify local trends, assess contributing factors, and find solutions to improve safety.[88]

In Mexico, digital tools enable citizens to report instances of sexual violence, drug trafficking, and narco-violence. Mexicans use digital tools to raise awareness about human rights abuses and violence. Women's digital protests against gender violence, for example, use the hashtags #YoTambien (MeToo), #MiPrimerAcoso (My First Harassment), and #SiMeMatan (If I Am Murdered).[89] [Wiki Narco](#) enables Mexicans to report narco-violence through a wiki platform drawing on crowdsourcing data and Google maps to visualize trends across Mexico. The tool allows for a better understanding of incidents of violence, but also of fluctuations in the demarcation lines separating specific cartels.[90]

17. Digital Diplomacy, Negotiation and Mediation

At the United Nations, diplomats recognise the need to use digital tools to support negotiation and mediation. A new toolkit on "Digital Technologies and Mediation of Armed Conflict" provides diplomats with basic digital media literacy skills, and training in the potential dangers or harms that can accompany the use of digital tools, including social media, Geographic Information Systems (GIS), data analytics, blockchain, virtual reality and machine learning.

The toolkit asserts that diplomats and mediators can use digital tools for four key functions of their work: 1) conflict analysis, 2) engaging with parties in conflict to build trust, 3) the inclusion of more stakeholders in mediation processes, and 4) strategic communication.[91] The toolkit suggests when, where, and why technologies can be helpful during different phases of a mediation process and in accordance with the mediation strategy. The UN's webpage on the "[Digital Mediation Toolkit](#)" is supplemented with video interviews and

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[87] For more information on Games for Peace see their website at http://www.gamesforpeace.org

[88] For more information on SafeCity see their website at https://safecity.in

[89] Dubravka Šimonović. "La violencia en línea contra las mujeres en México," Mexico: Luchadoras. November 2017. Found at https://bit.ly/2KPyCAW. Accessed on 21 June 2020.

[90] Robert Muggah and Gustavo Macedo Diniz. "Digitally Enhanced Violence Prevention in the Americas." Stability: International Journal of Security and Development, Vol 2(3), p. 57.

[91] "Digital Technologies and Mediation of Armed Confilict." Geneva: United Nations Department of Political and Peacebuilding Affairs and Centre for Humanitarian Dialogue. March 2019.

additional content. It provides mediators with insights into risk management and tradeoffs in using technology in specific contexts.[92]

18. Digital Inclusion in Peace Processes

In Ukraine, the Donbass Dialogue enabled hundreds of participants to exchange ideas in an online dialogue forum to brainstorm ideas for an inclusive peace process. The platform enabled crowdsourcing prioritising of issues and a robust, ongoing exchange of views in civil society.[93]

Researchers at the University of Notre Dame found that social media was an important method of communication about the Colombian referendum on the peace process. They hypothesised that social media could have helped to engage the public on various options for ending the armed conflict in Colombia and building public support for the peace plan.[94]

In 2019, the Graduate Institute for International and Development Studies, in partnership with Build Up and US Institute of Peace, conducted a project on Digital Inclusion in Peacemaking to enable mediators to effectively use digital technologies in their efforts to enhance inclusion in peace processes. Digital technologies can improve digital inclusion to build the legitimacy of peace processes and their outcomes by involving a broad range of stakeholders, to empower marginalised groups by providing opportunities for participation in peace processes and political institutions, to transform relationships underlying conflict and to protect vulnerable groups.[95]

19. Digital Upstanding

Digital upstanding is a component of digital citizenship, defined as an individual taking responsibility for the safety and culture in their community.[96] Upstanding is the opposite of silent bystanding that occurs on digital communication technologies when many people witness an example of hate or disinformation but are afraid to intervene. Upstanders use digital media to respond to negative behaviours when they experience them online. Upstanders can interrupt disinformation, hate speech, or bullying.

The #Iamhere civil society movement, mentioned earlier in this paper, involves tens of thousands of volunteer "upstanders" who support victims of digital harassment and misogynist, racist, and anti-immigrant hate speech. The Lithuanian citizen armies of "elves"

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[92] For more information on the United Nations Digital Mediation Toolkit see their website: https://peace-maker.un.org/digitaltoolkit

[93] For more information on the Donbass Dialogue see their website: https://www.donbassdi-alog.org.ua/p/about.html

[94] Aastha Nigam, Henry K. Dambanemuya, Madhav Joshi, and Nitesh V. Chawla. "Harvesting Social Signals to Inform Peace Processes Implementation and Monitoring." *Big Data* 5 (4) 2017. Pp. 337-355.

[95] Andreas Hirblinger. "Designing Digital Inclusion in Peacemaking: Summary of Findings", Geneva: Graduate Institute for International and Development Studies. 2020.

[96] Jennifer Petrella. "How to be an Upstanding "Digital Citizen." *Digital Media and Cyberculture.* 8 May 2014.

that fight Russian disinformation are also digital upstanders, as described earlier. In both of these examples, people-powered social movements address digital threats.

20. Digital Social Movements

Civil society groups pressing for human rights and democracy have used digital tools to plan, coordinate, and carry out mass actions on and off digital platforms. Nonviolent social movements make important contributions to peacebuilding by balancing power between groups and raising public awareness about grievances that need to be addressed.[97]

For example, Avaaz is a global digital movement that organises "people-powered politics" in the form of digital petitions and digitally coordinated action to promote social justice, human rights, and democratic norms. Avaaz has organised digital campaigns on a variety of issues, from climate change to preventing war to preventing the spread of false information about COVID 19.[98] The organisation called Social Movement Technologies offers free training to civil society on how they can use technology with guidance for safety and privacy in regions where surveillance and doxing (publishing personal information online) of human rights and democracy activists occur.[99]

The US political contest offers two recent examples of innovative digital social movements using hashtags, which are used to categorise information online. The Black Lives Matter (BLM) movement began with a hashtag (#BlackLivesMatter) that digitally linked isolated police killings of African Americans into an online movement. With the police killing of George Floyd, an unarmed African American man, the digital movement sparked the largest nationwide protests against police violence in the history of the US. When white supremacist groups developed their own hashtags in response to BLM, Korean pop stars urged their fans to flood social media with peaceful messages co-opting white supremacist hashtags. By using this hashtag, the Korean youth were able to drown out violent extremist messages and support the Black Lives Matter movement, from half a world away.[100]

21. Hackathons and PeaceTech Startups

Another type of digital peacebuilding involves identifying current gaps or challenges that might be able to be addressed through new technology. This type of creative problem-solving using technology is called a "hackathon" and emphasises user-centred design where real people with pressing needs drive the process for designing potential technical solutions.

The Tech4Peace initiative in Cyprus grew into a digital space called "Mahallae" where Greek and Turkish Cypriots collaborate on new ideas for using technology to foster peace.

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[97] Nadine Bloch and Lisa Schirch. *Synergizing Nonviolent Action and Peacebuilding*. Washington, DC: US Institute of Peace, 2018.
[98] For more information on Avaaz see their website at https://secure.avaaz.org/page/en/
[99] For more information on Social Movement Technologies see their website at https://socialmovementtechnologies.org
[100] Justin Kirkland. "Inside K-Pop Stans' Social Media War Against White Supremacists." *Esquire.* 8 June 2020. Found at https://www.esquire.com/entertainment/music/a32754772/k-pop-stans-fight-white-blue-all-lives-matter-twitter-hashtags/ Accessed on 14 June 2020.

Mahallae is a combination of the words for a neighborhood in Greek and Turkish. Mahallae is a "digital neighborhood" for civic engagement, tech innovations, and dialogue across the lines of conflict.[101]

The "Hack for Peace in the Middle East" sponsored by "Code for a Cause" brought together diverse groups to explore new apps or technologies that could address local needs.[102] The Municipality of The Hague organises a "Hackathon for Peace, Justice and Security" that brings together diverse groups such as NGOs, NATO, the International Criminal Court, and the Red Cross to brainstorm tech solutions to real-world problems.[103]

International Alert has a team of "#peacehacks" who participate in a variety of hackathons. Build Up offers courses to peacebuilding organisations in the skills necessary to build new technologies, including understanding the product manager role needed to innovate new technologies and work with other groups to form partnerships.

The Washington DC-based PeaceTech Lab hosts "peacetech exchanges" that are workshops to empower peacebuilders in conflict zones with low-cost, easy to use technology. Peace tech hackathons around the world bring together technology, peacebuilding, and business stakeholders to brainstorm and build prototypes of new forms of technology to address human needs.

22. Peace Engineering

Universities around the world have begun work on the ethics and humane design of technology in a new field called "peace engineering." Peace engineering is an exploratory new interdisciplinary approach that uses "the application of science and engineering principles to promote and support peace", as defined by the International Federation of Educational Engineering Societies (IFEES). Peace engineering designs technology with people and their relationships in mind. Peace engineering courses train engineers creating new technologies to anticipate and calculate the impact of that new product on human relationships. What would a social media platform look like if it sought to not only make a profit, but also contribute to social cohesion, to reduce violent conflict, or to improve democratic decision making? Peace engineering also presses peacebuilders to consider engineering and technology as a key component of their work. For example, during COVID 19, many regions short of water built new handwashing stations to reduce transmission of the virus. Such new technologies hold the potential to also strengthen community relations if planned in consultation with community representatives.[104]

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[101] For more information on Mahallae see their website: https://mahallae.wordpress.com
[102] For more information on Code for a Cause see their website at https://codeforacause.co
[103] For more information on "Hackathon for Peace, Justice and Security" see their website: https://www.hacka-thonforgood.org/hackathon-for-good-2018
[104] Lisa Schirch and Alpasaln Ozerdam. "Peace Engineering in a Complex Pandemic World." In *Post-Corona Conflicts: New Sources of Struggle, New Prospects for Peace*. Edited by Richard E. Rubenstein and Solon Simmons. Routledge, 2020.

23. The "Hague Peace Data Standard"

The [Stanford Peace Innovation Lab](#) is working to establish a metrics-based approach to measure and price the value of peace on digital technologies. The Hague Peace Data Standard provides an auditable standard for issuing "peace credits" (think carbon credits but for peace), not only to individuals, but also to the companies, organisations, and communities that generate the data. The [Hague Peace Data Standard](#) incentivises peace engineers to design technology that contributes to social cohesion and broader peacebuilding goals. It also addresses a capital dilemma for both investors and companies who are looking to invest in or be considered compliant with the Environmental, Social and Governance (ESG) Index.[105]

24. Digital Media Literacy

Digital media literacy is essential to peacebuilding given the role of social media in spreading divisive and hateful content. Countries like Finland have implemented such training for children in schools as well as for adults. The country views the public's ability to identify false information as central to its protection against Russian attempts to polarise and divide its society.[106]

The [Global Peace Foundation](#) provides digital media literacy to empower youth and build new work skills. It partners with Ministries of Education and corporate technology partners like Intel, Cisco, and Oracle to create entrepreneurial hubs in Kenya, Paraguay, and the Philippines.[107] In June 2020, the [Digital Inclusion for Peace](#) initiative began to offer new training courses for peacebuilders to increase their knowledge of digital peacebuilding, which has become much more urgent during the COVID 19 pandemic. The project is a collaboration between Conducive Space for Peace, Humanity United, Peace Direct, and Build Up.[108]

25. Digital Public Safety

Governments and non-state armed groups are increasing digital surveillance of citizens. Human rights activists who post online face death threats and sometimes disappear. Digital safety for people working for peace is becoming more pressing. Civil society requires ongoing training and support to protect their privacy and their lives from digital surveillance.

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[105] Margarita Quihaus, Mark Nelson and Lisa Schirch. "Peace Engineering and the Hague Peace Data Standard." Toda Peace Institute. Forthcoming, 2020.

[106] Jon Henley. "How Finland starts its fight against fake news in primary schools." *The Guardian.* 29 January 2020.

[107] For more information on the Global Peace Foundation see their website at: [https://www.glob-alpeace.org/news](https://www.globalpeace.org/news)

[108] For more information on the Shift Power for Peace training courses in digital peacebuilding see their website at: https://www.shiftpowerforpeace.org/en/digital-inclusion/online-courses/

The [Data Detox Kit](#) provides the public with basic digital safety tips to prevent hacking or surveillance. [109] [Frontline Defenders](#) offers tools for human rights groups, bloggers, journalists, and social change activists, including a [digital first aid kit](#) to help prevent data loss and security breaches. [110] In Syria, [SalamaTec](#)h supports civilian safety online by providing emergency tech support to Syrians who have been hacked or imprisoned for their online communications. SalamaTech offers "digital safety audits" and a network of "digital technology first responders" to help empower civilians, particularly women and youth, to feel empowered to communicate safely about the conflict and their work for peace.[111]

Recommendations

Digital technology offers opportunities to build social cohesion, civic engagement and improved human security at a scale impossible with analog tools or in direct person-to-person communication. Both opportunities and challenges remain for the future of digital peacebuilding.[112] In March 2020, Peace Direct convened a global consultation on digital peacebuilding[113] and the Toda Peace Institute held an in-person workshop to further map the work still needed to maximise digital peacebuilding. These recommendations emerge from all of these efforts.

1. Access

Digital technologies are widespread, but many people still do not have access to mobile phones, computers, or the internet. Increasing digital access to all people is necessary for the continued growth of digital peacebuilding.

2.Training

Digital knowledge is necessary to use new technologies to support peacebuilding goals. Even governments and larger peacebuilding organisations are slow to maximise the use of technology to improve peacebuilding. There is still relatively low awareness of the potential contributions that technology can make to peacebuilding. [Tech Change](#) offers courses to improve awareness of the potential for technology to contribute to social and political goods.[114]

3. Innovations in Digital Peacebuilding

Over the last two decades, some of the most impactful and creative digital peacebuilding efforts have emerged from countries with low levels of technology. Digital peacebuilding

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[109] For more information on the Data Detox Kit see their website at https://datadetoxkit.org/en/home
[110] For more information on Frontline Defenders see their website at https://www.frontlinedefenders.org/en/digital-security-resources
[111] For more information on SalamaTech see their website at https://en.salamatech.org
[112] Orna Young and Enda Young. "Technology for Peacebuilding in Divided Societies: ICTs and Peacebuilding in Northern Ireland." Northern Ireland: Transformative Connections, 2015.
[113] Dimitri Kotsiras with Joel Gabri. "Digital Pathways for Peace: Insights and Lessons from a Global Online Consultation." Peace Direct. 6 August 2020. Available at: https://www.peacedirect.org/us/publications/digital-pathways-for-peace/
[114] For more information on Tech Change see their website at https://www.techchange.org

requires continued innovation to develop simple, easy-to-use interfaces between peacebuilding and technology.

4. Limitations of Digital Peacebuilding

Many elements of peacebuilding are not well suited for digital formats. While innovations and complementary efforts are possible, currently there are few digital methods or examples of restorative justice, trauma healing, arts-based methods, security sector reform, demobilisation of armed groups, or other forms of peacebuilding. Digital data collection such as crowdsourcing mobile surveys and other data collection strategies have benefits and limitations.[115] Recognising these limitations of digital peacebuilding is also important, so that analog forms of peacebuilding receive necessary attention.

5. Blending Digital and Analog Peacebuilding

Given that conflict transformation processes require long term, sustained efforts to build peace, there may be new ways of blending digital and analog or physical peacebuilding approaches to structure the best of both worlds. More attention to and examples of this blending would be helpful.

6. Measuring and Evaluating Digital Peacebuilding

Innovations in digital peacebuilding methods have a short track record. Investments of time and resources are necessary to compare, contrast, and identify the impacts of digital peacebuilding versus traditional modes of peacebuilding.

7. Ethics and Unintended Impacts

Technology holds great potential, and also great danger. Good intentions do not always translate into good impacts. Digital peacebuilding will need to continue to guard against the potential negative impacts of new approaches using technology to ensure they are conflict-sensitive and follow the principles of 'Do No Harm.' Digital peacebuilding has the potential to violate privacy, enable surveillance, or expose fragile peacebuilding processes. The JustPeace Lab's publications on "Do No Harm and Tech" and Build Up's "6 Best Practices" aim to address the ethical and potential unintended impacts in digital peacebuilding.[116] Peacebuilding organisations will need to engage in both the work of applying technology for more effective peacebuilding, and advocacy and projects that aim to limit technology's negative impacts on democracy, social cohesion and peace.

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[115] Suda Perera. "To Boldly Know: Knowledge, Peacekeeping and Remote Data Gathering in Conflict-Affected States." International Peacekeeping. Vol. 24. No. 17, October 2017. pp. 803-822.
[116] "6 Best Practices to Manage Challenges in Using Innovations in Peacebuilding." Build Up. July 2020.

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