UNIVERSITY OF SOUTHAMPTON

FACULTY OF SOCIAL, HUMAN AND MATHEMATICAL SCIENCES

Web Science

Volume 1 of 1

Peacetech practices and their potentials for empowerment, participation and peace

by

Jennifer Rhian Gaskell (née Welch)

Thesis for the degree of Doctor of Web Science

June 2018

UNIVERSITY OF SOUTHAMPTON

ABSTRACT

FACULTY OF SOCIAL, HUMAN AND MATHEMATICAL SCIENCES

Web Science

Thesis for the degree of Doctor of Web Science

PEACETECH PRACTICES AND THEIR POTENTIALS FOR EMPOWERMENT, PARTICIPATION AND PEACE

Jennifer Rhian Gaskell

This thesis takes as its starting point the empowerment and participatory potentials of Information and Communication Technologies (ICTs) for peacebuilding that ubiquitous availability – even in conflict-affected area – seemingly presents. It seeks to explore the nature and extent of this transformative potential. It shows that the way this question has been framed to date leads to subtle and often implicit forms of technological determinism, where hopes are placed on new technologies to fix longstanding issues within peacebuilding. This thesis therefore proposes combining a practice lens with a performative view of the materiality of technologies. This performative view is translated in the concept of 'affordances' of ICTs – the possibilities offered for action. And so rather than asking whether new technologies can empower peacebuilders, it reframes the question towards how ICTs are actually being used in practice – what affordances are being leveraged – and whether these practices support or hinder the empowerment and participatory potentials often attributed to ICTs in peacebuilding. Practice is conceptualised as composed of three main elements: materials (including technological affordances), competence and meanings.

The empirical focus of this thesis is on the Build Peace community of practice, a first global community dedicated to peacetech – the practice

of using ICTs for peacebuilding. First an analysis of Build Peace discursive and material practices constructs peacetech practices-as-entities to show what its constitutive elements are and how they are integrated together. The second empirical section of the thesis focuses on the performance of peacetech practices through ethnographic observation of a peacetech project in Burundi. It examines both the project's implementation and the development of its technology. The insights generated from this mixed method approach show that ICTs can indeed afford greater participation in peacebuilding and initiate new forms of engagement in these processes, potentially resulting in empowerment. However this is less due to their ubiquitous availability and more to a combination of various technological affordances unfolding within managed, facilitated processes by actors already engaged in peacebuilding at the local level. More fundamentally this thesis shows that despite aspirations to the contrary, peacetech practices are more likely at this stage to replicate traditional peacebuilding practices than transcend them. This means that power imbalances lamented by decades of peacebuilding literature are not fixed by the availability of new ICTs, even though the technological affordances for such transformative potentials do exist. This thesis analyses some of the reasons why these are currently not actualised and proposes some ways forward for practitioners and policy makers.

Table of Contents

Table of Tables

Table of Figures

Academic Thesis: Declaration Of Authorship

I, Jennifer Rhian Gaskell,

declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

Peacetech practices and their potentials for empowerment, participation and peace

I confirm that:

1. This work was done wholly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. Parts of this work has been published as:

Welch, J. R., Halford, S., & Weal, M. (2014). Conceptualising the web for post-conflict governance building. *Peacebuilding*, (November 2014), 37–41. http://doi.org/10.1080/21647259.2014.973673

Welch, J. R., Halford, S., & Weal, M. (2015). Information and Communication Technologies (ICTs) and Peacebuilding. In *Proceedings of the ACM Web Science Conference - WebSci '15* (pp. 1–9). New York, New York, USA: ACM Press. http://doi.org/10.1145/2786451.2786479

Signed: .....

Date: .....

Acknowledgements

There are so many people I need to thank, from those who have contributed directly to my research, to those who have more indirectly enabled me to carry it out. First I would like to thank my three supervisors for their unwavering support, guidance and sense of humour during what has probably been one of the most challenging times of my life. Professionally and academically I have learnt so much from each of their perspectives over the years. I would like to thank my main supervisor Susan Halford for always just getting what I was trying to do, and helping me use sociological concepts and scholarship to justify my choices. I would like to thank her in particular for making my field trip to Burundi a possibility and for her constant Whatsapp support when I was there. This thesis would not have been possible without her dedication. I would also like to thank Mark Weal for the clarity of his vision at key points during this project and the writing up of my thesis, and for always answering even the most ludicrous of questions. Finally I would like to thank Gerry Stoker for sharing his vast expertise on governance, democracy and political participation, as well as his enthusiasm for my work, and for believing in it perhaps more than I did at times. I would also like to thank Silke Roth for her invaluable insights on early drafts and her reading recommendations – they ended up shaping a large part of my conceptual approach. There would be no thesis without them.

I would like to thank my colleagues at Build Up, Helena Puig Larrauri and Michaela Ledesma especially, my Advisory Panel and everyone in the Build Peace community that provided advice, support and encouragements. This work is for them and I hope it can grow into more conversations about technology, peacebuilding and peace.

I cannot thank Jean Marie Ndihokubwayo and the team at CENAP enough. Their welcome in Bujumbura and the time they invested in supporting this research went beyond what I could have expected. My experience with them has been as inspiring as it was humbling and I am forever grateful for the opportunity to work alongside them for a little while.

Finally I would like to thank my family and friends - my husband and his parents, my Mum and my brother James for making this possible. My husband Paul especially for not giving up and not letting me give up. My friends – Helen, Carole, Hannah, Liz, Manue, Emilie, Delphine, Tracey and Will (and many more) – who have supported me through their encouragements and sense of humour and kept me going over the past five years. My children Amy and Evan for giving me the drive and inspiration to get to the finish line.

Acknowledgements

It all started in 2012 on a July afternoon in Les Carr's office with an interview to join the Web Science Doctoral Training Centre. I am grateful to him and to all at Web Science in Southampton for giving me this opportunity.

Definitions and Abbreviations

ACLED	Armed Conflict Location and Event Data Project
ANT	Actor-Network Theory
BBC	British Broadcasting Corporation
CALCON	California Consensus on Peace Through Technology
CENAP	Centre d'Alertes et de Prévention (Burundi)
CRMA	Crisis and Recovery Mapping and Analysis (Sudan)
DANIDA	Danish Aid Agency
DfID	Department for International Development
DNH	Do No Harm principle of peacebuilding
DRC	Democratic Republic of the Congo
EPOR	Empirical Programme of Relativism
EU	European Union
EWER	Early Warning and Early Response
GDELT	Global Database of Events, Language and Tone
GIS	Geographic Information System
HHI	Harvard Humanitarian Initiative
ICT	Information and communication technologies - hardware and software used by people to access, store and share digital information
IFI	International Financial Institution
IMF	International Monetary Fund
NGO	Non-governmental organisation
PA	Participatory analysis (tool)
PAR	Participatory Action Research

PALIPEHUTU-

FNL	Parti pour la Libération du Peuple Hutu – Forces Nationales de Libération (Burundi)
PDRC	Puntland Development Research Center (Somalia)
SeeD	Centre for Sustainable Peace and Democratic Development
SCORE	Social Cohesion and Reconciliation
SCOT	Social Construction of Technology
STS	Science and Technology Studies
UAV	Unmanned Aerial Vehicle
UK	United Kingdom
UN	United Nations
UNAOC	United Nations Alliance of Civilisations
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UPRONA	Union pour le Progrès National (Burundi)
USA	United States of America
USAID	United States Agency for International Development
USAID – OTI	United States Agency for International Development – Office of Transition Initiatives
USIP	United States Institute of Peace

Chapter 1 Overview

1.1 Introduction

> 'Technology is increasingly everywhere you look and as well we in the NGO sector, we're hearing from donors and funders this buzzword 'innovation' - 'bring us something that's game changing'; 'bring us something that's new'; 'bring us something fresh'. And this is how we end up with projects giving iPads to newborn babies in Burkina Faso to track their health indicators.' (Chungong, 2015a)

With the rapid growth and development of the web and other information and communication technologies (ICTs)[1] since the 1990s, there has been much enthusiasm about the nature of its transformative effects. In globalisation debates, for example, Manuel Castells (2009, 2010) credits the advent of a new form of society to ICTs – the 'network society'. More recently ideas about the apparent power of ICTs to effect socio-political change have gained renewed momentum in the events surrounding the Arab Spring (Howard and Parks, 2012; Khondker, 2011). Although scholars have tempered an initial enthusiasm for the role of new technologies in these events (Wolfsfeld et al., 2013), much of the initial research focus has remained on uses of these technologies in a destructive context, ousting oppressive regimes for example (Howard and Parks, 2012; Wood, 2013), or by terrorist organisations (Weimann, 2006; Neumann, 2009). With this focus, a strong case is made for the potential of ICTs to transform different elements of society, including political structures and institutions. Subsequently, this has led some to consider the possibilities ICTs might offer for a range of activities undertaken *after* intra-societal conflicts have subsided when rebuilding post-conflict societies. As the quote above from Cindy Chungong, former Country Director at Search for Common Grounds hints at, interest for integrating ICTs in various aspects of peace and conflict work has been growing. Its subtext highlights that in the early days, enthusiasm seems to rely more on an intuition that ICTs can have great potentials for building peace, rather than well-known or understood outcomes. The aim of this

[1] In this thesis ICTs refer to the hardware and software that allow people to access, store and share digital information

thesis is to deconstruct and problematize this intuition. I do so by exploring the emergence of a set of *practices* that have focused on the uses of ICTs for peacebuilding. I define peacebuilding following Autesserre, as 'actions aimed at creating, strengthening, and solidifying peace' (Autesserre, 2014, p.21).

As early as 2004, Sanjana Hattotuwa (2004, p.39) highlighted an 'increasing confluence between ICT, conflict transformation and peacebuilding'. Kahl and Puig Larrauri (2013) trace the origins of peacetech to early methods of 'crisis mapping': the real-time gathering, analysis and display of data in a crisis through platforms such as Ushahidi, an open-source crowdsourcing platform developed in Kenya to monitor election violence. The Harvard Humanitarian Initiative (HHI) and Department of Political Science at John Carroll jointly hosted the first 'International Conference on Crisis Mapping' in Cleveland in 2009.[2] At the conference, practitioners, academics and software developers met to discuss different crisis mapping projects, best practices and lessons learned. While 'Crisis Mapping' eventually broadened to a wider field of digital humanitarian work, a small section of practitioners started using and developing crisis-mapping technologies for conflict prevention in the form of Early Warning and Response (EWER) systems. This according to Kahl and Puig Larrauri opened the way for peacebuilders to use ICTs on a more systematic basis (Kahl and Puig Larrauri, 2013). The Build Peace conferences in 2014, 2015 and 2016; the establishment of USIP's Peacetech Lab in 2015; the California Consensus on Peace Through Technology (Calcon) Summit; and the PeaceTech Forum in Finland show growing institutionalisation of these activities and a wealth of examples, opinion pieces and case studies increasingly recognising the potential roles of ICTs for peacebuilding. The term 'peacetech' emerged in 2015 with the creation of the United States Institute of Peace's Peacetech Lab and came to represent the practices of using ICTs for peacebuilding. As Kahl and Larrauri put it:

> 'The empowerment of people to participate in localized conflict management efforts is one of the most significant innovations and opportunities created by new technologies.' (Kahl and Puig Larrauri, 2013, p.1)

To understand the significance of this statement, a brief historical overview of peacebuilding is helpful at this stage. Most authors trace the emergence of the term

[2] http://crisismappers.net/page/iccm-2009

'peacebuilding' to the writings of Johan Galtung (1975), who used it as one of three approaches to peace, together with peacemaking and peacekeeping (Paffenholz, 2010, 2011; Ryan, 2013). Galtung differentiates between negative peace, which is the absence of violence, and positive peace (Galtung, 1975). For Galtung 'peacebuilding achieves positive peace by creating structures and institutions of peace based on justice, equity and cooperation, thus addressing the underlying causes of conflict' (Paffenholz, 2010, p.45). However, the term is not found to have generated much interest from scholars and practitioners until its 'rebirth' in *An Agenda for Peace* by then UN Secretary-General Boutros-Ghali in 1992 (Secretary-General, 1992, para.21). In this document, peacebuilding is defined as 'action to identify and support structures which will tend to strengthen and solidify peace in order to avoid a relapse into conflict', and assisting in peacebuilding means 'rebuilding the institutions and infrastructures of nations torn by civil war and strife; and building bonds of peaceful mutual benefit among nations formerly at war'. This marks the beginning of a flurry of activity on the part of the United Nations (UN), other international organisations and individual countries, under the banner of peacebuilding. Ryan (2013) notes that between 1992 and 2001, academic journals began publishing articles on peacebuilding, a trend which accelerated significantly after 2002 highlighting growing academic interest in this field of practice.

Early peacebuilding missions coordinated by the UN emerged amidst a sense of international optimism following the end of the Cold War (Ryan, 2013; Sabaratnam, 2011; Paffenholz, 2011, 2010), which might explain a sudden willingness to overtly embrace infringements to the fundamental principle of non-intervention in the affairs of a sovereign nation. Several intersecting elements contributed to the growing acceptance that intervention in conflict societies to restore or achieve peace was permissible, desirable and possible. First the changing nature of conflicts from inter-state wars to what was often called 'ethnic conflicts', 'intra-societal conflicts' or 'new wars' (Kaldor, 1999), seemed to demand different kinds of peace strategies (Ryan, 2013). Second the end of the Cold War 'unfroze' some of these protracted conflicts (Paffenholz, 2010) and allowed for greater involvement by the international community in the peace processes in Cambodia, El Salvador, Namibia and Northern Ireland (Ryan, 2013, p.26). Third the way the Cold War ended, according to Ryan (2013, p. 27), 'encouraged a more crusading form of liberal interventionism'. Finally there was a simultaneous growth in the idea that human rights protection was more important than respect for state sovereignty,

highlighted in the 2001 report *Responsibility to Protect* (Ryan, 2013; Sabaratnam, 2011; Sending, 2011). According to Sabaratnam (2011), the 'conceptual adjustments to the political status of sovereignty' resulting from the Responsibility to Protect principle served as the basis for humanitarian and other forms of intervention. These interventions were undertaken with the 'shared conviction that political and economic liberalism offered a key to solving a broad range of social, political and economic problems, from under-development and famine, to disease, environmental degradation and violent conflict' (Paris, 2011b). As such scholars tend to agree that early peacebuilding activity and thinking focused mainly 'on the democratic rebuilding of states after armed conflict' (Paffenholz, 2011; Sabaratnam, 2011).

The events that unfolded in the early 1990s in Rwanda, Somalia and Yugoslavia severely dampened this optimism, as reflected in the 1995 supplement to *An Agenda for Peace*, where more emphasis was put on preventive measures as part of peacebuilding (Sabaratnam, 2011; Ryan, 2013; Paffenholz, 2010, p.46). Witnessing these crises crystallised the belief that the world, outside of the West, was growing increasingly chaotic and disordered. It also reinforced the 'medicalised' view of 'war-torn societies' as patients unable to manage. At this point some scholars began questioning the power dynamics of peacebuilding interventions. For example Hughes and Pupavac (2005, p. 9) argue that 'to the extent that the diagnosis points to mental rather than merely physical illness, the delegitimation of local agency is completed'. These views also contributed to the broadening of the concept and practice of peacebuilding to foster the notion of 'sustainable peace', emphasising the need to 'remake post-conflict social relations and deter future human rights abuses (Sabaratnam, 2011). At this stage interventions remained guided by the assumption that the problems of peacebuilding 'lay in elite blockages to peace and development, to be removed through the export of liberal institutional frameworks of democracy and the market' (David Chandler, 2013a, p.276). As doubts began to emerge regarding the effectiveness of rapid economic liberalisation programmes heralded by the international financial institutions (IFIs) (Klein, 2007; Mac Ginty, 2011), the focus of the IFIs such as the International Monetary Fund (IMF) and the World Bank shifted towards 'good governance' as a condition for financial aid (Mani and Krause, 2009; Goldsmith, 2007, p.27). As a consequence and in parallel with the broadening scope of peacebuilding following the events in Rwanda, Somalia and Yugoslavia, there was also a shift in emphasis on institutional strengthening that

came to be known as ‘statebuilding’ (Paris, 2011b). According to Paris (2011), the operations launched in 1999 in Sierra Leone, Kosovo and Timor-Leste had more explicit statebuilding mandates.

These trends crystallised after 9/11 and the subsequent securitisation of ‘failed states’, which came to dominate political activity, mainly in the United States (US) and United Kingdom (UK) (Sabaratnam, 2011). The general consensus was that ‘statebuilding’ was a way to construct ‘effective, legitimate institutions of governance’ (Paris & Sisk, 2009), and focused on a compromise between democracy, stability and sovereignty (Sabaratnam, 2011; Mac Ginty, 2011). While the UN was essentially sidestepped in the interventions in Afghanistan and Iraq, its peacebuilding activities did not stop during that time. The 2000 Brahimi Report (United Nations, 2000) presented lessons learned from the ‘challenges and failures of the 1990s’ exemplified by the interventions in Rwanda, Bosnia and Somalia (Ryan, 2013, p.30). The report suggested considering the creation of a peacebuilding infrastructure within the UN, resulting in the establishment of the Peacebuilding Commission and a Peacebuilding Fund in 2005. Sierra Leone, Burundi and Guinea-Bissau were the first to receive support from this newly created infrastructure. However a 2010 evaluation report (United Nations, 2010) highlighted several pervasive gaps when it called for ‘more genuine national ownership; greater civil society involvement; better relationships with the main UN bodies and with international financial institutions; more flexibility; …; better performance; more empowerment’ (Ryan, 2013; United Nations, 2010). Outside of the UN system, the debacles in Iraq and Afghanistan also provided insights into the apparent failures of many peacebuilding endeavours which started off with broad statebuilding ambitions yet failed to stop overt violence, let alone bring about sustainable peace (Barbara, 2008; Barakat et al., 2012; Menocal, 2010; Sörensen, 2012). For many it further called into question the ability of interveners to effect positive change towards peace, or the legitimacy of peacebuilding, as developed in the works of Mac Ginty, Richmond or Pugh for example (Mac Ginty, 2011; Mac Ginty and Richmond, 2013; Pugh, 2013; Richmond, 2009).

In fact, large portions of peacebuilding commentary focus on trying to explain peacebuilding’s successes and failures. A key reflection in particular refers to local ownership or the idea that when the ‘locals’ are empowered to define and build their own peace, it will be more just and sustainable (Mac Ginty and Richmond, 2013). Lederach famously presented a first attempt to give local populations more

prominence in peacebuilding thinking academically and on the ground, arguing that their constructive participation in peacebuilding processes possesses the strongest potential for change and sustainable peace (Lederach, 1997; Paffenholz, 2014). As such their empowerment should form a priority of peacebuilding work.

This is precisely what Kahl and Larrauri identify as one of the promises of new ICTs as illustrated in their earlier quote. However two key challenges must be addressed in order to explore the transformative potentials of ICTs for peacebuilding. First the notion that technologies 'create' opportunities betrays a rather simplistic conceptualisation of the relationship between technology and social change. And second, whilst there is much talk about the transformative potentials of ICT for peacebuilding, rather less is known about how this is actually done on the ground. This is certainly true of many subject of social scientific enquiry, but it is especially challenging for this research into the emerging field of practice that uses ICTs for peacebuilding. The approach I detail in the following section addresses both these challenges in setting and addressing my research questions.

1.2 Approach and contributions

> 'Action research starts with everyday experience and is concerned with the development of living knowledge, in many ways the process of inquiry is as important as specific outcomes.' (Reason and Bradbury, 2000, p.2)

In answer to the challenges outlined above, I combine two strands of theories to build a conceptual framework for this thesis: one is based on practice theory and another is concerned with the relationship between technologies and social change, Science and Technology Studies (STS), which I expand on in Chapter 2. I conceptualise peacetech (and peacebuilding) as sociotechnical practices. In defining practices, I adopt Schatzki's definition of 'open-ended spatial-temporal manifolds of actions' (Schatzki, 2005, p.471), but add that these actions are made up of three elements, following Shove et al. (2012): materials, competences and meanings. Materials include 'objects, infrastructures, tools' and technologies; competences include 'background knowledge – multiple forms of understanding and practical knowledgeability'; and meaning includes 'mental activities and motivational knowledge' (Shove et al., 2012, p.23). These elements combine over time to form practices. In this conceptualisation, ICTs are part of peacetech practices as materials, which runs the risk of falling into a technologically deterministic

appreciation of their transformative potential. Technological determinism, the idea that a technology can have predictable impacts in society, has been discredited for failing to grasp the wider context and uses of technologies in accounting for their role in society (Halford et al., 2010). Using STS insights, I propose instead the concept of affordances – the possibilities offered for action (Hutchby, 2001) – of ICTs, which can be leveraged in different ways in peacetech practices. In Chapter 2, I argue the conceptual case for constructing this framework, and demonstrate its empirical value in the rest of this thesis.

A key advantage of this approach is in the framing of the agenda for peacetech. Indeed as I show in Chapter 2, an inquiry into the overall nature and extent of the transformative potential of ICTs for peacebuilding could easily result in technologically deterministic questions such as what can ICTs do for peacebuilding? What are the impacts of ICTs in peacebuilding processes? Focusing instead on practices and technological affordances allows for a more nuanced, and I will argue, richer perspective on these questions. This thesis therefore seeks to answer the following research questions:

(i) What are peacetech practices and what claims are currently made about their potentials for participation and empowerment?

(ii) How are ICTs adopted and their affordances leveraged in peacetech practices and with what consequences?

(iii) How can peacetech practices support or hinder the empowering and participatory potential ICTs could afford peacebuilders?

I answer these questions from a specific positionality. Throughout this research, I co-founded Build Up, an international social enterprise dedicated to amplifying citizen participation in peacebuilding through technology, arts and research. Build Up organises the annual Build Peace conference, the first conference on technology for peacebuilding globally. The Build Up team has worked in various peacebuilding contexts around the world – Colombia, Nigeria, South Sudan, Somalia, the Central African Republic, Burundi, Cyprus and Syria among others. This experience is both informed by and has informed the work presented in my thesis. I come back to the operational and ethical tensions that this causes more specifically in Chapter 3, but as Reason & Bradbury (2000) put it, an important objective of this thesis is to generate 'living knowledge' of a field in the process of emerging. I initially tested these ideas with an Advisory Panel set up to accompany parts of my research. The Panel was composed of peacebuilding experts and practitioners who have all

experienced or contributed their thoughts to peacetech practice. The aim of these rounds of interviews was to sense check the framing and agree a methodology that could contribute to the peacetech field of practice. Based on my analysis of the Panel's feedback, I designed the component of the research methodology outlined in Chapter 3. Where methodological decisions were influenced by the Panel's views, I explicitly state so in Chapter 3.

My position in peacetech allowed me to answer these research questions by drawing from a wide range of empirical data. I follow Nicolini's 'injunction (contra traditional approaches), to start the investigation into social phenomena not via roles and individuals and their actions, but via the material and discursive practices that allow them to occupy such subject positions' (Nicolini, 2012, p.178). A first empirical section (Chapters 4 and 5) thus focuses on peacetech through what Shove et al. refer to as practices-as-entities (Shove et al., 2012, p.8), that is the elements they are made up of – what materials, competences and meanings make up peacetech. In line with a sociotechnical approach, peacetech's materials emphasise the technological affordances of ICTs and how they are leveraged rather than which technologies are used. I focus my empirical data collection for this part on Build Peace as a community of practice in line with the idea that 'practice is reproduced in time through a process of active engagement and participation sustained by a specific community' (Nicolini, 2012, p.78). Here the term community refers to a 'learning mechanism' rather than some form of identity or culture sharing entity (Nicolini, 2012, pp.79–88). The Build Peace community has evolved around the annual Build Peace conferences on the role of technology for peacebuilding.[3] Chapter 4 examines the Build Peace community's discursive practices through the analysis of dominant themes and narratives presented at the Build Peace conferences in 2014, 2015 and 2016. This contributes to our understanding of peacetech practices by outlining not only the elements that make up these practices and how they are conceived and talked about, but also the motivations for and rationale of bringing them together. It also shows that one key way in which elements combine in peacetech practice is through projects, which Krause defines as having 'specific outcomes, set start and end dates and established budgets' (Krause, 2014, p.25). Over two years I collected and categorised 168 peacetech

[3] For more information see www.howtobuildpeace.org

projects from the Build Peace community in the Build Peace Database.[4] Chapter 5 analyses insights from the Build Peace Database, showcasing four examples of peacetech projects to illustrate practically what affordances are leveraged, what general understandings are involved in these processes and what meanings are ascribed to them. Overall this first section constructs a picture of peacetech practices-as-entities, providing some elements of answer to each of my three research questions. But as Shove et al. argue, there is a dynamic quality to social practices that I capture in the second part of my empirical work (Chapters 6 and 7) focusing on peacetech 'practice-as-performance' through the case study of the development and piloting of a participatory analysis platform in Burundi. Chapter 6 addresses the project implemented in action, with a focus on the theme of 'participation', which I noted at the outset of this Chapter was perceived as a key potential of ICTs for peacebuilding, together with empowerment. Chapter 7 deals with how this project, and its technology, came to be, by focusing on the development of the participatory analysis platform and the theme of empowerment. In the first part of the concluding Chapter, I bring my findings together, illustrating the benefits of reframing the peacetech conversation. I find that too often this conversation has been characterised by a subtle and implicit technological determinism, where hopes are placed on new technologies and ICTs to fix the crisis of legitimacy that has afflicted peacebuilding. In the final part of my concluding comments, I outline practical implications for my findings and further avenues of research.

The work presented in this thesis offers four levels of contributions. First the development of a novel conceptual framework focused on the uses of technologies through their affordances and how they are leveraged in peacetech practices provides a richer analytical account of the uses and potentials of ICTs for peacebuilding. It moves the debate beyond the current binaries of good versus bad ICTs, opportunities versus risks of technologies and allows us to understand how different elements that include technologies and their affordances come together through shared understandings and for different purposes in peacetech practices. As such it sheds light on which elements, and processes bringing those elements together, tend to support and which tend to hinder the participatory and empowering potentials that ICTs could afford peacebuilding processes. This could

[4] For more information see www.buildpeacedatabase.org

be of interest not only for peacetech practitioners, but also for the wider peacebuilding community that wishes to make a space for ICTs in their work. Second, the empirical data generated for this project represent a first dataset of peacetech material and discursive practices, and the first holistic analysis of this emerging field. It shows that the possibilities offered by ICTs can afford greater participation and empowerment in peacebuilding. However current peacetech and established peacebuilding practices do not tend to support this process. As such the findings from this thesis will also be of interest to donor organisations and policy makers, because it offers some recommendations on how to approach funding and sustaining peacebuilding innovation. Third, this work provides an example of a sociological approach to the study of peacebuilding, which goes some way to bridging the ever-growing gap between theory and practice in peacebuilding. Indeed a practice lens provides a welcome escape from a central debate in social theory but also in peacebuilding – the question of agency. Because as Nicolini argues, 'both the system and individuality are sources of agency', and 'practice and practitioners emerge together' (Nicolini, 2012, p.178). Fourth and finally other social scientists might find that the conceptual framework developed and applied in this thesis could help them understand the transformative potential of ICTs in other types of social practices. The open-ended nature of this framework makes it particularly well suited for flexible versatility and application to other socio-political contexts.

1.3 Structure of the thesis

In Chapter 2 I review the peacetech literature, problematizing this thesis' key concepts of 'peacebuilding' and 'technology'. I outline key challenges in the literature that provide the rationale for the development of a conceptual framework that combines a practice lens with the performative materiality of technologies through the concept of leveraged affordances.

In Chapter 3 I outline the project's methodology, including the elements that have informed it and the methodological implications of my proposed conceptual framework. More specifically I discuss my dual role as researcher and practitioner in the field of peacetech, some of the tensions this has raised and the motivation for the study to be participatory overall. I make the case for a methodological approach grounded in eclectic pragmatism translated into a mixed method design. I then

discuss the ethical risks raised by my research and what steps I took to mitigate them.

In Chapters 4 and 5, I focus on peacetech practices-as-entities. Chapter 4 provides a review of peacetech discursive practices on the transformative potential of ICTs to increase participation and to empower peacebuilders. I present and unpack dominant themes and narratives of peacetech practices as presented at the Build Peace conferences and show that currently peacetech practice is mainly conceived through 'projects'. Chapter 5 presents a review of peacetech projects from the Build Peace community of practice. I present data gathered through the Build Peace Database and the Build Peace conferences to generate insights on how technological affordances of ICTs are leveraged and by whom to enhance participation and empowerment in peacebuilding processes.

In Chapters 6 and 7, I explore peacetech practices-as-performance. Chapter 6 focuses on a project in action. It explores the participatory potential of ICTs and how it relates to peacebuilding processes, drawing more specifically on a case study. In it I explore the experience of a team of CENAP (Centre National d'Alertes et de Prévention) in Burundi introducing an online participatory analysis tool to their peacebuilding work. This would enable key stakeholders in existing dialogue processes to analyse data collected through a survey of Burundian youth on their vision for the future. This Chapter focuses on the implementation of this tool and its implications for CENAP's work and impact. Chapter 7 focuses on how this participatory analysis tool came to be and the claim of the empowering potential of ICTs for peacebuilding. It draws particularly on interviews and ethnographic observation of the Build Peace Fellowship projects, which supported the development and pilot implementation of the participatory analysis tool described in Chapter 6.

Chapter 8 brings the findings from the four previous Chapters together and provides a conclusion, which highlights the limitations of this project, and avenues for further research. I then discuss the relevance of my findings for peacetech, peacebuilding policy makers and practitioners, and social scientists further afield interested in the role of technologies of processes of change.

Chapter 2 A socio-technical approach to peacetech practices

In this Chapter I develop the conceptual framework for the rest of this thesis. I take as a starting point a review of the emerging peacetech literature and identify some important challenges in it. The first is a tendency towards technological determinism, or the idea that a technology can have predictable impacts on society (Halford et al., 2010) in prevalent conceptualisations of ICTs. The second is an under-conceptualisation of the linkage between the technologies and their potentials for peacebuilding identified in the literature: participation and empowerment. I argue that these gaps can be addressed by shifting the focus of analysis from a systemic view of peacebuilding or global technological advances and penetration to how peacetech is actually done on the ground. However this has not been the prevalent approach to date in either peacetech or the more extensive peacebuilding scholarship, which tends to discuss peacebuilding, its challenges and impacts, as macro-level phenomena. This Chapter identifies and evidences these issues and proposes a conceptual framework that follows an alternative approach and supports bridging the gaps mentioned above conceptually, empirically and analytically.

In section 2.2 I discuss the value of adopting a sociotechnical conceptualisation of technologies and propose the concept of affordances. I show how this demands a conceptual and empirical focus on the processes of leveraging affordances in peacebuilding contexts. In section 2.3 I argue the case for adopting a practice lens to do so. Indeed I show how this is also helpful in rendering more explicit the linkage between peacetech, peacebuilding, participation and empowerment. In section 2.4 I combine the previous insights into the conceptual framework adopted in the rest of this thesis. I discuss the implications this has for actors and practitioners, questions of agency, spatial and temporal linkages within and between practices. While I discuss the methodological implications of this framework in Chapter 3, I argue that far from theoretically exhausting all permutations of peacetech practices, it sets the scene for an empirical exploration of what peacetech practices are, how affordances of ICTs are leveraged in peacetech and whether those practices support or hinder their participatory and empowerment potentials.

2.1 Situating the emergence of ‘peacetech’

The term ‘peacetech’ emerged in 2015 with the creation of the United States Institute of Peace’s (USIP) Peacetech Lab as an umbrella term for a focus on new ICTs and their

possible role in peacebuilding and peace. Of course the media had also been discussed in relation to peacebuilding, notably because of the recognition of its role in conflict escalation processes (Hoffmann, 2014, p.101; Howard, 2002; Himelfarb, 2009). Hoffmann notes that whereas 'communication' was recognised by the UN from 1996 already as a 'cross-cutting peacebuilding issues, transcending all categories of activities', the literature had tended to focus on 'employing [broadcast] media as strategic tool for intervention' (Hoffmann, 2014, p.116). Traditional media, including peace journalism is not the focus of peacetech, which despite the fact that ICTs have been used in peacebuilding contexts for more than a decade has only recently become the concerted focus of practitioners and researchers. In 2013, *Stability Journal* launched the first in a series of special collections on 'New Technologies for Peace and Development'[5], followed by the *Journal of Peace Research* in 2015[6] and a collection of papers in *International Studies Perspectives* in 2017[7]. We can also trace earlier interest in the potential of ICTs for peacebuilding pre-dating this by a decade or more with some academic work on the role of so-called 'digital diasporas' (Brinkerhoff, 2011, 2007; Turner, 2008; Kent, 2006). The main argument of this early work focuses on certain characteristics of the web (as a digital technology) that diasporas, 'immigrants who maintain a connection, psychological or material, to their place of origin' (Brinkerhoff, 2011, p.116), use in order to have an impact in their home countries or regions. For example Brinkerhoff (2011) highlights the web as an enabler of global, coordinated action that in turns impacts peacebuilding efforts on the ground, such as increased access to information beyond a specific location, the reconfiguration of networks of communication, the provision of an organisational base that allows for the creation of a sense of identity and solidarity around a shared cultural heritage or specifically framed issues. As mentioned before, while some commentators linked ICTs and peacebuilding processes in 2004 already (Hattotuwa, 2004), Kahl and Puig Larrauri trace the origins of a more systematic focus on ICTs for peacebuilding to the development of the crisis mapping community and their 'Crisis Mappers' conferences, which explored the potentials of technologies such as Ushahidi for humanitarian and subsequently conflict prevention work (Kahl and Puig Larrauri, 2013).

Academic work dedicated specifically to ICTs for peacebuilding often focuses on specific technological tools. The *Voix des Kivus* project from Columbia University for example, studied a 'crowd-seeding system in Eastern Congo that uses cell phones to obtain high-

[5] See http://www.stabilityjournal.org/collections/special/new-technologies-peace-development
[6] See http://journals.sagepub.com/toc/jpra/52/3
[7] See https://academic.oup.com/isp/article-abstract/18/1/4/2726613?redirectedFrom=fulltext

quality, verifiable, and real-time information about events that take place in hard-to-reach areas' (Van der Windt and Humphreys, 2014). Other examples include work undertaken at the Cyprus Interaction Lab on 'how the use of table-top technology might be able to promote peaceful attitudes and mitigate conflict in a school environment' (Ioannou et al., 2015); how virtual reality can be used to research how conflict groups relate to one another (Hasler et al., 2014); or how open source mobile technologies can help police in Brazil, South Africa and Kenya[8].

From personal experience in many of these projects, Kahl and Puig Larrauri (2013) propose one of the earliest attempts at conceptualising this diverse and emergent field of ICTs and peacebuilding. They contend that ICTs can connect people and give them a voice, thus allowing for new forms of engagement in peacebuilding contexts. They argue for a wider perspective on the role of ICTs in post-conflict societies beyond early warning by proposing a four-fold framework of the functions technology can have in peacebuilding, such as data processing, communication, gaming and engagement; and the types of programmes they can be used for, such as early warning, promoting peaceful attitudes, fostering collaboration and influencing policy, respectively (Kahl and Puig Larrauri, 2013). This framework both categorised existing interventions such as those mentioned above and challenged practitioners and academics to think more broadly about what could be done with ICTs in peacebuilding. In 2014 Tellidis and Kappler problematized some of these arguments in their paper entitled *Peacebuilding 2.0?*, positing the following questions (Tellidis and Kappler, 2014):

> '(a) can ICTs enable marginalised actors to transcend the peacebuilding and statebuilding politics played out between national and international actors, and lead to a more locally-owned, more representative transformation of the conflict?
>
> (b) can ICTs promote more hybrid manifestations of peace, reflecting both the diversity of local needs and interests as well as international agendas? and, finally,
>
> (c) is a particular set of conditions, or 'enablers', necessary in order to allow for their use in a transformative context?'

More recently Firchow et al. contend that 'with the recent introduction of digital communication technologies into peacebuilding, a negotiation of the space these

[8] See http://www.igarape.org.br/en/smart-policing/ for more details

technologies hold is still in question' and they go further by asserting only time would tell whether 'digital technologies [would] graduate to be seen as tools for positive social change or whether they may impede peacebuilding processes (Firchow et al., 2017, p.5).

This shows a growing recognition that the uses of ICTs in peacebuilding represent an area of academic interest. So far this review shows that the prevalent conceptualisation of ICTs is instrumental. For example Firchow et al. (2017, p. 8) refer to digital ICTs as 'only an amplifier of human intent'. Most conceptualise ICTs as 'tools' or 'instruments' (Tellidis and Kappler, 2015, p.2). This leads to studies asking questions such as 'how virtual reality can help enhance empathy across conflict groups' (Hasler et al., 2014) for example, similar to those mentioned earlier. This denotes a tendency towards technological determinism, the idea that ICTs can have predictable effects on certain aspects of peacebuilding. Van de Windt and Humphreys for example conclude that their crowd-seeding system can help 'to obtain high-quality, verifiable, and real-time information about events that take place in hard-to-reach areas' (Van der Windt and Humphreys, 2014). This tendency is also evident when scholars highlight the perceived potentials of ICTs for peacebuilding. In another publication, Van der Windt, referring to the *Voix des Kivus*, states that 'ICT has major potential to empower people' (Van Der Windt, 2014, p.145). Most of the commentary on the uses of ICTs for peacebuilding echoes this view and seems to emphasise the instrumentality of ICTs with regards to participation and empowerment in particular. Some argue that new technologies enable more people than ever before to take part in peacebuilding processes (Kahl and Puig Larrauri, 2013; Tellidis and Kappler, 2014; Mancini and Perry, 2014; Mancini and Reilly, 2013; Larrauri et al., 2015). Tellidis & Kappler for example start by stating that 'conflict transformation and peacebuilding processes have been heavily critiqued for their inability to empower the grassroots', concluding that '[t]his is precisely the point where the peace-seeking everyday can be empowered vis-à-vis the power-seeking elite(s), and also where the international community's role should carefully throw its weight and focus, mindful of the risks associated with ICT's wider social power' (Tellidis and Kappler, 2014). Similarly Kahl and Puig Larrauri state that:

> 'The empowerment of people to participate in localized conflict management efforts is one of the most significant innovations and opportunities created by new technologies. Technology can contribute to peacebuilding processes by offering tools that foster collaboration, transform attitudes, and give a stronger voice to communities.' (Kahl and Puig Larrauri, 2013, p.2)

Authors differ on which aspects of new technologies result in popular empowerment, with some emphasising the availability of digital sources of data and information as a new

source of power for ordinary people (Mancini and Perry, 2014; Letouze, Meier, et al., 2013), while others focus on the ability of new voices to be heard and shape the direction of a more locally owned peace (Kahl and Puig Larrauri, 2013; Tellidis and Kappler, 2014). But for the most part what Tellidis and Kappler summarise as 'conflict transformation and peacebuilding processes have been heavily critiqued for their inability to empower the grassroots' is largely left unexplained in peacetech literature.

Another challenge highlighted in this review relates to the technologically deterministic tendency noted earlier and refers to the fact that the way peacetech is described does not entirely reflect how it is done. In the *Voix des Kivus* example the conclusion drawn by the authors was that the crowdseeding system that used mobile phones enabled the collection of accurate real-time data of actual events unfolding in hard to reach areas of the Kivus province in Eastern Congo. Perhaps at least equally if not more important than the capacities offered by their system to get usable data was the ability of a team of researchers from Columbia University to set up and test that system with university resources and funding. With a focus on either specific technologies or more broadly an over-generalisation of their potentials for peacebuilding, current literature does not provide ways to conceptualise the link between new technologies and their effects on peacebuilding processes or peace in the way that they are actually used. Consequently, in the following sections I propose a dual shift in perspective calling for a more nuanced conceptualisation of ICTs and their transformative potentials, and a focus on practices as the ontological unit of analysis for this research. This shift is simultaneously theoretical, analytical and empirical. Indeed I show in the remainder of this thesis that reframing the enquiry into the transformative potentials of ICTs for peacebuilding in this way allows to generate empirical data and analyses that are richer than current accounts, enabling those to move beyond binary considerations of opportunities (the good) versus risks (the bad) (Tellidis and Kappler, 2015). I begin in the next section by outlining my conceptualisation of the relationship between technologies and social change.

2.2 Affording socio-political change: a non-linear approach

> 'Still, some commentators have suggested, remnants of the modernisation paradigm are still easily recognisable in the assumptions and methodologies underlying many current projects, especially those in the realm of using 'new' ICTs for development that all too often recline into the comfortable but largely discredited assumptions of technological determinism.' (Hoffmann, 2014, p.104)

Chapter 2

In this section I outline a first element of the conceptual framework for this thesis grounded in literature on technology and social (and political) change. In the same way that Mac Ginty (2011) and others have critiqued the view that 'technocratic practices and scientifically proven 'solutions' from the global north will 'solve' the problems of underdevelopment and conflict', most already recognise that the use of ICTs in peacebuilding initiatives will not represent a game changing solution (Mac Ginty, 2011, p.60; Pugh, 2013; S. P. Campbell et al., 2014; Mancini and Reilly, 2013), as even those advocating the uses of ICTs as a tool for peacebuilding are forced to recognise the limited predictability of using those technologies on the ground.[9] Nevertheless the approach of most of these authors remains linear. Indeed either ICTs contribute to empowerment (Kahl and Puig Larrauri, 2013) or they 'may impede peacebuilding' (Firchow et al., 2017, p.5). In this section I present a theoretical justification for unpacking the concept of 'technology', which I further justify empirically in the remainder of the thesis.

The relationship between technology and its social effects, including the type of agency attributed to the former in socio-political contexts, has been the focus of a long standing debate in the field of Science and Technology Studies (STS) (Winner, 1996). STS represents a set of theoretical perspectives on science and technology, which evolved as a critique of technological determinism. The latter claims 'certain innovations are inevitable because of the underlying logic of science or that a given technology will produce predictable outcomes' (Halford et al., 2010, p.2). Hackett et al. argue that 'STS has become an interdisciplinary field that is creating an integrative understanding of the origins, dynamics, and consequences of science and technology' (Hackett et al., 2008). The origins of STS can be attributed to Kuhn's work, which opened up the 'possibility of looking at science as a social activity' (Hackett et al., 2008, p.14). Subsequently, the Empirical Programme of Relativism (EPOR) developed and focused on scientific controversies (Hackett et al., 2008, p.14). Pinch and Bijker subsequently extended the principles of EPOR to the study of technology, emphasising its social construction (SCOT) (Pinch and Bijker, 1984). Specifically they showed how technological artefacts are interpreted by 'relevant social groups' over a period of flexibility, which ends in a form of negotiated closure leading to stabilisation of the artefact for the groups involved and the wider society. SCOT has been criticised on several grounds, most fundamentally for ignoring the 'reciprocal relationship between artefacts and social groups' (MacKenzie and Wajcman, 1999, p.22). Winner wrote a powerful critique which reasserted the importance of 'things' (Winner, 1999, p.28). This idea of a mutual relationship is taken up in various

[9] See Brown's discussion of the 'dual role of technology' for example in (Brown, 2014)

forms by different strands of theories, most notably Actor-Network Theory (ANT). In the mid-1980s, Latour, Callon and Law developed a view of *technoscience* where both human and non-human actors come together to form networks, which thus have emergent properties. ANT examines both human and non-human actors as 'actants' (heterogeneous actors) in a network with equal attention, resulting in a materialistic 'supersymmetric' perspective that allows us to see ICTs for instance no longer 'as something technical… or independent from its use… but [as] a combination (or multiple combinations) of… actors interacting in networks to produce particular outcomes' (Sismondo, 2004, p.87). Overall the idea that a piece of technology both shapes and is shaped by its societal environment, or what STS scholars refer to as the co-constitutive nature of technology and society, has been put forward in varying contexts examining the relationship between ICTs and society (Winner, 1996, 1999; Pinch and Bijker, 1984; MacKenzie and Wajcman, 1999; Halford et al., 2010; Earl and Kimport, 2011). In the remainder of this section I present the two ends of this spectrum and conclude by outlining the way forward for this thesis.

2.2.1 Technical shaping of society and technological affordances

> 'Tools and instruments are so intensely worldly objects that we can classify whole civilizations using them as criteria'. (Arendt, 1958, p.144)

Sismondo quotes Marx famously declaring 'the hand-mill gives you society with the feudal lord, the steam-mill, society with the industrial capitalist' (Sismondo, 2004, p.96). This way of thinking, talking and writing about the role of technology in social change processes has long been considered 'common sense' (Wyatt, 2008). As I described in the previous section, this is how peacetech has so far been presented in the literature. As I also mentioned earlier, critics of this broader perspective have labelled it 'technological determinism' (Halford et al., 2010; Wyatt, 2008; MacKenzie and Wajcman, 1999). In her reframing of the term and concept, Wyatt notes that:

> '[t]echnological determinism persists in the action taken and justifications given by many actors; it persists in analysts' use of it to make sense of the introduction of technology in a variety of social settings; it persists in manifold theoretical and abstract accounts of the relationship between the technical and the social; it persists in the responses of policy makers and politicians to challenges about the need for or appropriateness of new technologies; and it persists in the reactions we all experience when confronted with new machines and new ways of doing things' (Wyatt, 2008, p.167)

She also highlights the two key aspects of the concept. First its implication that 'technological developments take place outside of society', and second that 'technological change causes or determines social change' (Wyatt, 2008, p.168). This is important for two reasons. First different forms of technological determinism are prominent in peacebuilding and ICTs discourse, visible in the review presented in section 2.2 and discussed in more details in Chapter 4. And as Wyatt argues, '[o]nly by taking that type of technological determinism seriously will we be able to deepen our understanding of the dynamics of sociotechnical systems and the rhetorical devices of some decision makers' (Wyatt, 2008, p.176). Secondly technologies have some qualities that need to be uncovered and taken into account, particularly in political contexts. Beer (2009) quotes Thrift in pointing to a growing body of literature 'concerned with how software has come to intervene in nearly all aspects of everyday life and has begun to sink into its taken-for- granted background' (Thrift, 2005, p.153). According to Beer (2009) 'this work, by writers including Nigel Thrift, Katherine Hayles and Steve Graham, describes the ways in which software acts in often unseen and concealed ways to structure and sort people, places and things' (Beer, 2009, p.988). This according to Beer (2009) can give rise to different forms of power that need to be uncovered, questioned, but that are as yet poorly understood. Implicitly this suggests a fundamental reason for reasserting the importance of the materiality of technology in peacetech: the need to render technology and technological change accountable. The main problem with the social construction of technology, or ANT, is that these theories deny us the possibility of agency (intentionality) in the development and uses of technologies. By doing so though, it removes any scope to make those in charge of developing, as well as using technologies, accountable for any social or political outcomes, positive or negative (Dencik, 2013).

A useful concept to bridge the gap between the materiality of artefacts and their social construction is the concept of 'affordances'. I propose using this concept of 'affordances' of technology, meaning the possibilities offered for action, in order to conceptually grasp the nature of the mutual shaping of technology and society as it applies to the uses of ICTs for peacebuilding. The term 'affordance' was first introduced by perceptual psychologist Gibson when he noted that:

> 'the *affordances* of the environment are what it offers the animal, what it provides or furnishes, either for good or ill. The verb to afford is found in the dictionary, but the noun affordance is not. I have made it up' (Gibson, 1979, p.127)

Ian Hutchby then introduced the concept to STS debates in answer to the extreme constructivism of Grint and Woolgar's anti-essentialist position (Hutchby, 2001; Grint and Woolgar, 1997) and asserted:

> 'I will argue that affordances are functional and relational aspects which frame, while not determining, the possibilities for agentic action in relation to an object. In this way, technologies can be understood as artefacts which may be both shaped by and shaping of the practices humans use in interaction with, around and through them. This 'third way' between the (constructivist) emphasis on the shaping power of human agency and the (realist) emphasis on the constraining power of technical capacities opens the way for new analyses of how technological artefacts become important elements in the patterns of ordinary human conduct'. (Hutchby, 2001, p.444)

In their study of *Digitally Enabled Social Change* focused on activism in the 'Internet age', Earl and Kimport develop a 'leveraged affordances' approach (Earl and Kimport, 2011, p.10). They also take STS scholarship as their conceptual starting point, stating that their own preliminary observations on internet activism led them to recognise the following:

> 'an important science and technology studies (STS) observation that is at the core of this book: that technologies don't inevitably lead to specific social or political changes. Instead, people's *uses* of technologies [emphasis in the original] – sometimes mundane, and sometimes widely innovative – lead to (different kinds of) social and political change.' (Earl and Kimport, 2011, p.31)

They then use the concept of an *affordance* to specify the conditions upon which the materiality of technology influences these uses, which in turns lead to social or political changes (Earl and Kimport, 2011). They criticised Hutchby for ignoring 'important STS and sociology of technology questions about how technology came to being', or how it reached 'closure' (Earl and Kimport, 2011, p.36). Earl & Kimport overcome this conceptual hurdle by caveating their findings as not relating to the web and activism, but the web 'as they observed it' during their data collection (Earl and Kimport, 2011, p.37). As a corollary to their thinking, Earl & Kimport assert that 'it is not the latent affordances of a technology that really matter to social explanations; it is how people leverage technological affordances that counts' (Earl and Kimport, 2011, p.33). This perspective can be compared to the perspective of ANT, which I have already discounted above for this thesis. And while I agree with the central importance of the leveraging processes to any analysis of technology uses, I would argue (and show in the rest of this thesis) that *latent* affordances, as well as *designed* and *leveraged* affordances are crucially important

to uncover and can potentially have important consequences. My perspective is more in agreement with Hutchby's original formulation of the 'constraining, as well as enabling, materiality of artefacts' (Hutchby, 2001, p.441). Indeed the process of users leveraging technological affordances does not occur in a vacuum. Instead people's agencies are contested and contingent, unfolding within and through complex power structures and dynamics (Pugh, 2013; Mac Ginty, 2011; D. Chandler, 2013; David Chandler, 2013b; Campbell et al., 2011b). And as is highlighted in the emerging peacetech literature, technologies are often designed or introduced in peacebuilding contexts for particular purposes (Kahl and Puig Larrauri, 2013; Mancini and Reilly, 2013), and any conceptual framework needs to be able to capture both sides of the leveraging processes – the materiality of the technology which is simultaneously constraining and enabling and how its affordances are leveraged in peacebuilding contexts, iteratively, moving away from linear approaches. This allows us to uncover what Beer or Flanagin et al. have shown to be important norms and values embedded within technologies (Beer, 2009; Flanagin et al., 2010), to ensure we maintain the possibilities for their accountability in our explanations and findings, and to understand what structural and contextual elements facilitate or hamper the leveraging of these affordances. As such if we accept that ICTs both shape and are shaped by a societal context, then the analytical focus shifts from technologies as tools or their intended role within peacebuilding initiatives to examine the performative unfolding of their affordances and emergent properties in peacebuilding practices. In the next section I outline the second component of my theoretical framework: the adoption of a practice lens to conceptualise peacetech and peacebuilding practices.

2.3 Adopting a practice lens to peacebuilding and peacetech

> 'Practice approaches suggest that we need theories that take into account the heterogeneous nature of the world we live in, which includes an appreciation that objects and materials often bite back at us and resist our attempts to envelope them with our discourses' (Nicolini, 2012, p.8)

What is a practice lens or approach and what are its advantages? What does it mean to adopt a practice lens? Why does it make sense to conceptualise peacetech and peacebuilding as practices? How is it helpful?

According to Schatzki, a practice approach builds on the notion that 'phenomena such as knowledge, meaning, human activity, science, power, language, social institutions and human transformation occur within and are aspects of components of the field of

practices' (Schatzki, 2001, p.2). Although side-lined as a social theory for years, Nicolini (2012) traces the emergence of practice theory to radical readings of Aristotle, and credits its rediscovery to the writings of Marx, with his focus on legitimating real activity, Heidegger's reflection on the 'relatively unproblematic nature of human existence in the course of worldly activity' (Nicolini, 2012, p.34) and Wittgenstein's thoughts on intelligibility, meaning and language. More recently Giddens' and Bourdieu's 'praxeology' provide the basis for the contemporary 'practice turn' in social theory (Schatzki et al., 2001, p.7). For Nicolini (2012, p.3), while there is no single practice theory, the 'contribution of a practice approach is to uncover that behind all the apparently durable features of our world there is always the work and effort of someone'. He finds 'family resemblances' across different theories and as such argues that it makes sense to speak of a practice lens or approach.

So at the 'most basic level, practices are sets of doings and sayings' (Nicolini, 2012, p.164). The notion of practice implies something greater than a sum of activities, because it involves repetition in time and space across individuals – collective human action. It also includes discursive practices. Nicolini views practice theories as a 'corrective to extreme forms of textualism' that demand that discourse be considered together with other forms of social and material activity (Nicolini, 2012, p.6). The relationship between discursive and material practices has been notoriously underconceptualised in practice theory (Schatzki, 2017). According to Schatzki (2017, p. 129) authors differ in their understanding of the distinction between discursive and non-discursive action, with some like Shove viewing both as part of 'one basic sort', unlike Schatzki himself who views the distinction as more fundamental. In this thesis I follow Shove and Nicolini's view that discursive and material actions are facets of practices. This is an important point for this thesis, one which I expand on in greater detail in Chapter 4.

Different authors have emphasised the aspects that constitute practices. For Schatzki for example, practices are linked together by four mechanisms: practical understanding, rules, teleoaffective structures, and general understanding (Schatzki, 2005, p.471). Practical understanding refers to the knowledge that derives from being an active member of a practice; rules specify what to do; teleoaffective structure dictate how actions ought to be carried out; and general understanding refers to the 'reflexive understandings of the overall project in which people are involved' (Nicolini, 2012, p.167). This provides a sense for the idea that practices are shared across time and places, with common understandings, rules and teleoaffective structures enabling their repetitions and recreation. However, as Nicolini argues, this tends to place agency almost exclusively in human actors. Indeed he puts Schatzki's work at the opposite end of the

spectrum to Latour's and the ultra-materialistic perspectives of ANT. The approach of materiality developed in section 2.2 distances itself from Schatzki's 'agential humanist' view (Nicolini, 2012, p.169) and rather echoes Pickering's argument that 'agency is the result of the mutual dialectic of resistance and accommodation between the performativity of materials and human intentionality' (Nicolini, 2012, p.170; Pickering, 1993). Indeed as Pickering highlights, intentionality can only be attributed to human actors. As such this concept is missing from ANT perspectives (Pickering, 1993, p.565), as I have argued in section 2.2, and therefore fails to account for important parts of social practices. While agency can be found in both human and non-human (material) actors, intentionality remains with the former. The concept of leveraged affordances I developed in section 2.2 encompasses both the 'performativity of materials' and human intentionality. This is particularly important when considering peacebuilding and its strong normative drivers (Paffenholz, 2010; Campbell et al., 2011a). Shove et al. provide a conceptualisation of practice that integrates these various considerations. Their approach rests on two foundational ideas: that practices are made up of materials, competences and meanings; and that 'practices emerge, persist and disappear as links between their defining elements are made and broken' (Shove et al., 2012, p.21). In this view, materials include 'objects, infrastructures, tools, hardware' and therefore technologies (Shove et al., 2012, p.23). Competence includes know how and skills, as such integrating Schatzki's notion of rules as well as practical and general understandings. Finally meaning incorporates emotion and motivational knowledge, thus overlapping with Schatzki's notion of teleoaffective structures, including the aspect of intentionality. Does it make sense then to conceptualise peacetech as a practice, and what does it mean to do so?

Before answering that question, we must first consider peacebuilding itself as a practice. Indeed most authors trace the emergence of peacetech within peacebuilding (Kahl and Puig Larrauri, 2013; Tellidis and Kappler, 2015; Hattotuwa, 2004), and whereas empirical evidence of peacetech is emerging, there is ample literature on peacebuilding. Peacebuilding scholars have not explicitly conceptualised peacebuilding as a practice in the way it has been defined here, although the term practice is frequently used in the literature, understood more as a practical activity (Richmond and Mac Ginty, 2013). Such a conceptualisation here serves three purposes. First it provides some historical context for the emergence of peacetech. Indeed as Nicolini argues, 'practices are inherently contingent, materially mediated, and cannot be understood without reference to a specific place, time and concrete historical context' (Nicolini, 2012, p.214). Second, this contextualisation provides important considerations for peacetech that are currently implicit in the literature and have important implications for the rest of this thesis.

Whereas peacebuilding debates, as shown in the rest of this section, are characterised by debates over power dynamics, agency and legitimacy, the review discussed in section 2.1 above shows that the emerging peacetech literature tends to focus on technological potentials or achievements without problematizing the peacebuilding dimension of peacetech. Third and finally, conceptualising peacebuilding as a practice illustrates the theoretical advantages of adopting a practice lens for this work.

Academic work on peacebuilding is 'eclectic and relatively disjointed', to borrow from a characterisation of another such elusive concept, that of governance (Stoker, 1998, p.18). This work on peacebuilding emerged at the intersection of 'peace studies' and 'security studies' (Sabaratnam, 2011, p.16) and the term 'peacebuilding' itself has many aliases. In their review of twenty-four organisations engaged in peacebuilding activities, Barnett et al (2007, pp.37 – 42) note as many different conceptualisations and synonyms used to describe their work, such as post-conflict reconstruction, stabilisation, peace consolidation, conflict prevention, multi-dimensional peace missions, among others. As mentioned earlier the origins of the concept in its current form can be traced to the work of Johan Galtung in the 1970s on negative and positive peace, defined as the absence of war or violence and the elimination of the root causes of conflict, respectively (Galtung, 1975). The work of John Paul Lederach on conceptualising peace as a 'dynamic social construct' is also credited in the genealogy of contemporary understandings of peacebuilding, which intimated at the need for more than simply the absence of conflict for societal peace to be meaningful (Chetail, 2009, p.1; Brewer, 2010, p.11). The brief historical overview presented in Chapter 1 suggests that peacebuilding as a concept and on the ground gained momentum following the end of the Cold War when two trends coincided: the belief in the superiority of liberal democratic ideals and institutions and the end of the UN Security Council deadlock, thus opening the way for the UN to act in support of peace operations in the many conflicts previously caught up in the Great Power struggle. Jabri asserts that:

> 'The imperatives of peacebuilding are 'the reshaping and the redesign of societies and their institutions, thereby creating the conditions assumed to underpin what is referred to as 'sustainable peace'' (Jabri, 2013, p.14)

Sending (2011) further states that for peacebuilding, the 'object of analysis has not so much been the conditions for the emergence of peace, but assessing what external actors are doing and how to improve their effectiveness'. Traditionally then, peacebuilding practice is seen as interventionary, where interveners are the peacebuilding practitioners, generally external actors to the peacebuilding context intervened upon.

This literature then focuses on the different types of peacebuilding interventions such as capacity building (Turk, 2009), disarmament, demobilisation and rehabilitation (DDR) of former combatants (Muggah, 2009), statebuilding (Goldsmith, 2007; Newman, 2013; Barakat et al., 2012), transitional justice or the economic aspects of conflict transformation (Wennmann, 2009) that can be grouped into what some refer to as the 'pillars' of peacebuilding: security, development, democratisation and human rights (Ryan, 2013, p.29). Chetail and Jütersonke point out that more specific definitions of peacebuilding have remained elusive and questioned their desirability:

> 'Yet repeated attempts to get all multilateral, governmental and non-governmental actors to agree on a precise definition of peacebuilding have not borne fruit – and in some respects, conceptual ambiguity might well be the lesser of two evils, as it allows international decision-makers the room to manoeuvre their way through potentially tricky negotiations. For most purposes, a functional differentiation of the specific sectors that make up the building blocks of something called 'post-conflict peacebuilding' might well be sufficient – along the lines of security, socio-economic welfare, and justice and the rule of law.' (Chetail and Jütersonke, 2015, p.2)

So in this context of vagueness and debate, how do we recognise and demarcate peacebuilding practices? How are boundaries drawn? This challenge is not limited to peacebuilding, but is a rather well known issue in practice theory. Nicolini states that 'practice theory starts, in fact, with process, and takes the emergence and creation of (provisionally) identifiable unit (individuals, groups, organisations) as the thing to be explained' (Nicolini, 2012, p.180). This may sound less than satisfactory, but it is important to remember that the conceptualisation of practices includes an idea of reflexive, self-aware understanding of that practice by members and non-members alike, or what Schatzki refers to as practical and general understandings (Schatzki, 2005). Shove et al. contend that the easiest answer to the question of delimiting a practice is 'what practitioners think it is' (Shove et al., 2012, p.121). And there is definitely a concerted understanding that peacebuilding as a set of activities warrants interest and research, as Ryan underscores: 'the emergence of peacebuilding theory and practice has been one of the most interesting developments in peace and conflict research in the past generation' (Ryan, 2013, p.33). For Pugh there are two distinct paradigms in peacebuilding scholarship – a problem-solving one, concerned with improving interventions on the ground, and a critical one, concerned with showing that the interventionary model of peacebuilding does not or cannot lead to just peace (Pugh, 2013). And together with Nicolini's processual emphasis, this points to a notion of

intrinsic, recognised and recognisable levels of standardisation of the ways of doing peacebuilding. This is precisely what Mac Ginty and other critical scholars accuse what they refer to as liberal peacebuilding of being – standardised in a way that hampers the emancipatory potential of local populations to build a just and sustainable peace (Mac Ginty, 2011, 2015; Mac Ginty and Richmond, 2013). Indeed Mac Ginty refers to it as 'peacebuilding from IKEA, whereby the vision of peace is made off-site, shipped to a foreign location, and reconstructed according to a prearranged plan' (Mac Ginty, 2011, p.39). From a different perspective, Autesserre also finds a striking level of standardised practices, norms and habits in peacebuilding at the global level in her study of peacebuilding practitioners' everyday practices (Autesserre, 2014). She conceptualises 'Peaceland', the 'place' where international peacebuilding happens:

> 'International peacebuilders also inhabit a separate world with its own time, space, and economics – and, even more importantly, its own system of meaning. This metaphorical world, inhabited by the transnational community of interveners for whom peace is either the primary objective (such as peacekeepers) or part of a broader set of goals (such as certain diplomats or development workers), I name Peaceland.' (Autesserre, 2014, pp.5–6)

Indeed when she refers to her first experience as a peacebuilder in Kosovo for a large international NGO, she concludes:

> 'These newly acquired competencies helped me successfully approach my later missions in Afghanistan and the Democratic Republic of the Congo. Despite the staggering differences between each of these countries – in terms of geographies, cultures, people, languages, dynamics of violence, and conflict histories – the interveners who worked in them shared the same daily modes of operations. After learning the ropes in Kosovo, I never again felt out of place when I arrived to work in a new conflict zone, because the characteristics of the international approach, the identities of the participants, the relationships among them and with local populations, and the other everyday elements – were all familiar to me.' (Autesserre, 2014, p.2)

In her conceptualisation of Peaceland, Autesserre (2014, p. 3) is concerned with everyday 'practices, habits and narratives', in an effort to better account for successes and failures of peacebuilding. In this view peacebuilding is operationalised as projects and programmes, where projects can be defined as having the following elements: specific outcomes, set start and end dates and established budgets (Krause, 2014, p.25), and peacebuilding programmes are the sum of an organisation's projects. Here the elements

of peacebuilding practices could include organisational infrastructure such as headquarters and country offices, aid and donor funding, human resources, for example. The meanings could include projects and programmes' theories of change, defined as 'assumptions that link a programme's inputs and activities to the attainment of desired ends' (OECD-DAC, 2012, p.13); or the conflict analyses upon which these theories of change are based. Finally competences could include the thematic expertise of international peacebuilders or the local knowledge of indigenous populations (Autesserre, 2014, p.70). It is not the purpose of this section to provide a detailed conceptualisation of peacebuilding as a practice. As Nicolini emphasises, that is an empirical question (Nicolini, 2012, p.179). Rather here, the aim is to show that such a conceptualisation is possible.

Indeed it does not in fact represent a major departure from some existing work. For instance when Richmond and Paffenholz identify different schools of peacebuilding, these can be conceptualised as different practices. For example conflict management focuses on ending conflict by diplomatic means after identifying the relevant leaders of each conflict parties and bringing them to the negotiation tables. The main objective within this approach is to reach a negotiated peace settlement (Paffenholz, 2010, p.51). By contrast conflict resolution aims to solve 'the underlying causes of conflict and to rebuild destroyed relationships between parties' (Paffenholz, 2010, p.52). This approach focused on dialogue and on taking into account more marginalised voices, from top leadership to civil society and the grassroots, to include a wide range of actors. A complementary school then highlights the 'possible congruence between the conflict management and conflict resolution schools' (Paffenholz, 2010, p.53). The rationale of combining the two schools is that 'peacebuilding is needed both from the top and from below' (Paffenholz, 2010, p.53). One of the lasting examples of this approach is Diamond and McDonald's 'multi-track diplomacy', still used by practitioners today in their taxonomy of peacebuilding work (Diamond and McDonald, 1996). From a different viewpoint, conflict transformation recognises the existence of intractable conflicts and rather than resolving them, the focus is on transforming conflict dynamics into peaceful ones. Lederach is the most prominent proponent of the conflict transformation school, arguing for the creation of 'peacebuilding infrastructures' supporting the 'reconciliation potential within societies' (Lederach, 1997, pp.112–126). In contrast with the previous schools, third-party intervention should be limited to a supporting role of local actors. As Paffenholz asserts (2010, p. 54), this approach 'focuses on peace constituencies by identifying midlevel individuals and groups and empowering them to build peace and to support reconciliation', were 'empowerment of the middle level is assumed to influence peacebuilding at the macro and grassroots levels'. This subsequently evolved into a

'community-based, bottom-up peacebuilding approach, expanding Lederach's midlevel approach to the grassroots level' (Paffenholz, 2010, p.54). These different strands of practice can be characterised according to different sets of materials, meanings and competences. For example conflict transformation would include local peacebuilding partners as an important material element, whereas conflict management would focus on teams of mediators. The varying underlying assumptions outlined above for each type of practice would constitute meanings, and similarly each would rely on different competences. This shows peacebuilding as practice to be a relevant conceptualisation that allows for different schools of thought on the nature of peacebuilding activities. Furthermore, while I adopt Autesserre's definition of peacebuilding as a set of practices 'aimed at creating, strengthening, and solidifying peace' (Autesserre, 2014, p.21) for this thesis, a practice lens does not preclude definitional debates. Indeed differences, contradictions and debates are integral parts of practices, at times shifting a balance between standardisation and persistent diversity observed for any practice (Shove et al., 2012, p.37). What is important is that it is possible to conceptualise peacebuilding as a practice, and as such peacetech as a type of peacebuilding practice. What that entails forms part of the empirical component of this research.

There are strong conceptual benefits for adopting such a lens. One key insight that is relevant at this stage is the near unanimous agreement that traditional peacebuilding practice is based on external intervention, where practitioners are actors external to the context they intervene into. A first advantage of adopting a practice lens, as I mentioned earlier, is that it helps move away from a series of unhelpful binaries. The most important for peacebuilding is the gap between how people do peacebuilding and how people talk about it (or write academically about it) (Mac Ginty, 2013), and the problematic distinction between local and international. A practice lens provides instead a more useful conceptualisation of the actors, including practitioners, involved in peacebuilding. Indeed in light of the tensions between interveners and local populations, as well as top down and bottom up approaches, the type of peacebuilding actor enacting a specific practice matters for its meaning and implications.

> 'It has become axiomatic that matters of peace and war are no longer solely in the hands of official, policymakers, the military, and politicians but are also engaged by civil society, grassroots actors, and citizens' (Richmond, n.d., p.16)

> 'The local' has an elastic meaning, geographically and conceptually (as does 'the international' and 'the state'). Yet the notion of a locale, or identification with a particular geographical area, identity group, or theme is common across cultures. […] Even if de-territorialised, the term 'local' depends on some shared social

> capital among networks, spanning the local to the global in some cases' (Mac Ginty and Richmond, 2013, p.770)

Discussions on the 'local turn' emerged from two developments in peacebuilding literature and practice: the first was Lederach's conceptualisation of peacebuilding as processes of conflict transformation, which recognised local actors as having the 'most peacebuilding potential' (Lederach, 1997). The second refers to the critical peacebuilding scholarship described above, which advocated a central place for the local and the everyday in defining peace, and therefore peacebuilding (Pugh, 2013; Paris, 2011b; Richmond, 2009). These discussions have ended up in definitional crises over the meaning of 'the local', with some scholars arguing that current debates suffer from a 'weak conceptualisation of the international and the local' (Paffenholz, 2015, p.862). Paffenholz concludes that before these categorisations can become useful, scholars need to come up with 'additional analytical layers to render more complex the essentialist understanding of the local and the international dichotomy' (Paffenholz, 2015, p.868). A practice lens offers a definition of practitioners that can include references to local and international qualities, what types of organisations they belong to, and how closely related to governments they are without suffering from these essentialist pitfalls. This is echoed in what Kappler says when she argues that:

> '[the] very act of labelling actors as 'local' or 'international' brought with it its own tensions and problems, in that not only do actors de facto cross neat categories of local and international (in terms of where their loyalties and networks are located), but also the labelling of one's own and other's identities can change over time, depending on the social, political and economic context.' (Kappler, 2015, p.877)

She goes on to say that:

> 'local identity', just as much as international identity, can never be fully and comprehensively established. Instead, it evolves and develops contextually in the networked interplay between a jigsaw of actors who situate themselves in relation to, and differentiated from, other actors in their field of activity' (Kappler, 2015, p.884)

According to practice theory, 'practice and practitioners emerge together; we cannot grant ontological primacy to each of them' (Nicolini, 2012, p.178). Therefore a practice lense allows for a theorisation of international and local not as opposed binaries, but as Heathershaw prefers to see them, as being in a 'co-constitutive relationship' (Heathershaw, 2013, p.280).

Of course it would be caricatural to argue that the entire peacebuilding literature rests on neat categorisations of local, international and external interventions that do not ultimately prove useful. Mac Ginty argues that:

> 'the focus… on local agency and the power of local agents to hybridise politics and peace means that we should not conceive of overly neat silos through which resources are channelled and ideas transmitted in a prescribed way. The picture is messier. The silos are rarely neat sequences of discrete actors and, as will be discussed in subsequent chapters, the transmission chains sometimes allow for feedback, resistance, and the bottom-up conduction of ideas and practice… While international actors often wield significant power, a messier diagram (and therefore one unlikely to be accepted by the publisher!) would be required to accommodate the two-way direction of interaction.' (Mac Ginty, 2011, p.32)

However in spite of this acknowledgment, Heathershaw argues that even with his hybrid peace concept, Mac Ginty cannot quite escape the pitfalls of the 'bifurcation between ideal-types of local-indigenous and international-liberal' (Heathershaw, 2013: 277). Indeed for him it 'matters little to speak of the 'liberal peace', 'post-liberal peace' or 'hybrid peace' if one fails to theorise the relationship between the whole nature of the building and the specific outcome for peace' (Heathershaw, 2013: 282). Sending seeks to show that external actors are not necessarily more powerful than local actors, and that they certainly do not constitute an 'overwhelming authority'. Instead he argues for a shift in focus that models or renders endogenous the 'political infrastructure' through which external actors operate to try to build peace (Sending, 2011, p.61). A practice approach facilitates moving beyond this impasse by allowing agency and power to be located in various actors, as well as in the system, recognising that the system can be both 'powerfully constraining, and yet that the system can be made and unmade through human action and interaction' (Ortner, 1984, p.159).

> 'Agency therefore always rests, at least in the medium and long term, on recognition, representation, legitimacy, consent, and an ability to mobilise, all of which are differently configured, from the local to the global.' (Richmond, n.d., p.19)

This is highly relevant to broader debates in peacebuilding and provides context for the recent focus on the need for increased participation and empowerment in peacebuilding processes. These discussions also contribute to establishing what is meant by these concepts. Indeed the crisis of legitimacy within peacebuilding that began fairly soon after

the brief honeymoon period of the end of the Cold War with the failures in Bosnia, Rwanda and Somalia is essentially rooted in concluding that failures are due to local actors' inability to participate in peacebuilding when they carry greater legitimacy than external interveners (Lederach, 1996). And it is where local 'ownership' and 'participation' have been regarded as ways of enhancing the success and sustainability of peace and development initiatives (Mac Ginty, 2011, pp.3, 59). Paffenholz argues that:

> 'Lederach identifies mid-level individuals and groups and empowers them to build peace and support reconciliation. Empowerment of the middle level is assumed to influence peacebuilding at the macro and grassroots levels. Lederach's focus on the empowerment of the mid-level leadership has had considerable influence on the practice of civil society peacebuilding. An emancipated civil society becomes a change agent through social movements and public communication' (Paffenholz, 2011).

She goes on to argue that 'the first local turn in peacebuilding emphasised the necessity of empowering local people as the primary authors of peacebuilding instead of externally designed and driven peace interventions' (Paffenholz, 2015, p.859) Leonardsson and Rudd shows that participation and local ownership are taken for granted as 'good things' for peacebuilding when they state that:

> 'the claim is that carefully designed and well-governed decentralisation can help achieve stability and peace by increasing legitimacy, accountability, inclusion and participation, establishing stable sub-national arenas for citizen–state interaction and bargaining, but only where the sub-national level has sufficient means and autonomy to control resources' (Leonardsson and Rudd, 2015, p.828)

In that sense one side of peacebuilding's crisis of legitimacy rests on a lack of local empowerment. But this points to a wider issue across peacebuilding scholarship. For some observers, the principal problem in peacebuilding is not its brevity or superficiality, but quite the opposite: 'that peacebuilders exercised such expansive powers that they effectively squelched genuine political participation and locally driven reforms. David Chandler's analysis of the Bosnia mission offered a good example of this argument' (Paris, 2011b). Leonardsson and Rudd contend that:

> 'the critics of liberal peacebuilding operations argue that so far little has been achieved beyond rhetoric on local ownership and participation, and that peace implemented through international peacebuilding operations will necessarily fail because their very design rests on externalised legitimacy and norms' (Leonardsson and Rudd, 2015, p.833).

Furthermore most authors recognise that the 'vast majority of peacebuilding initiatives occur in the global south but are designed, directed and funded from the global north' (Mac Ginty, 2013, p.3). Critical international relations theorising – focused on the Western export of 'liberal peace' and the problematic nature of 'top-down' frameworks which ignore local societal influences – stresses the need for 'bottom-up' theorising: giving a much larger role to local agency and the spaces and mechanisms which need to be accessed in order to understand, empower and transform local actors (Chandler, 2014, p.20) One example is what happened to peacebuilding following the 9/11 attacks, and the shift towards statebuilding, meant to construct 'effective, legitimate institutions of governance (Paris and Sisk, 2009). This focused on an uneasy compromise between democracy, stability and sovereignty that for some 'tellingly jettisoned any reference to 'peace' or 'reconciliation' (Sabaratnam, 2011). The critical scholarship has taken exception with the 'modernisation' project of what they refer to as 'liberal peacebuilding' where peace is defined according to Western democratic standards (Mac Ginty, 2011, p.26). And although 'international policy-makers have developed historically low expectations about what can be achieved through external intervention and assistance' (Chandler, 2011, p.181), international statebuilding policy assumes that the 'source of transformative ideational change' are societal practices and interactions (David Chandler, 2013a, p.278). Furthermore arguments such as Roland Paris' 'institutionalization before liberalization' doctrine (Paris, 2004) for example, can almost be seen as a sequencing answer in that 'the state be secure before liberties are extended to the populace' (Mac Ginty, 2011, p.138). The focus on institutional solutions (at both the formal and informal levels) to the problems of conflict and transition is indicative of the narrowing down of aspirations from transforming society to merely regulating or managing it (Chandler, 2011, p.182), which for critical scholars is a far cry from positive peace. Richmond talks of an 'interventionary progression from the liberal values of the 1992 document Agenda for Peace to the far more interventionist 'Responsibility to Protect' Doctrine, which also happened to coincide with the intervention/invasion/statebuilding agendas of the 2000s' (Richmond, n.d., p.14). Indeed as Campbell et al. note, peacebuilding scholarship overall have maintained the notion of intervention as underpinning peacebuilding practice:

> 'Both advocates and opponents of 'liberal peace' seek to support and facilitate international intervention in the cause of peace- or statebuilding. Both argue that interventionist policies are necessary, regardless of the fine-grained distinctions in how such interventions should be conducted.' (Campbell et al., 2011b, p.4)

And for some, intervention automatically lacks legitimacy. For Chandler 'the ontological assumptions of non-linear framings tend to problematize the emancipatory objectives behind peace itself rather than the problematic imposition of external projects per se' (Chandler 2013b, p.32). 'External' in the case of peacebuilding has been equated with 'international'. Indeed Jabri notes that the 'question of peacebuilding agency might be summarised in the form of three perspectives: the liberal peace, recognising the primacy of the international; the critique that favours the local as more authentic or a hybrid form of local/international; and the capacity building approach – seen in the resilience framework – agency framed as an exchange that effects agency on the ground and in the local' (Jabri, 2013, p.5). This highlight the tension between a perceived need to support – which led to the Responsibility to Protect Doctrine – and the alleged delegitimising effect of intervention (Barakat et al., 2012; Krause and Jutersonke, 2005; Richmond et al., 2015; Kappler, 2013; Menocal, 2010; Paris, 2010). This tension has been increasingly skewed in favour of the 'local'. Whereas an Agenda for Peace did not once mention the term 'local' (Mac Ginty and Richmond, 2013), Leonardson and Rudd argue that:

> 'the unsatisfactory results of peacebuilding operations became clear and the UN's new approach was announced, peacebuilding operations shifted focus to building legitimate, efficient governmental institutions that made statebuilding an intrinsic part of peacebuilding operations. Concepts such as local governance, local capacity and local ownership became central in the now emerging peacebuilding discourse' (Leonardsson and Rudd, 2015, p.827).

In a more empirically grounded comment on the role of local actors, which he terms 'subaltern agency', Richmond asserts that 'subaltern agency has influenced the shape of statebuilding as in Kosovo, has inserted identity and custom as in Timor Leste and many sub-Saharan cases, has lobbied for human rights, transparency, and democracy through civil society in Cambodia, and as in most cases albeit with donor support' (Richmond, n.d., p.15). At first glance this might tend to support Paris' assertion that 'there is no real alternative to liberal peacebuilding model currently' (Paris, 2011a, p.159). However from a practice lens, patterns of behaviours are not ascribed to specific actors in peacebuilding contexts and focus instead on various practices that construct practitioners, with the understanding that who they are is centrally important for peacebuilding analyses. Thus I am able to move away from the impasse of these debates and their range of unhelpful dichotomies. Jabri adopts a similar argument when she attempts to move beyond the linear perspective of 'international' *acting on* 'local' by reframing intervention as 'practices that view their target as populations to be governed and practices that recognise these populations and their conflicts as distinctly political' (Jabri, 2013, p.6).

Focusing on practices as such allows us to consider that different actors can engage in these practices in different ways at different times. This also opens the possibility to consider peacebuilding as non-interventionary practices. Ryan pointed out already that the bulk of peacebuilding literature focuses on 'the role of external actors and some highly invasive interventions', but he goes on to show that 'important non-intervention peacebuilding tend to be ignored: in Northern Ireland, the Baltic states, Macedonia, South Africa, where peace processes are led by local actors. He states in conclusion that 'by underestimating these examples we could be trying to learn positive lessons about peacebuilding from the wrong cases' (Ryan, 2013, pp.33–34).

Besides this horizontally linear view of intervention where peacebuilding practitioners intervene with some results, there seems to be similar conceptual issues with the vertical top down/bottom up dichotomy. Indeed the critical scholarship seems at pains to argue and where they have in turns been critiqued – they fail to adopt a symmetric view of their political argument in that they see top down approaches as political and oppressive, and bottom up approaches as emancipatory. Instead Chandler proposes 'non-linear approaches in response to linear thinking that assumes the successful top-down or linear imposition of the end goals of Western peace and democracy promotion (David Chandler, 2013b, p.20). He asserts that 'Lederach was the first policy-academic to problematize 'top-down' or linear approaches to peace and democracy' (David Chandler, 2013b, p.22). Equating linear with top-down and non-linear with bottom up is simplistic however. A focus on practices more helpfully reframes this dichotomy: peacebuilding encompasses practices that can be oppressive or emancipatory, which all peacebuilding actors are capable of enacting. This takes us behind the current debate and opens up the possibility for the simultaneous existence of the various sites of legitimacy identified for peacebuilding. This reconceptualization of peacebuilding as a set of practices unfolding within specific contexts that are more or less enabling and/or constraining by a series of different actors allows us to capture more effectively the reality of change beyond the desirability of their normative underpinnings. A focus on practice also allows us to move beyond the good versus evil tone of the liberal peace debates. Peacebuilding has traditionally been conceptualised as intervention, although questions of effectiveness and legitimacy have resulted in different approaches. I argue that a practice approach includes intervention but allows us to escape the local-international binary divide. I further contend that the focus on 'local ownership' and empowerment in the literature paves the way to consider 'non-interventionary' practices as peacebuilding, and thus moves beyond traditional understandings to include a broader range of actors and practices, which is where the promises of peacetech tend to be located for some of the scholars mentioned above (Kahl and Puig Larrauri, 2013; Tellidis and Kappler, 2015).

A final advantage is more methodological and concerns a focus on the linkages between practices and shedding light on how they emerge, come together, are maintained or end, which is not currently addressed in peacebuilding literature in great depth and seems particularly relevant at this stage of the evolution of peacetech. I address this in more details in the following section.

2.4 Reconceptualising peacetech as a sociotechnical practice

In this Chapter I have shown that the emerging peacetech literature focuses on the empowerment and participatory potential of ICTs in peacebuilding contexts and doing so reveals a tendency for a simplistic and deterministic view of the transformative potential of ICTs in society. Instead I have proposed a performative view of the materiality of technologies with insights from STS and the concept of affordances, defined as the possibilities offered for action. Both conceptually and methodologically, this framing allows for a more nuanced analysis, shifting the focus to the performative unfolding of the affordances of ICTs – what I refer to as leveraging processes - and their emergent properties for peacebuilding. As Earl and Kimport state:

> '[w]ith complex technologies, what a technology affords may be one of the hardest questions to definitively answer, since among other issues, not everyone notices all affordances, not everyone knows how to leverage all affordances, not everyone chooses to leverage all affordances, and not everyone succeeds in well leveraging all affordances of complex technologies' (Earl and Kimport, 2011, p.33).

In a conceptual departure from existing views of peacebuilding I have suggested the adoption of a practice lens for peacetech and peacebuilding. This allows to take into account both affordances of ICTs and how they are leveraged in practice. As such it reframes the questions I ask in this research from evaluating the impacts of ICTs on peacebuilding, to focusing primarily on how they are used in practice, thus asking the following research questions:

(i) What are peacetech practices and what claims are currently made about their potentials for participation and empowerment?

(ii) How are ICTs adopted and their affordances leveraged in peacetech practices and with what consequences?

(iii) How can peacetech practices support or hinder the empowering and participatory potential ICTs could afford peacebuilders?

I have defined practices, following Shove et al., as made up of three elements: materials, including technologies, competences, including skills, practical and general understandings, and meanings, including motivational assumptions and symbolic aspects of participating in the practice. Conceptualising peacebuilding in this way allows us to transcend a series of unhelpful dichotomies that have resulted in a large gap between how people actually do peacebuilding and how peacebuilding scholarship conceptualises it. It pushes debates away from the simplistic view of a good local actor and a bad international one. I thus conceptualise peacetech as a peacebuilding practice made up of materials, competences and meanings. What those are is a question for my empirical investigation.

By conceptualising practitioners as they take part in practices, we can understand identities in a more fluid manner, within their unfolding dynamic contexts. As such I propose using the following, non-essentialist categories of actors in the rest of this thesis:

Peacebuilding actor	Definition
Multilateral governmental organisations	Organisations such as the United Nations, United Nations Development Programme, UNICEF, the EU, OECD, OSCE, etc. which are formally part of an institutionalised international peacebuilding architecture.
Governmental organisations or donors	These are donor organisations, more specifically development or aid agencies of various governments such as the United Kingdom's Department for International Development (DfID), the United Stated Agency for International Development (USAID), or the Danish aid agency DANIDA. They design programmes and projects based on country or policy objectives and fund international or local NGOs working towards toward their implementation in various contexts around the world. This funding is either direct, joint with other donors or through multilateral governmental organisation such as the UN or the EU.
International NGOs	International non-governmental organisations such as Interpeace, Search for Common Ground, United States

	Institute of Peace, swisspeace. They may or may not have regional or local offices in the various conflict or post-conflict contexts in which they operate. And they implement projects or programmes directly, or in cooperation with or through local partners.
The State or Government	As I argue elsewhere, 'as a peacebuilding actor, the 'state' is a problematic concept. Peacebuilding contexts almost by definition entail contested notions of a legitimate state entity. This section refers to the main authoritative body in the peacebuilding context under consideration, from transitional governments established following the signing of a peace agreement to oppressive regimes responsible for violence and conflict, because peacebuilding activities are undertaken before, during and after conflict to stabilise but also address the root causes of conflict (Lederach, 1997)' (Gaskell et al., n.d., p.10).
Local NGOs	Local non-governmental organisations are founded and based in the peacebuilding context under consideration. Satellite offices of international NGOs in local communities are not regarded as local NGOs for the purpose of this thesis.
Grassroots	Grassroots are organised but less institutionalised than local NGOs. They might not have offices, or be registered as an organisation, however they can mobilise people or local populations.
People or local populations	People or local populations refer to what 'the everyday', those 'doing their best to maintain a viable everyday existence in the face of governmentalism (global government, for example, in the name of liberal peace) and structural power (where power is exercised regardless of its implications for order or peace)' (Mac Ginty and Richmond, 2013, p.764).

Table 1 Peacebuilding actors

> ‘By paying attention to the trajectories of elements, and to the making and breaking of links between them, it is, we suggest, possible to describe and analyse change and stability without prioritising either agency or practice’ (Shove et al., 2012, p.22)

Empirically, this leaves me to explore what types of affordances – leveraged, designed or latent – ICTs offer peacetech actors in practice. Or how peacetech practices leverage ICTs’ affordances. A first section in Chapters 4 and 5 thus focuses on peacetech through what Shove et al. refer to as practices-as-entities (Shove et al., 2012, p.8), that is the elements they are made up of – what materials, competences and meanings make up peacetech. In line with a sociotechnical approach, peacetech’s materials emphasise the technological affordances of ICTs and how they are leveraged rather than which technologies are used. Then as Shove et al. argue, there is a dynamic quality to social practices that I capture in my second empirical section in Chapters 6 and 7 focusing on peacetech as ‘practice-as-performance’, through the case study of the development and piloting of a participatory analysis platform in Burundi. This has a range of methodological implications, which I describe in more details in the following Chapter.

Chapter 3 Methodology

> ‘For an explanation to be useful, a great deal of human dignity is left on the cutting room floor.’ (Enloe, 2004, p.22)

> ‘The aim of participatory action research is to change practices, social structures, and social media which maintain irrationality, injustice, and unsatisfying forms of existence.’ Robin McTaggart in (Reason and Bradbury, 2000, p.1)

This thesis aims to critically unpack the emergence of peacetech as a field of practice, and leave as little as possible ‘on the cutting room floor’ (Enloe, 2004, p.22). I do so from a specific positionality and with the objective of influencing both policy and practice.

Whereas the impetus for this study came about when I was an outsider to the peacetech field, over the past four years I have become a part of its development. My role in the field has taken place primarily through the joint organisation of the Build Peace Conference, the first conference on the field on ICTs for peacebuilding; as such a curator of the Build Peace community of practice; and through thought leadership and implementation work as a co-founder and director of Build Up. Build Up is an international social enterprise ‘that amplifies citizen participation in peace through technology, arts and research’. This positionality in the emergent field of peacetech are central elements to my methodology, which is designed to explore the transformative potentials of ICTs in peacebuilding.

In the remainder of this Chapter I outline the methodological choices made in light of both operational and ethical challenges, as well as the epistemological and ontological positions I described in Chapter 2. Indeed in contrast with deterministic views of technology, I adopt a sociotechnical, co-constitutive perspective. This means that my enquiry moves away from a focus on cause and effect of technology on peacebuilding or peace. Rather it seeks to observe, contextualise and understand practices, intentions and outcomes, with an emphasis on the fact that the relationship between these is not linear (David Chandler, 2013b). While my perspective draws on a critical reading of the emergent field of ICTs for peacebuilding, I maintain a commitment to practical and policy relevance. I present these commitments in more detail below, which form the basis for my participatory action research (PAR) approach. I explain these choices and commitment in relation to the values and norms that underpin my research, but also in light of the emerging nature of the field of ICTs for peacebuilding, to show that PAR represents a powerful way to undertake a critical evaluation of the emergence of the field and chart

possible pathways for future research. This thesis represents the first empirically grounded attempt to construct the field of peacetech and evaluate its emergence. It draws on data collection from a wide range of sources and via mixed methods in order to construct as accurate a representation of the field. Finally I outline some challenges and overarching ethical tensions and how I have addressed them in this project.

3.1 Research approach and challenges

The basic structure of this research follows a traditional doctoral research process, beginning with some broad lines of enquiry around perceived knowledge gaps, a set of methods to generate empirical data, and some ways to analyse them to answer my research questions. The overall aim of this thesis is to explore the transformative potentials of ICTs for peacebuilding. In Chapter 2 I suggested using the concept of affordances of ICTs – the possibilities offered for action, and the adoption a practice lens to contextualise technological affordances in the practices of their actual uses in the emergent field of peacetech. In practice this poses the following questions:

(i) What are peacetech practices and what claims are currently made about their potentials for participation and empowerment?
(ii) How are ICTs adopted and their affordances leveraged in peacetech practices and with what consequences?
(iii) How can peacetech practices support or hinder the empowering and participatory potential ICTs could afford peacebuilders?

To answer these questions I adopt a methodology of pragmatic eclectism. Indeed according to Nicolini (2012, p.14) a practice lens 'requires a commitment to an observational orientation and the adoptions of methods that allow an appreciation of practice as it happens'. Reminiscent of ANT's methodological prescription to 'follow the actors', in this thesis I rather follow the:

> 'injunction (contra traditional approaches) to start the investigation into social phenomena not via roles and individuals and their actions but via the material and discursive practices that allow them to occupy such subjective positions' (Nicolini, 2012, p.178)

Translated to Shove et al.'s conceptualisation of practice as made up of three elements – materials, competence and meaning outlined in section 2.3, the methodological implication is to 'follow the elements of practice and to track changing configurations over time' (Shove et al., 2012, p.22). In the case of peacetech practice, difficulties arises however as the field is in the process of emerging and both conceptually and empirically under-researched. As Firchow et al. argue, the field is still in a state of liminality (Firchow et al., 2017, p.5). Evidence of systematic configuration changes over time is therefore currently difficult to find or generate. Instead and in order to both describe and explain emergent peacetech practice, I take two broad perspectives: practice-as-entities, or peacetech as it is constituted of its materials, competence and meanings; and practice-as-performance, involving the 'active integration of the elements' (Shove et al., 2012, pp.119–120). According to Nicolini, 'practices only exist to the extent that they are enacted and re-enacted' (Nicolini, 2012, p.221). This implies the existence of some kind of standardised sets of activities across time and space. This is why, as I describe in greater detail later, I focus on global discursive and material practices of the Build Peace community of practice over a period of three years. Once the elements of peacetech practice are uncovered across space and time to show a degree of enactment and re-enactment, I focus on the performativity of peacetech as a practice through the analysis of one particular case study of practice in action. Before outlining the design of this research and the methods used to answer its research question, I highlight some challenges and make explicit some of my motives, commitments and positionality in this work, all of which have influenced the research design and how data was collected and analysed.

3.1.1 A commitment to Participatory Action Research

Research can have different purposes – to describe, explain or in some cases predict – each equally important and necessary. Yet the purpose of research is also a choice, with epistemological positions leading to different perspectives on this matter – questioning whether and how things can be described, explained or predicted. Without dismissing the contributions of other types of research, I have always approached mine as a means to better understand the world I live in, in order to make it better, which is why I locate my stance within a participatory action research (PAR) perspective.

There are many forms of PAR. Reason & Bradbury (2000, p.1) define it as 'a participatory, democratic process concerned with developing practical knowing in pursuit of worthwhile human purposes, grounded in a participatory worldview… [and bringing] together action and reflection, theory and practice, in participation with others in the pursuit of practical

issues of concern to people, and more generally the flourishing of individual persons and communities'. Most authors trace its conceptual development from the combined appreciation of the value of postmodern critique evident in the so called 'language turn' in the social sciences, and a view that 'the emphasis that deconstructive and poststructuralist perspectives place on the metaphor of 'text' is limiting' (Reason and Bradbury, 2000, p.6). As such PAR scholars integrate aspects of the modern and postmodern paradigms to their approach, which requires us to be 'both situated and reflexive, to be explicit about the perspective from which knowledge is created' (Reason and Bradbury, 2000, p.7), with the overall objective to 'obtain knowledge useful for what we judge to be worthy causes (Fals Borda, 2000, p.28). Most agree that this constitutes an alternative paradigm altogether that essentially rejects the accepted divide between academics and practitioners, theory and practice, and argues for a reconsideration of their interplay (Reason and Bradbury, 2000; Fals Borda, 2000; McNiff and Whitehead, 2011; Kindon et al., 2007b). It rejects that academic knowledge is necessarily superior to 'ordinary people's knowledge' (Fals Borda, 2000, p.28), adopting instead an 'extended epistemology', where 'diverse forms of knowing' are encountered and considered (Reason and Bradbury, 2000, p.9). As such PAR represents a 'major epistemological challenge to mainstream research traditions in the social sciences' (Kindon et al., 2007a, p.9), mainly because it acknowledges the possibilities for the creation of knowledge in various institutions no longer limited to academia (McNiff and Whitehead, 2011, p.31).

According to Kindon et al. (2007, p.2) PAR 'emphasises dialogic engagement with co-researchers, and the development and implementation of context appropriate strategies oriented towards empowerment and transformation at a variety of scales'. Different PAR traditions give more or less emphasis to its 'participatory' or 'action' aspects. There are two main defining elements or objectives of PAR that are relevant to my research:

1. Relevance and impact**:** participation is aimed at making the research and its finding relevant to peacebuilding practice;
2. Inclusion and democratisation**:** participation is aimed at challenging existing power structures through the research process.

First the idea of 'improving' a social context implies adherence to a set of values. Second allowing for participation and inclusion beyond academia challenges the position of the researcher as outsider to one of insider. In this sense knowledge is collaborative and plural, both epistemologically and methodologically (McNiff and Whitehead, 2011; Kindon et al., 2007b; Reason and Bradbury, 2000).

There are many PAR elements to my research, as well as elements that are not, due mainly to the requirement of this post-graduate degree award for an original, individual

contribution. But even so, I see PAR as a commitment to relevance and impact, a way to bridge the theory and practice divide and recognition that practitioner and local forms of knowledge are as important as academic ones. As such PAR elements of this research will extend beyond the writing of this thesis, in sharing results and discussing methodology, analyses, and findings with the broader peacetech community.

3.1.2 Working through an emerging field

Peacetech as I have shown on a number of occasions so far is in a state of 'liminality' (Firchow et al., 2017, p.1), still negotiating its boundaries and definitions. Here I want to discuss more specifically what it means to be working in an emerging field, in terms of the evidence we have and need to generate. While I have explained a personal commitment to Participatory Action Research, there are some practical imperatives that make this particularly useful in this case. Indeed there is little academic, peer-reviewed literature available to present a holistic perspective on the field or its main assumptions and debate. Therefore evidence needs to be considered from other sources, but also generated for this purpose.

I consider practitioners as an important and useful source of knowledge (Reason and Bradbury, 2000; Fals Borda, 2000; Gustavsen, 2000). I therefore take theirs and other researchers' emerging discourse as both the starting point of this enquiry and as subsequent evidence in the research to describe discursive and material peacetech practices. I also place some of this work in their hands, by opening it up to discussion within the Build Peace conferences, and through my Advisory Panel. Indeed the literature review shows several important gaps: first peacebuilding scholarship has been slow to turn its attention to the uses of technologies, and ICTs more specifically (Hoffmann, 2014; Welch et al., 2014); second the emerging view of peacetech is conceptually thin with regards to its main components – technology and peacebuilding – as well as the main themes of participation and empowerment.

Indeed the framing is grounded in an extensive review of the literatures on both peacebuilding and the use of technology for social change. And I have used it as a guide to the type of data and sources used for this study. For example I used the concept of affordances presented above and the need to ground technological uses in peacebuilding practice to create the structure of the Build Peace Database project detail form.[10] This, I

[10] For more information see the form at http://www.buildpeacedatabase.org/enter-a-project/

show in my subsequent analysis, enables me to generate evidence that provides richer analyses than current enquiries.

Zalewski (1997) remarked already that while debates abounded on theories of international relations, there was often little clarity about its role for the field. She identified three views of theory: theory as a tool, 'a framework for understanding the world, […] that could be 'fine-tuned'' (Zalewski, 1997, p.341). She noted that this view rested on assuming the separation of 'theory' and 'theorists', as well as 'theory' and 'real world'. A second perspective, she goes on, sees theory as critique, where it is 'assumed to be actively interrelated with the 'real world', and, as a tool, is wielded with a different purpose', stressing not only a descriptive capability, but also an explanatory one. The final view of theory she presents covers those who see theory not as a noun but as a verb, implying that 'what one does is 'theorise' rather than 'use theory'' (Zalewski, 1997, pp.345–346). Just like PAR scholars and their fluid epistemologies, I do not view these three strands a mutually exclusive, and it is with that in mind that I proposed the framework outlined in Chapter 2. As such then, I use my conceptual framing as grounding, translation and evidence generation mechanisms, which combines elements of both interpretive action research (where an external researcher reports on what others are doing) and living theory action research (where practitioners offer their own explanations for what they are doing) (McNiff and Whitehead, 2011, p.11).

3.1.3 Researcher positionality

The purpose of this section is to be explicit about my positionality, which is important in light of the belief that 'all knowledge is produced in specific circumstances and that those circumstances shape it in some way' (Rose, 1997, p.305). This is what feminist writers refer to as 'situated knowledge' (Haraway, 1991; Suchman, 1987). Situated knowledge emerged as a 'means of avoiding the false neutrality and universality of so much academic knowledge' (Rose, 1997, p.306) . It was as I mentioned particularly embraced by feminist but also post-colonial scholars who aimed to uncover the patterns of injustice and oppression in the way knowledge was generated. As such it is not only relevant, but particularly important in the context of peacetech and my thesis, because:

> 'when Western feminists enter developing settings, they cannot escape the power relations that exist between those societies or between themselves as academics and their research subjects, even when they wish to do so. Western researchers are in a position of power by virtue of their ability to name categories, control information about the research agenda, define interventions and come and go as research scientists' (Staeheli and Lawson, 2010, p.332)

There are debates though as to what being explicit about one's positionality means and what it can achieve. Mattingly and Falconer-Al-Hindi argue that to situate ourselves, we must 'make one's position vis a vis research known rather than invisible, and to limit one's conclusions rather than making grand claims about their universal applicability' (Mattingly and Falconer-Al-Hindi, 1995, pp.428–429). However Rose argues that this can only be incomplete, because to assume to be able to know the landscapes of power external to the researcher is 'so presumptuous about the reflective, analytical power of the researcher, that I want to say… we should not imagine we can answer them' (Rose, 1997, p.311). Rather for her, this explicit reflexivity leads to 'non-overgeneralising knowledges that learn from other kinds of knowledges' (Rose, 1997, p.315). So my objective by making my positionality more explicit is for the reader to situate my analysis and conclusions, as well as the way I related to my participants during the research phase of my project and beyond. My preferred research approach, as mentioned above, is PAR, which I believe contributes to the generation of situated but relevant knowledge, although in itself does not erase any of the power imbalances that arise from my privileged position as a white, Western academic. But I am committed to highlighting the existence of voices beyond my own and tracing the provenance of my arguments wherever I can. There is however an imperative for the completion of this thesis and an award of Doctor of Philosophy that this should be my own work, and so it is. By explicitly situating my positionality and the parameters of my PAR approach, I ensure that while I alone am responsible for the analysis and conclusions presented in this thesis, those adhere to my overall commitment to not excluding or erasing the voices who ultimately matter the most in my research process and for peacetech more broadly.

In terms of my relationship with peacetech, my role in the field has evolved over the past four years, but is relevant mainly in my capacity as co-founder and Director of Build Up, and organiser of the Build Peace conference. As such I am a curator of the Build Peace community of practice, as well as a thought leader in peacetech through the work of Build Up in project design and implementation, training and a fellowship programme. To qualify these roles in a bit more detail it is helpful to explain how this all came about. After volunteering my services to help organise the first Build Peace conference in September 2013, I became a core member of the team, alongside Helena Puig Larrauri, Michaela Ledesma and Rodrigo Davies. Helena is widely mentioned in this thesis as she has been a peacebuilding practitioner for over 14 years, most of which has focused on the intersection of technology, peacebuilding and civic engagement. Similarly Michaela Ledesma also has high profile in technology and peacebuilding. Initially my role was limited to curating conference content for post-conference dissemination and engagement. But soon after agreeing to take part, it turned into organising the three

conference panels. In the latter capacity, I co-authored a white paper on 'Technology and Peacebuilding Learning and Evaluation' (Campbell et al., 2014). For the first Build Peace conference, I was not involved in the discussions regarding the overall framing of the conference, the kinds of sessions or speakers that were to be invited. My role remained mostly logistical.

This changed for the second instalment of the conference, in 2015 in Cyprus. Following several conversations with the other core members of the team, a review of the presentations and papers submitted to Build Peace 2014, I wrote the framing blog post for Build Peace 2015[11], incorporating the team's perspective with my own review of the state of the field. This post identified the theme and sub-themes of the conference, according to which most of the content was organised. My role in Build Peace 2015 was much more extensive from then on, including writing blog posts on behaviour change and empowerment to frame the panel discussions ahead of the conference.[12]

For Build Peace 2016, I again helped shape the framing and concept of the conference, which focused on the role of technology in conflict transformation processes. In 2014, the aim of the conference was to explore the potential of ICTs for peacebuilding with the conference tag line 'Peace through Technology'. In 2015 the focus shifted to the actors and the way ICT uses could affect practices and behaviours, with the tag line 'Peace through Technology: By Whom, For Whom?'. In 2016, the focus turned to political and socio-cultural transformation processes, with an emphasis on ethical consideration around the uses of ICTs in conflict. These broad themes all feature in this study and represent the influences of both developments in the field, and conceptual developments of this thesis intertwined in conversations regarding structures and content relevant to the conference and the wider Build Peace community.

Where examples of these processes become relevant to the analysis in this research, I make them explicit. And as it is important to be explicit about the processes that have shaped the conversations I use in this thesis, it is also important to recognise that my influence on them is limited. Firstly peacetech actors are not limited to Build Peace participants, not all those who attended agreed with the views that were presented. Nevertheless the debates that took place at the conferences are representative of the emerging field. Secondly some of my proposed inputs did not make the final cut. For example after I co-facilitated three working sessions at Build Peace 2014 that counted overall around 50 different attendees, a message that came through for me was the need

[11] See http://howtobuildpeace.org/blog/jenwelch1/ for more details.
[12] See http://howtobuildpeace.org/blog/jenwelch3/ for more details.

for stronger collaboration between academics and practitioners, via agreed processes and a common language. When I suggested a working session on this topic, my colleagues in the Build Peace team did not feel it would be interesting enough or well received. At Build Peace 2015 there seemed to be some calls for 'things not to be too academic' and so the working session on linking research and practice was dropped. This is but a sketch of the interrelations between my role as organiser of the Build Peace conference and my use of evidence from it in support of the arguments developed in this thesis. Where possible I reflect on these influences throughout my subsequent analysis.

Where the tension becomes more acute with my dual role as a researcher and practitioner is in my work with the Build Peace Fellowship as lead mentor and support for Jean Marie Ndihokubwayo. Jean Marie is an audio-visual researcher with CENAP in Burundi, whose work I observed for the in-depth case study discussed in Chapters 6 and 7 of this thesis. The Build Peace Fellowship was designed to build local innovative and technological capacity through training, mentoring and grant support to pilot implementation. I started working with Jean Marie in May 2016, and co-designed and co-delivered a week long face to face training on peacetech in July 2016. While I describe in more details the measures I took to mitigate the ethical risks that researching a process I was personally involved in implementing below, it is important to note that this is a rather standard situation when doing PAR. Wherever relevant, I will reflect on these issues in the analysis of the data, even discussing them during the interviews.

It is undeniable then that my role in the peacetech field has given me a much greater level of access to people and data than would have been possible otherwise, and as such has had a positive effect on my research. But there is a flip side to these considerations that is equally relevant for this Chapter. Indeed many scholars have highlighted the tensions with the academic-practitioners model, where considerations fall short of being too overtly critical of an existing system, set of actors or practices that provide financial subsistence for those undertaking the research or evaluations. This is particularly relevant for my thesis in two ways. First writing critically about the emerging peacetech field might not be well received by some and negatively affect my subsequent work with Build Peace. Second, the need to fund subsequent Build Peace Fellowships might also affect my analysis of the CENAP case study. I reflect on these elements in the concluding remarks of this thesis.

3.1.4 **Build Peace as a community of practice**

I focus my empirical data collection on Build Peace as a community of practice in line with the idea that 'practice is reproduced in time through a process of active engagement and

participation sustained by a specific community' (Nicolini, 2012, p.78). Here the term community refers to a 'learning mechanism' rather than some form of identity or culture sharing entity (Nicolini, 2012, pp.79–88). The Build Peace community has evolved around the annual Build Peace conferences on the role of technology for peacebuilding.[13] Each year since 2014 between 200 and 300 peacebuilders, both local and international, academics, technologists and policy makers meet at different locations to discuss issues of technology, innovation and peacebuilding. It has an online dimension with 2,018 and 3,033 Facebook and Twitter followers respectively.[14] However it is important to note that there are some reservations around the term 'community of practice'. As Nicolini contends, the terms merits using, albeit:

> 'in a strongly qualified way, emphasizing that the 'community' in the expression is, if anything, a form of commonality performed by the practice and not vice versa' (Nicolini, 2012, p.94).

I therefore see the Build Peace community of practice as 'communities of practitioners constantly busy positioning themselves within ongoing practice' (Nicolini, 2012, p.94).

3.2 Research design

The data collection and analysis for this research focuses on uncovering peacetech practices-as-entities and as-performance and contains two parts through a mixed method design. To construct the emergent peacetech practice-as-entities I 'follow' the elements that constitute peacetech practice – the materials, competences and meanings, or as Nicolini contends, I start by looking at 'what people say and do' (Nicolini, 2012, p.221). As mentioned previously, I focus on the Build Peace community of practice and its discursive and material practices over time. To do so I employed a mixed qualitative and quantitative longitudinal research design, in line with adopting a practice lens and a focus on the affordances of ICTs. In a second instance and in order to capture the dynamics of peacetech practice-as-performance, I use a case study design. The methods used reflect some of the challenges of studying and emerging field and the opportunities offered by my specific positionality. They also reflect some of the operational constraints inherent to peacebuilding, such as security concerns and the difficulty in accessing detailed information about activities on the ground, results in particular. In the following section I

[13] For more information see www.howtobuildpeace.org
[14] For details see https://www.facebook.com/howtobuildpeace/ and https://twitter.com/howtobuildpeace

outline and justify each method used in this design. In line with my methodological approach of pragmatic eclectism, I ultimately draw on all data sources to provide answers to each of my research questions. Indeed to answer the question of what peacetech practices are for instance, according to my framework, requires both investigating its constitutive elements and the processes of how they are integrated together. No single data source can provide this account. As such this research is designed to generate as thick and rich an account of practices as they happen as possible (Nicolini, 2012).

3.2.1 Advisory panel interviews

My commitment to PAR and the emergent nature of the field of peacetech posed a challenge to the objective of generating useful and relevant knowledge. What kind of approach would be useful to practitioners of policy-makers? How could several years of research address issues in the fast-changing landscape of peace and technology? To help address these challenges I sought to form a Panel to advise on these broader questions that are mostly beyond the scope of this thesis but nonetheless relevant in its design and approach. Panel members would weigh in on key stages of the design and development of the conceptual framework and methodology for this thesis. The idea was also to increase the visibility of the outputs of this research by involving key members of the peacetech community in it from the start, in the hope that they would support the dissemination of its findings.

I set out to approach around ten experts located in as broad a geographical area as possible, with various types of expertise, such as academic or practitioner, and representing different types of organisations, such as international governmental organisations, non-governmental organisations, local or international. Eight answered positively and contributed. The first person I approached to take part was Sanjana Hattotuwa, a Sri Lankan TED fellow involved in many peace processes, currently Special Advisor at the ICT 4 Peace Foundation. He suggested in an email exchange that individual interviews would be far more effective in eliciting insights and perspectives that might either not form part of any public consensus or even in line with their organisation's practices or policies. This was included in the proposal I subsequently sent everyone and the ethical approval document that formed the basis of my panellists' consent forms. In the form, some agreed for me to cite them by name when I used interview materials in the thesis, while others preferred for their interview remarks to remain anonymous. However all agreed to be named as being a part of this panel and to take part in panel-wide virtual discussions once or twice a year.

The panel was composed of:

Name	Title and organisation	Location
Sanjana Hattotuwa	Special Adviser ICT4 Peace Foundation	Colombo, Sri Lanka
Dr. Charles Hauss	Government Liaison Alliance for Peacebuilding	Washington DC, USA
Amy Noreuil	Senior ICT Specialist USAID Office of Transition Initiatives	Washington DC, USA
Francesco Mancini	Non-resident Senior Adviser International Peace Institute; Adjunct Associate Professor Lee Kuan Yew School of Public Policy	Singapore
Jessamy Garver-Affeldt	Programme Officer, Somali Programme Interpeace	Nairobi, Kenya
Milica Begovic	Innovation Specialist UNDP Regional Centre for Europe and the CIS	Istanbul, Turkey
Cindy Chungong	Programme Officer, West and Central Africa Search for Common Ground	Abidjan, Ivory Coast
Muctar Hersi	Head of the Audio-Visual Unit Puntland Development Research Center (PDRC)	Garowe, Somaliland

Table 2 Members of the Advisory Panel

Interviews were arranged based on the availability of the panellist or researcher, and each time I asked them to read a blog post from my research blog www.jenrwelch.com[15]. I initially did not send them the questions beforehand so as not to influence their views in any way. This worked really well for some while not for others, and so from the second round of interviews onwards I decided to include some questions I wanted to address during the interview when arranging the next call and sending over a blog post.

Each time an interview took place, it was via the Skype software, which enables users to chat, voice or video call one another provided each has downloaded it and signed up to it for free prior to a call. Due to some connectivity issues for some of the calls, I decided to have voice calls only rather than video. I then downloaded the software Call Note to record the calls, switching to Ecamm's 'Call Recorder for Mac' when Call Note failed during an interview with Francesco Mancini. The interviews were always semi-structured with some initial questions to consider, recorded on Skype and transcribed. A total of

[15] Now migrated to jengaskell.com

twelve interviews were conducted between February and June 2015. The first sets of interviews provided a good learning opportunity in gauging reactions beyond the spoken word. At time this was difficult because of the remote nature of the interviews and the absence of visible non-verbal cues to guide me as interviewer. Pauses, tones of voice and pace of speech soon replaced these cues to provide contextual information that I sometimes used in my analysis.

I encountered a wide range of perspectives on the value of taking part in the Panel and on members' views of the nature of practitioner and academic knowledge. The latter is interesting because it provides a gauge of potential attitudes towards my status as an academic researcher in the conduct of the interviews. I encountered both the view that academic knowledge is superior to what practitioners produce. When describing some research work undertaken in the field, one Panel member recalled being worried that 'from a more academic standpoint, probably there were a lot of holes in the research and maybe practices that were not very kosher'. Another member stated that academic work is often scary to them, mainly due to its length and theoretical focus. There was consensus on the fact that in peacebuilding academia is far removed from practice, but that both activities would have a lot to learn from one another. One member eloquently summed up the position:

> 'There is a lot of interest in engaging academia more in that area, […] but they're [practitioners] struggling on the mechanisms of what that even looks like. Often I feel like we operate at two different speeds and with very different – like somewhat similar incentives – but we just operate with different mechanisms and processes and at different speeds. […] I think a lot of what's out there is valuable, but sometimes it's not presented in a way that resonates.'

There was also the view that academics were trailing far behind practice to be relevant in the field, as stated by one of the members: 'I think for me the big problem of academia, that basically is 10 years behind reality'. Or another remarked that their pioneering work was outside of the analytical grasp of academic research when he noted that his work was done at 'a time when I can assure you academia didn't have the frameworks with which to analyse it'.

I used these remarks to modify the way I conducted subsequent interviews, by making sure to ask members about their views on these topics, by ensuring I would not send over written work that was too long (except to those (few) who specifically asked for it). But overall, having made clear the PAR position I have described above, I felt we were mostly able to have productive discussions on an equal footing.

3.2.2 Discursive and material practices-as-entities

As outlined previously, the conceptual framework developed in this thesis demands answers to the following questions:

(i) What are peacetech practices and what claims are currently made about their potentials for participation and empowerment?

(ii) How are ICTs adopted and their affordances leveraged in peacetech practices and with what consequences?

I consider peacetech practices-as-entities, or how the elements that constitute practices are integrated. These elements are threefold: materials, competence and meaning. Materials encompass objects, infrastructures, technologies, etc., where the sociotechnical approach I presented in Chapter 2 further warrants a focus on technological affordances, rather than the technologies themselves. Competence includes different forms of understandings, such as Schatzki's practical and general understandings for example. And finally meaning include motivations and what Schatzki refers to as teleo-affective structures, ideas of how things 'ought' to be done. I use evidence of both material and discursive practices to generate data for each of the elements that make up peacetech-practice-as-entities. As Nicolini puts it rather simply, I looked at what 'people are saying and doing' (Nicolini, 2012, p.221). To do so I looked for evidence of discursive practices, as representatives of competence and meaning, but also as an expression of the materials of peacetech practices. In line with a practice approach, I understand discourse as 'a form of action, a way of making things happen in the world, and not a mere way of representing it' (Nicolini, 2012, p.189). There were several considerations that prompted me to consider complementing this view with another source of data. Indeed peacebuilding is both normative and competitive. Funding is scarce, and objectives (building peace) are wide-ranging. This could potentially lead to some exaggeration of benefits or positives and, in line with practice theorists, I opted to analyse evidence of discursive practices alongside evidence of material practices. For the former, I looked at presentations given during the Build Peace conferences, and for the latter I built the Build Peace Database.

3.2.2.1 Build Peace conferences

I attended Build Peace 2014 and 2015, but not 2016. But that is not where I collected the data. Instead I treated these presentations as secondary data. Indeed all the sessions reviewed in this thesis were filmed and made publicly available on Build Peace and then Build Up's YouTube channels. I transcribed the following: 35 video clips from Build Peace 2014 (602 minutes of footage); 28 clips from Build Peace 2015 (over 1,018 minutes of

footage) and 22 (over 898 minutes of footage) from Build Peace 2016. This represents over 41 hours of presentations in total. I also included conference speakers' blog posts where relevant. For example Cindy Chungong, formerly of Search for Common Grounds chaired a panel at Build Peace 2015. The entire panel was filmed and analysed, but I also used the framing blog post that she authored prior to the conference.[16]

This provided evidence of all three elements of peacetech practice that I complemented with information from the Build Peace Database.

3.2.2.2 The Build Peace Database

In order to provide a material counterpoint to the discursive practices described above, I collected an overview of practices from the Build Peace community of practice. The projects included in the Database were either presented or discussed at the Build Peace conferences. The Build Peace Database started off as a Build Peace project,[17] which began in 2013 before my involvement with the team and the conference. When it was first launched at Build Peace 2014, it had gathered about 70 projects, 20 of which had been crowdsourced. One of the most interesting aspect of the Database was that it built upon Puig Larrauri and Kahl's (2013) framework, combining four peacebuilding programme areas and four functions of technology in order to categorise emerging practice. Through my involvement with Build Peace, I had the opportunity to further develop the project and bring it into closer alignment with my research objectives. I therefore suggested updating the existing Database into a tool that would be more valuable to the community in both the data it contained, and as a research platform.

With some technical support I developed the architecture of the Database in MySQL, a widely used relational database management system. Indeed a first modification I undertook from the original Build Peace Database was to enable entries (projects) to have more than one 'function of technology'. This would enable an examination of various affordances of ICTs (referred to as 'functions of technology' in the Database). Around this infrastructure I built a website that would make data collection easier and provide live visualisations of the data contained in the Database.[18] The website also has a blog function to discuss findings or aspects of projects that the Database does not currently support (such as evaluations). I then collected some data, tested and modified some categorisations, and built the visualisations. The latter show a breakdown of themes,

[16] See the blog post here http://howtobuildpeace.org/blog/cindy-chungong1/
[17] See http://howtobuildpeace.org/db/ for more details.
[18] See http://www.buildpeacedatabase.org/ for more information.

stakeholders and types of technology used and whether they were created purposefully for the project or whether the project used an existing platform. The website is intended to function as an open research platform to support the Build Peace community of practice.

In the original Database, project data was collected, then briefly crowdsourced. The intention with the current version of the Database was to crowdsource its content. However upon requesting early feedback from some members of the Build Peace community, it became clear that there were important issues with that approach, mainly objectivity of the data and incentives to participate. Indeed feedback received from the Operations Director of an international peacebuilding NGO, emphasised the growing gap between the possibilities for 'synergies and cooperation' afforded by technology, and in particular the design of a collaborative platform like the Build Peace Database, against the backdrop of increased competition among peacebuilding actors for ever decreasing resources. For him this might lead to stakeholders using the Database as a means of self-promotion rather than representing a meaningful input to a community of research and practice.[19] This is a risk I was aware of while collecting the initial testing data. Indeed most of the websites where information about projects is publicly available are very vague about the practicalities of the projects they describe, focusing instead on aspirational messages and intended impact. The Syria Airlift project is a good example. Their website http://syriaairlift.org/ is beautifully designed, they were mentioned in the press, including a video feature on the BBC, yet never actually took off, literally and figuratively speaking: no activity was ever implemented on the ground in Syria.

As such the web form intended to capture project data was designed to be as factual as possible, with categories of peacebuilding objectives and themes, project stakeholders, functions of technology, software and hardware used, and whether it was created specifically for the project, as well as a host of other information (see Figure 1below).

[19] Correspondence with the author.

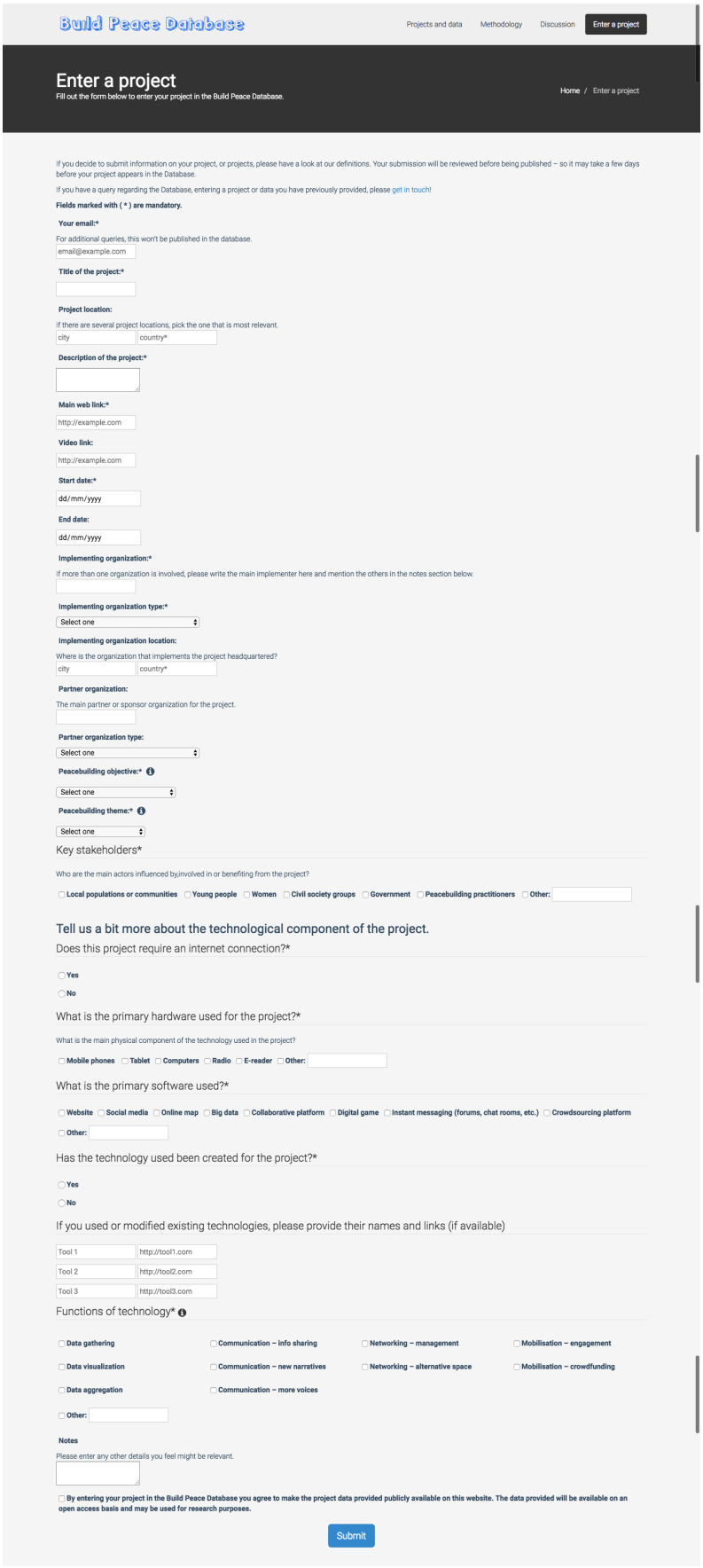


Figure 1 Build Peace Database project entry form

Early conversations with key stakeholders from the Build Peace community or at the Build Peace conference showed a keen interest in using the data from the Database, but this, contrary to my initial assumption, did not overcome a lack of interest in contributing information. Therefore I made the decision to continue using the platform to undertake desk research instead from information publicly available on project or organisation websites.

Taking these elements and difficulties into account, data from the Build Peace Database offers an important contribution not only to my analysis, but to the field of ICTs for peacebuilding as the first dataset of practice on record. For the purpose of this analysis, it contributes in allowing the comparison of a wide range of peacebuilding projects that use ICTs.

3.2.3 Cyprus interviews and survey

As mentioned above briefly, peacebuilding – and peacetech – is a highly normative endeavour. And whereas evidence of reflexive understandings and motivations for peacetech practices is invaluable, some levels in more objective groundings are needed. A first such counterpoint was provided with the Build Peace Database. A second came about with an opportunity offered by the Centre for Sustainable Peace and Democratic Development (SeeD) when I asked them to include some questions I had written into the Social Cohesion and Reconciliation (SCORE) survey they were planning on administering across Cyprus in June 2015. Their methodology included two random samples of 1,000 households: 500 from the Turkish Republish of Northern Cyprus and 500 for the Republic of Cyprus on the South. The survey included the following questions:

Dem1. How often do you use the web (internet):

More than once a day	Once a day	Less than once a day	I don't use the web
1	2	3	9

Dem 2. To what extent do you use the web (internet) on	Not at all	Sometimes	Often	Almost always	I don't use the web
A computer	1	2	3	4	9
A smartphone	1	2	3	4	9

Other	1	2	3	4	9

Dem 3. *The following are 'Yes' or 'No' questions. If you don't know the answer then choose the third option ('I don't know')*	**Yes**	**No**	**I don't know**
Do you have an online social media profile (on Facebook, twitter, LinkedIn, or other)?	1	2	3
Do you know any of the following online platforms:			
a. Mahallae	1	2	3
b. Nicosia is calling (online game)	1	2	3
c. i-Vee	1	2	3
d. Hands on Famagusta	1	2	3
e. Mapping Karpas	1	2	3
f. YuBiz	1	2	3
Have you heard of any website or online platform that is aiming at reconciliation and is aiding the peace process in Cyprus?	1	2	3
Have you used any website or online platform that is aiming at reconciliation and is aiding the peace process in Cyprus?	1	2	3

Dem 4. To what extent do you believe that communication technologies (internet, apps, etc.):	Not at all	Somewhat	Quite	Totally
Can help reconciliation in Cyprus	1	2	3	4
Can contribute to the peace process in Cyprus?	1	2	3	4

These questions were translated into Greek and Turkish and included in the SCORE survey of June 2015. The results were sent to me in SPSS format.

I also conducted three interviews with stakeholders who had experience of the peace process in Cyprus to discuss my preliminary analysis of the survey results. These interviews took place over Skype and recorded as the others, lasting between 30 minutes to an hour, in order to provide more context for the answers of the survey.

This data has been useful in grounding some of the narratives and themes of peacetech discursive practices.

3.2.4 Peacetech practice-as-performance: the case study of CENAP in Burundi

In order to capture the dynamic element of peacetech practices as they happen I use a cases study design including a mixture of ethnographic observation, in-depth interviews and researcher reflections to generate primary data on peacetech practices – including the processes of adopting new technologies, and designing and leveraging their affordances. This provides insights on peacetech practice-as-performance as indicated above, but also a detailed account from the perspective of a local organisation experiencing peacetech that contributes in large parts to answering the final research question:

(iii) How can peacetech practices support or hinder the empowering and participatory potential ICTs could afford peacebuilders?

This is especially important when, as described in Chapter 2, one of the early potentials of peacetech is perceived to be for empowerment and participation of local peacebuilders. Exploring the perspective and experience of a local organisation can thus shed light on those practices its representatives felt contributed to their empowerment or to enhancing participation in peacebuilding, and practices that did not.

I worked with CENAP as part of the Build Peace Fellowship programme, through which I was the lead mentor for Jean Marie Ndihokubwayo between May 2016 and July 2017. The Build Peace Fellowship was created in 2016 by the organisation I co-founded and co-direct, Build Up, in order to provide more sustained capacity building around the development or introduction of new technologies in peacebuilding. The idea was to find local peacebuilders with an innovative idea involving new ICTs that they wished to implement in their existing work. The Fellowship is described as follows on the Build Peace website:

> ‘The Build Peace Fellows program started in 2016 in recognition of the incredible collective expertise the Build Peace community can contribute to promising, innovative initiatives in the peacebuilding sector. The program is run by Build Up

> and builds local innovative potential for individuals and organisations embedded in peacebuilding processes.
>
> Over one year, the program helps an individual take an innovative peacebuilding intervention from idea to implementation. We believe the program is particularly important at a time when there is still a mismatch between the push for innovative peacebuilding and local capacities for that innovation to take place in the field.
>
> Fellowships are awarded through a competitive process in which applicants present a peacebuilding project that they want to develop through the fellowship. In 2016, we received 148 applications from 60 countries, and selected three Fellows' (Build Peace website at http://howtobuildpeace.org/fellows/ [accessed on 26 August 2017])

The programme was developed to bridge a skills gap on new technologies and peacebuilding.

Jean Marie's Fellowship project consisted of developing a participatory analysis tool CENAP could use to analyse the results of their surveys in collaboration with key stakeholders to support the sub-national and national dialogue process they had been working on.

I gathered three types of data: digital ethnographic observation of the mentoring and technology development processes; interviews with the CENAP team and wider stakeholders involved in the programme; and ethnographic observation during a field visit of one of the participatory analysis workshops (organised by CENAP as part of their existing sub-national and national dialogue processes) that took place over five days in May 2017. All these activities were undertaken in French, except for the calls and exchanges with the Elva team in Georgia, the web developers of the platform.

The digital ethnographic observation of the mentoring and development processes involved mostly writing a researcher journal to document my own perspective as a researcher and practitioner, as well as my impressions of the process to guide subsequent interviews and observation on the ground in Burundi.

I conducted five in-depth interviews. In light of the tense situation in Burundi, it was incredibly difficult to get participants outside of the CENAP team to agree to an interview, and only one accepted. Because of the flat nature of the hierarchy within the CENAP organisation, there was convergence in many of the answers early on and I decided that

only four in depth interviews would suffice in complementing my ethnographic observations.

The interviews were semi-structured with questions related to the uses of technology in the youth dialogue context of CENAP's programme peacebuilding context. The interviews took place on site in Bujumbura in May 2017 and subsequently over Skype in June 2017. They lasted around an hour. The face-to-face interviews were recorded on a portable Dictaphone.

For my ethnographic observations in Bujumbura, Burundi, I worked as part of the team Monday 22 to Friday 26 May 2017. I attended one to one meetings with various members of the team, two staff meetings and the workshop where they tested the participatory analysis platform, which was attended by some members from the Programme's Steering Committee and Reflection Group. These include youth representatives, government representatives and decision-makers, as well as members of Burundian civil society.

Participants who are external to CENAP were due to sign the same consent form as CENAP staff but the Deputy Director decided just before the session that it would be too sensitive to ask them to do so. She made them aware of my presence and my research when she opened the meeting and everyone agreed that I could stay and make observations.

3.3 Analysing the data

As stated above, each method and the data it generated for this thesis does not provide a neat answer to each research question. In my methodological approach of pragmatic eclectism, I use these mixed data sources that I analysed qualitatively or quantitatively to provide alternatively: triangulation - where I have sought 'convergence or corroboration of results from difference methods'; complementarity – where I have looked for 'elaboration, enhancement, illustration and clarification of the result from one method with the results from another method'; or the discovery of contradictions between results from different methods (Johnson and Onwuegbuzie, 2004, p.22). In the following sections I detail the practical steps I took to analyse data from each data source.

3.3.1 Advisory panel interviews

All panel interviews took place on Skype and were recorded. I transcribed all the interviews verbatim. I then read the transcripts and made notes on key themes that emerged. At first I used open codes to collect key themes that were emerging. After

consolidating all my notes, I started looking for codes that could be consolidated into categories. Due to the small number of interviews, I found it manageable to undertake this process on paper. At this stage of the research process I was particularly interested in the kind of conceptual framing that would be relevant and useful in the field and considered the members of my Advisory Panel as expert informants in that sense looking for recurrent elements in terms of gaps and needs with regard to peacetech. I was also interested in their own conceptualisations of new technologies, peacetech and peacebuilding. Finally I considered their opinions on the design of this project and its potential relevance to the field. I outline the outcome of this analysis in Chapter 4, although I have already recognised that it contributed to writing Chapter 2.

3.3.2 Discourse analysis

As mentioned above, discourse has come to mean a broad range of different things to different people (Alvesson and Karreman, 2000, p.1126). In line with my definition of discourse, my analysis of it at the Build Peace conferences has less to do with linguistics than situated meanings (Gee and Handford, 2012, p.1). After transcribing the sessions of the Build Peace conferences 2014, 2015 and 2016 made available publicly on YouTube, I went through the transcripts and highlighted key themes. I used an inductive approach to my analysis guided by the following questions:

- What peacetech practices are presented at Build Peace?
- How is technology conceptualised?
- What technological affordances are highlighted?
- What are the narratives around participation and empowerment?

After consolidating those notes, I read the transcripts again looking for two additional elements: how the adoption and design of the technology were discussed and whether the type of narratives around participation and empowerment were different according to different peacebuilding actors who expressed the claims.

I paid particular attention throughout my analysis to the so-called ‘frame problem’ (Gee and Handford, 2012, p.4). According to Gee and Handford the frame problem can be expressed as follows:

> ‘Any aspect of context can affect the meaning of an (oral or written) utterance. Context, however, is indefinitely large, ranging from local matters like the positioning of bodies and eye gaze, through people’s beliefs to historical, institutional, and cultural settings. No matter how much of the context we have considered in offering an interpretation of an utterance, there is always the

> possibility of considering other and additional aspects of the context' (Gee and Handford, 2012, p.4).

This is indeed an important element to consider in this case where people from all over the world and various conflict or peacebuilding contexts share their thoughts and ideas on peacetech. However this is mitigated by what Autesserre notes as a surprising characteristic of Peacelanders (the inhabitants of Peaceland): that despite their cultural differences and experiences of different contexts, their values, behaviours, norms and shared meanings are remarkably similar and consistent across Peaceland (Autesserre, 2014). With the majority of speakers whose presentations were transcribed being part of Peaceland, I can assume some level of consistency in frames of reference. Where there are exceptions, I specifically address them in relation to comments or excerpts supporting my argument.

3.3.3 The Build Peace Database

The data contained in the Build Peace Database is available to query in SQL language (see Figure 2 below).

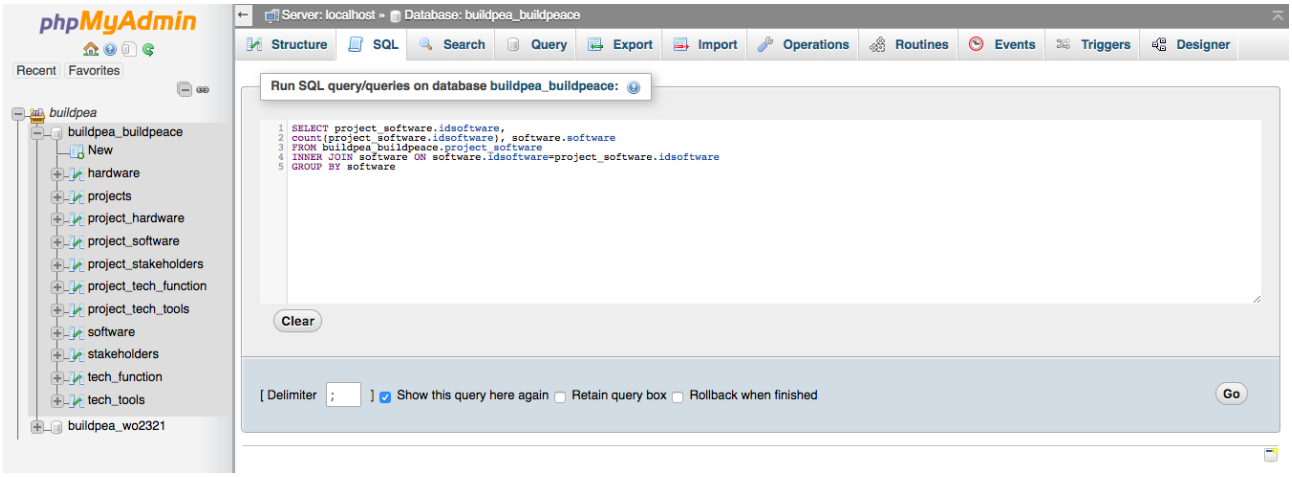


Figure 2 Screenshot of BlueHost's SQL query panel used for the Build Peace Database

At this stage of the research process and because of the newness of the field I undertook exploratory analysis – looking for patterns in terms of practices, peacebuilding themes and objectives, stakeholders and implementing organisations. I therefore extracted the relevant data from the Database and saved in .csv files from which I could then conduct descriptive and Bayesian statistical analysis of the data contained in the Build Peace Database, which forms part of the analysis in Chapter 5. I chose this analytical method because of the low number of project (small n) for which most statistical assumptions do not hold true. The analysis was made with the understanding that the data is representative of the Build Peace community of practice rather than peacetech globally.

3.3.4 Case study: Cyprus interviews and survey data

I transcribed and analysed the Cyprus interviews in the same way as my Advisory Panel interviews. See section 3.4.1 above.

For the survey data, I undertook two types of analyses: descriptive and analytical, where I tried to determine whether there were relationships between certain variables. See Appendix A for a full breakdown of the statistical tests – and results – that I ran through the SPSS software. Indeed as the sample sizes were 500 I was able to use traditional social statistics. As the data was already provided to me by the SeeD team in SPSS format, I used that software to conduct my analysis. I then transferred the data to the online infographic maker 'PiktoChart'. I provide more details of the statistical tests and anlaysis I conducted in Appendix A.

3.3.5 Case study: participant observations and interviews

All interviews were recorded either on Skype or with a portable Dictaphone. I transcribed all the interviews verbatim in French. I then read the transcripts and made notes on key themes that emerged. At first I used open codes to collect key themes that were emerging. I used an inductive approach to my analysis guided by the following questions:

- What were the motivations and incentives to want to introduce ICTs to CENAP's peacebuilding work?
- What were the challenges/enablers throughout that process?
- What are the perceived benefits of using technologies?
- Can it be replicated beyond the Build Peace Fellowship?

I used the same approach for my observation data in my Researcher Journal and consolidated the sources in a category matrix. Only the quotes supporting my argument were translated into English as I preferred to remain as close to the original source throughout the analytical process.

3.4 Ethical considerations

Every component of this research received the University of Southampton's ethics committee's approval (applications 12603 (see Appendix B), 14032 (see Appendix C), 18276 (see Appendix D) and 24002 (see Appendix E)).

3.4.1 Interviews and participants observation

Similar ethical considerations apply to the interviews I conducted with my Advisory Panel, in the Cypriot and Burundian contexts.

Indeed the participants were all over 18 years old, and clear information was given to those who participated, provided information or were interviewed for the case studies, on their right to stop taking part in the research,

There are two main ethical issues. First a need to clearly communicate to potential participants that the data submitted will be made openly available. This is addressed in the explanatory note in the participant information on paper and web forms.

A second ethical issue is the potential for the dual role of the researcher, as a PhD student doing research for a thesis project, and independently as part of Build Up, the organisation behind the Build Peace Conference and database, to overlap and lead possible participants to feel obligated to share information. This potential tension is being managed through an explicit and clear informed consent process.

For Fine (forthcoming) PAR strives to 'embody a democratic commitment to break the monopoly on who holds knowledge and for whom social research should be undertaken'. This however does not preclude other power dynamics from affecting the process itself. Kesby et al. (2007: 21) highlight some potential negative effects.

Some negative power effects of participatory approaches:

- De-legitimisation of research methods that are not participatory
- Production of participants as subjects requiring 'research'/'development'
- Production of suitable disciplined subjects as participants expected to perform appropriately within participatory processes
- Re-authorisation of researchers as experts in participatory approaches
- Romanticisation of marginalisation of local knowledge produced through participatory processes
- Reinforcement of pre-existing power hierarchies among participating communities
- Legitimisation of elite local knowledge simply because it is produced through participatory processes

(Kesby et al., 2007, p.21)

Acknowledging and articulating the existence of power dynamics within the participatory research process seems an appropriate first step towards mitigating these potential effects and achieving collaboration based on 'negotiations between unequally positioned

participants in pursuit of common goals' through '*persuasion* by strength of argument in an atmosphere of equality' (Kesby et al., 2007, p.22). This risk is mitigated with CENAP by the clarification of the Memorandum of Understanding; by the benefits the CENAP see in my field visit – which would not have been possible under the Build Peace Fellowship and the need for the Fellowship project to progress in order for the thesis data to be collected. I also decided not to conduct interviews until the platform had been completed and tested so as not to interfere with that process and remain in a supporting role throughout that time.

For my advisory panel, I approached the interviews acutely aware of the varying power dynamics at play within the panel. I was aware that while some members were very comfortable in an academic setting in light of their professional affiliations with academic institutions, others might not be. I also thought that to some of the practitioners working in the field, the more conceptual sides of my thesis might at first seem irrelevant. I tried to address these issues by having a first call with all the members of the advisory panel where we discussed the project, my motivations and expectations for the interviews as well as theirs. This provided a baseline for me to establish individual preferences and perspectives, as well as how to build a relationship with each individual that would establish the parameters for an open and equal conversation.

A third issue regards anonymity. Peacebuilding is a complex field, both academically and in practice. Participants need to be assured that their contribution will remain anonymous, if they wish it to be. As such participants had a choice in their consent form regarding specific attribution of their interview quotes or not in the thesis. Participants in the analysis workshop where ethnographic observation took place have already agreed to being filmed and were aware that their contribution was being recorded as such for the purpose of CENAP's wider research agenda. The role of my observations had been made clear to them.

A fourth issue is participant safety. Even though Cyprus is relatively stable and so was Burundi at the time of the research, both remain in conflict, and that cannot be ignored. The questions for this study relate primarily to the uses of technology, particularly ICTs and this was made clear to potential participants. In the case of Cyprus, this helped move away from more central political questions. In the case of CENAP, the questions concerned the use of ICTs for a dialogue process focusing on Burundian youth's vision for the future. The themes were chosen by the CENAP organisation specifically not to be too politically sensitive. But unavoidably, some answers might touch upon sensitive issues. For that reason participants were given the option to take some of their statements off the record. While they were given every assurance that risks had been minimised, those

cannot be erased and so the consent sheet, and myself, made it clear they are able to withdraw at any point from the study.

A fifth issue relates to the political nature of the conflict context. This research was made public at the aggregate level and after careful consideration of any risks to CENAP and participants. Although the focus of my research is on the technological element of their work rather than on its political nature and impacts, I made sure to employ purely academic writing, not to be used against or for different sides/actors in the conflict. The team had CENAP had the opportunity to review the main arguments and all the quotes used in Chapters 6 and 7.

3.4.2 Build Peace Database, conferences and SCORE survey

There are two main ethical issues. First a need to clearly communicate to potential participants that the data submitted will be made openly available on the website but also for further research projects. This is addressed in the explanatory note around the web form and upon clicking the submit button.

A second ethical issue is the potential for the dual role of the researcher, as a PhD student doing research for a thesis project, and independently as part of Build Up, the organisation behind the Build Peace Conference and database, to overlap and lead possible participants to feel obligated to share project information. This potential tension is being managed through an explicit and clear informed consent process for the re-use of the Build Peace Database material.

I had little control over the SCORE survey once my proposed questions were admitted, but SeeD, who operates in Cyprus and other conflict contexts, is a reputable organisation specialising in such surveys. For the purpose of this thesis the SCORE survey data I had access to is treated as secondary sources.

Similarly for the Build Peace conference I analysed only presentations and discourse made publicly available on YouTube.

3.5 Concluding remarks

Working in peacebuilding contexts is political and difficult because it presents significant risk to personal and participant safety. Many of those risks were duly considered and minimised, as described throughout this Chapter. Conversations that were held in confidence are excluded, as was insider knowledge of failure, challenges, aspirations and motivations gleaned outside of the ethically approved empirical data gathering frame for

this research. There remains a wide range of data that I was able to gather in support of my arguments in answering my research questions. It is to their analysis that I now turn.

Chapter 4 Discursive construction of peacetech practices-as-entities

> 'The empowerment of people to participate in localized conflict management efforts is one of the most significant innovations and opportunities created by new technologies.' (Kahl and Puig Larrauri, 2013, p.1)

This research takes as its starting point the emerging peacetech literature that credits new ICTs with the 'empowerment of people to participate' in peacebuilding efforts and aims to uncover the nature and extent of the transformative potentials of ICTs in peacebuilding processes. To do so my conceptual framework advocates a practice lens with a performative view of the materiality of ICTs. What this means empirically, as Nicolini contends, is to start by asking 'what are people saying and doing?' (Nicolini, 2012, p.221). This Chapter starts with what people are saying within the Build Peace community. I have defined Build Peace as a community of practice (see Chapter 3). Indeed its relevance rests on the idea that 'practice is reproduced in time through a process of active engagement and participation sustained by a specific community' (Nicolini, 2012, p.78). The Build Peace conference series began as the first forum to discuss ICTs for peacebuilding and currently represents the most comprehensive collection of discourse on the role of new technologies for peacebuilding. As such I take presentations given at the Build Peace conferences in 2014, 2015 and 2016 as evidence of discursive peacetech practice. For the purpose of this thesis and as detailed in Chapter 2, practice is conceptualised in line with Shove et al. (2012) as made up of three broad categories of elements: materials, competence and meaning. Materials include infrastructure, objects, and thus technologies. In line with the conceptual framework developed for this thesis, this means focusing on the affordances of technologies rather than technologies themselves. Competence includes practical and general understandings, and meaning refers to the motivational knowledge and the 'social and symbolic significance of participation' (Shove et al., 2012, p.23). In constructing a representation of peacetech practice a first empirical step is therefore to 'follow these elements', identifying them and describing how they are integrated. This, Shove et al. (2012) contend, provides a construction of peacetech practice-as-entities – a static view of practice and its constitutive elements. In this Chapter I focus on discursive practices, where discourse is understood as 'a form of action, a way of making things happen in the world, and not a mere way of representing it' (Nicolini, 2012, p.189). As such it follows Shove, contra Schatzki in viewing discourse and practices as one, rather than fundamentally different

(Schatzki, 2017, p.129). This still leaves a question about the relationship between discursive and material practices. What is important is that in this conceptualisation both discursive and material evidence needs to be considered together to construct peacetech practices. Analysing discourses can provide evidence of general understandings, meanings and ideas as well as the competences and the rules that make up practices through practitioners' expressions of their understandings of what those are. Analysing the material practices in turn can provide more insights into the roles of technologies and infrastructures, but also on the competences and meanings in peacetech practices. The specific ways in which they relate to one another as constitutive of practices warrants further examination that is outside the scope of this thesis. Instead I critically explore both discursive and material aspects of peacetech practices in this and the following Chapter to move beyond a definition of peacetech as 'the use of ICTs for peacebuilding'. Where there are differences or discrepancies between what people say and do, I treat those as areas where general or practical understandings are still being negotiated.

The following sections start to explore the claims made at the Build Peace conferences and their delineation of peacetech practices and practitioners, organised according to the elements constitutive of peacetech practices. I used discourse and discursive practices interchangeably, and the term narrative as an overarching, emergent collections of discourses.

4.1 Meanings in peacetech practice

In my analysis of Build Peace presentations I found evidence of a first set of ideas that can be characterised as motivational assumptions or knowledge. Practice theorists have stressed the need to uncover these motivational ideas. For example Nicolini states that:

> 'to understand the accomplishment of a practice one has to take notice not only of its 'sequence' but also of the landscape of the ends, purposes and motivations that made one happen while the others remain mere possibilities' (Nicolini, 2012, p.168)

Whereas this makes the notion of motivations sound as something external to practices, Shove et al. (2012) have subsumed these concepts into their definition of meaning as an element of practice, which is the view adopted in this thesis. This also makes empirical sense, as these are ideas used to justify either the need or the desirability of peacetech practices. I illustrate these points in the following sections that detail three different sets of motivational ideas or rationales: empowerment, participation and scale and efficiency. Empowerment and participation were themes that emerged in the peacetech literature

presented in Chapter 2. As I show below, their importance was confirmed by their centrality in most presentations. The only other theme that was developed by more then three different speakers was that of scale and efficiency, which is why it features in this Chapter.

4.1.1 Empowerment

Empowerment is a core theme in peacetech discourse. It was overtly mentioned in the majority of Build Peace 2014 keynotes, panels and other presentations and as such became one of the three core themes of Build Peace 2015 together with behaviour change and impact. The empowerment theme in peacetech discourse may be represented in one of three ways. First empowerment highlights the possibilities for local populations. Sheldon Himelfarb, Director of the Peacetech Lab at the United States Institute of Peace in Washington notes that the proliferation of 'bursts of innovation by regular people who are tackling violence in their communities with readily available technologies' means 'new generations of peacebuilders are empowered' (Himelfarb, 2015). For Sanjana Hattotuwa (2014) more and more people are empowered through ICTs to 'share their voices, stories and opinions'. Patrick Meier argues that in the wake of hurricane Sandy in Haiti in 2012 'local teams used Unmanned Aerial Vehicles (UAVs) to carry out their own damage assessment', which for him is a great example of 'how these people have been empowered' (Meier, 2015). Oren Murphy described the evolution of thinking around ICTs and peacebuilding in the following terms:

> 'I think in the early days everyone was rightly excited about the decentralising effects of ICTs in that it decentralised power and information flows so that anyone can contribute to dialogues in a way that they couldn't under traditional media which is more about pumping information out without much interactivity.' (Murphy, 2015)

For Mancini and Perry the use if ICTs has led to a 'diffusion of knowledge and power' in that they have provided new ways to yield influence, which has changed the methods of many conflict actors (Mancini and Perry, 2014). These examples illustrate the construction of a pervasive narrative in peacetech: that of a local actor able to yield new forms of power in her own context through the use of ICTs. Empowerment is seen as a new ability to share one's voice or opinion as well as to take part in existing peacebuilding processes. In this sense it is closely related to the participation narrative I describe below. As evidenced in the excerpts above, two rationales are loosely provided for this: widespread availability of ICTs and a decentralisation of information that they have created. In this latter sense, ICTs are seen to afford local peacebuilders new ways to

overcome longstanding issues with peacebuilding. There seems to be implicit references to what I presented in Chapter 2 regarding the blame attributed to lack of local ownership and participation for failures of peacebuilding operations (Mac Ginty, 2011, 2015; Leonardsson and Rudd, 2015).

Second empowerment relates to new possibilities for peacebuilding practitioners. For example for Mancini and Perry, the availability of passively generated data such as cell phone metadata for collection and analysis is opening new avenues of research in the field of conflict analysis (Mancini and Perry, 2014). The authors identify several current trends in conflict analysis with a focus on real-time situational awareness. First they highlight the growth of data-driven approaches in peacebuilding and more robust assessment of conflict and post-conflict situations. In terms of analysis they note the growing use of Geographic Information Systems (GIS) to visualise data (Mancini and Perry, 2014). Campbell et al. note that:

> 'ICTs, such as crowdsourced monitoring systems, have the potential to close the broken loop by providing peacebuilding organisations with regular information on the effects of their activities and other contextual changes; ICTs have the corollary potential to enable local populations to convey information about the effects of peacebuilding activities.' (S. P. Campbell et al., 2014)

This is not to say that peacetech discourse is evangelical about ICT uses. Indeed a third empowerment narratives for local peacebuilders and peacebuilding practitioners are often tempered with arguments that new technologies are seen to empower those working for as well as against peace, as illustrated by Tellidis' statement during a Panel discussion at Build Peace 2015:

> 'So you have this empowerment notion of ICTs, that ICTs can empower local populations, they can empower the everyday, they can change the status quo, they can challenge the status quo and politics and how it happens. On the other hand you have the hegemony aspect, which is essentially empowering authoritarian regimes. Rather than a liberating tool, ICTs can become a very oppressive tool.' (Tellidis, 2015)

Sabrine Saad notes that:

> 'The Syrian regime opened up social media to study the opposition. For years the Syrian government had blocked social media. This so this is an opportunity for freedom of speech which is a real opportunity, but at the same time when you know how to use the web you can easily use it against the people.' (Saad, 2015)

In all these claims about empowerment, the term is neither defined nor clarified. As mentioned above little information is provided regarding why empowerment is needed or beneficial. There is acknowledgement that empowerment can also affect those who work against peace, which is portrayed as a risk, illustrated by Tellidis and Saad's statements above. However even for the positive view of empowerment there is a level of vagueness around who it is important to empower. I come back to this later.

4.1.2 Participation

Another set of motivational assumptions relate to the idea that technology allows greater participation in peacebuilding processes. The frequency with which this was mentioned in all three Build Peace conferences suggests that these claims represent a central rationale for the use of ICTs by peacebuilding actors. At Build Peace 2014, my analysis shows that over a third of the Short Talks (Ignite Talks as they were called) are directly about participation; two out of three panels take participation as central framing for the potentials of peacetech; and all four keynotes are about greater or new forms of participation. At Build Peace 2015, despite participation not being one of the core themes, it features in all three panel discussions and over 56% of the Short Talks. Again at the 2016 conference, participation is central to over half of the project presentations. Here again are two versions of this discourse: that ICTs allow many more individuals to participate; and that ICTs allow peacebuilders to reach more people, including those who are traditionally marginalised (who can in turn participate or bring their voices to peacebuilding processes). The difference might seem semantic, but one aims beyond peacebuilding practices, referring to the local or everyday populations, while the other does not.

Valerie Oliphant, former Project Director at Social Impact Lab asserted:

> 'I think as peacebuilders one of our goals should be to really focus on making peace an inclusive process and we're not going to do that by only working with a small elite group; and so using higher end technologies that's great as there is a lot of potential there. But if you also incorporate some of these lower end technologies, you'll reach a much broader population.' (Oliphant, 2015)

Talking about political processes, Philip Thomas echoes these sentiments when he says:

> 'I think if we are working in a particular context in very specific political change where we have mapped out the actors that need to be participating in how to relate those actors with a broader base of constituents, which they allegedly represent, technology can help enormously in that, so that the conversations

> move beyond the elites… To make sure that the voices of traditionally marginalised people are amplified and heard in order to inform processes.' (Thomas, 2015)

Diana Chigas (2016) also sees the potential of new technologies to 'create new ways of engagement, to be more inclusive and bring more voices of the people'. Interestingly these last three presenters construct their claims by identifying as peacebuilding practitioners, where 'we' does not seem to refer to local populations, but rather to what Autesserre (2014, pp. 5-6) would call 'Peacelanders', belonging to a 'transnational community of interveners'.

Muctar Hersi, documentary filmmaker at the Puntland Development Research Centre (PDRC) in Somalia describes the role of ICTs for his organisation:

> 'Eight years ago it was still very difficult to get Internet in Puntland. Times are changing and we feel that technology can help us reach more people also from the Somali diaspora. So little by little our experience and ability is expanding. And we hope that in future we will be able to create a space where the Somali diaspora living all around the world can directly participate in our projects and programmes. So we are very committed to technology and with technology we are realising that we'll be able to have more impact.' (Hersi, 2015)

Again though it would be misleading to say peacetech discourse at Build Peace is evangelical about ICT uses. Two arguments are presented that temper the perceived impact of the participation claims described above. First the idea that getting a much broader reach does not matter per se. Indeed Oren Murphy states that:

> 'While there is this assumption that getting mass reach matters, I would question that. I mean I would just use as an example the Kony 2012 – does anyone remember that? It was like everyone is involved in that, it was the most viral campaign ever which is all very impressive but that was a flash in the pan. Kony is still out there as far as we know and it's completely fallen off the agenda. So sometimes having a mass interest is hard to sustain and if something doesn't change very quickly it drops off... And you're left wondering what was the point of the exercise and does Justin Bieber still care about catching Joseph Kony?' (Murphy, 2015)

Murphy (2015) also contends that 'increased participation' has been shown to be more problematic than originally anticipated:

> ‘At first the thought was that because everyone could participate, they would. Into reality as we now know, which is that just because you create a platform for participation, it does not mean that people will participate. And I think that one of the biggest challenges that we’re now facing is how do we incentivise people to participate. So the question is how to create structures that enable participation but the hard bit is how to make sure that people actually use them.’

What is interesting to note is that the link between technologies and participation is rarely made explicit. Only two presenters specifically did so. Philip Thomas (2015) noted that in a study of asynchronous conversations online:

> ‘The study that looked at what happens in conversations that happen asynchronously, across time between groups that are polarised. An interesting result was that in a graduate setting for example, undergraduates were five times more likely to participate in those conversations than face-to-face meetings. Women were five times more likely to participate.’

Muctar Hersi (2015) also describes how the use of technologies enable them to create a feedback loop between the newly elected government in Puntland and an expectant population, thus strengthening the emerging democracy in the region.

As with the empowerment discourse, there seems to be different implicit constructions of the peacetech practitioner – either as members of the local populations, or as peacebuilding practitioners. In this sense some of the empowerment and participation discourses seem to intimate that a strong motivation for using ICTs is their ultimate ability to move peacebuilding beyond intervention by fostering greater direct participation in and/or the empowerment of local populations to affect peace processes. In other instances however, the motivation for using ICTs rests in their perceived ability to enhance the work of peacebuilders through interventionary practices. As described in Chapter 2, the adoption of a practice lens does not prescribe a definition of peacebuilding practices as interventionary – which is why I refer to the intervention model as ‘traditional’ peacebuilding practices. This ambiguity in the construction of the peacetech practitioner is interesting in that it is visible in the peacetech literature presented in Chapter 2, yet has not been stated explicitly and its implications remains unexplored. It poses the question whether these different motivations lead to different kinds of peacetech practices. I continue on this line of enquiry in Chapter 5.

4.1.3 Scale & efficiency

A different set of motivational assumptions focus on operational and impact efficiencies and improvements. The main narratives here are concerned with the idea that technology can help peacebuilding efforts at larger scale than was possible before. Perhaps some of the most novel (and least specific) set of claims on the potential of ICTs and technology more broadly for peacebuilding is the idea they offer peacebuilding the power of becoming 'more, better, faster'.[20] There are variations around the notion of scale and the adoption of a for-profit model in reaching it. Sheldon Himelfarb (2015) for instance argued for the creation of a 'peacetech industry' at the 2015 Build Peace conference when he noted:

> 'For the first time in history, anyone with a cell phone can send information, ideas, money, photos around the world… Let's use the new power of data and tech to create jobs and money.'

Himelfarb (2016) subsequently stated:

> 'Our vision of a thriving peacetech industry includes governments laying out seed money and awarding contracts for research and development. The resulting projects would attract investors, and businesses would discover overlapping interests with peacebuilding professionals. Profits would be realized in many cases, by leveraging the power of scale that comes with tech, data, and media work, creating a public-private win-win through more peaceful societies and sustainable economies.'

Mark Nelson (2015a) describes four components of technology (sensors, communications technology, computation and actuators) that:

> 'Are now so inexpensive and ubiquitous that your smartphone contains many of each. And unlike previous technological revolutions, individuals can now design and deploy peace technology at scale almost anywhere in the world.
>
> Technology is suddenly enabling us to rewrite human behaviour in software code at a scale and speed that has never been possible before.'

Nelson (2015b) links changing human behaviour through technology as follows:

[20] Scaling Peacetech: More, Better, Faster was the title of USIP's 2016 'Peacetech Summit' conference http://www.peacetechlab.org/events/2016/2/4/peacetech-summit-2016

> ‘Technology now allows us to measure human and social behaviours and the speed and levels of precision and resolution that we've never been able to do before. In Silicon Valley we have an algorithm that basically says if you can measure something you can begin to design for if you can begin to design something you can monetise it. That means that we suddenly have the possibility of for-profit peace technologies.’

Diana Chigas (2016) offers a different argument to the ‘scaling potential’ claims when she says that:

> ‘Technology has tremendous potential – and for those of us who have been really struggling with working at small scale and wondering how does that contribute to peace writ large, tech can help scale things**.’**

This seems to echo another of Himelfarb’s (2015) arguments when he asks and answers the question of ‘how to increase peacetech’s impact? We all seem to agree that we need scale: more peacetech makers, more users, more often in more places’. Again it is unclear who the peacetech practitioner is in these discourses, but an illustrative example of the peacetech industry’s potential used by Himelfarb (2016) suggests that these views remain grounded in an interventionary model:

> ‘We showcased a non-profit peacetech accelerator being launched in Colorado to support in their own words ‘12 new startups that use technology to reduce violent conflict’. We applauded the work of Drexel University, this nation’s largest private college of engineering, for creating the first peace engineering degree program to help expand development of peacetech, among other goals.’

Furthermore there is an undercurrent in the scale and efficiency claims that new technologies necessarily mean better peacebuilding. This is echoed in some of the comments included above about the need to balance improvements with a responsibility to do no harm, implicitly acknowledging that new technologies have a positive effect on efficiency and possibly effectiveness. Yannis Tellidis however switches that around when he notes:

> ‘Maybe it's not better ICT that we should be building, maybe we should be focusing on better peacebuilding, which will then allow us to use better ICTs. And again pushing it one step further, perhaps we should be talking about better politics, not just peacebuilding not just ICTs.’ (Tellidis 2015)

Besides an ambiguous construction of the peacetech practitioner, another element that all three narratives have in common is the existentialist undertone of their

rationales. It seems that participation, empowerment and scale are achieved simply by virtue of the existence of new ICTs – their 'ubiquitous' availability, ease of use or inexpensive nature. I show below that three kinds of implicit conceptualisations of technologies are embedded in these discourses: as a game changer, a tool and a double edged sword.

4.1.4 ICTs as a game changer

This conceptualisation stems from the idea that new ICTs have changed the structures and landscape in which peacebuilding processes unfold.

Sheldon Himelfarb (2015) opens his keynote presentation with the following statement:

> 'Historic moment in the field of peacebuilding: I don't have to convince anyone of the importance of new media and tech for peacebuilding; thanks to the Arab Spring and ISIS people now get it; and tech is awesome and ubiquitous…'

He writes in 2016 that:

> 'We also believe that the for-profit sector has been woefully under-utilized—particularly now when low-cost, easy-to-access technology is changing the way information and capital flow. This new normal has unleashed unprecedented opportunities for social entrepreneurship in the use of tech, data and media for peace and prosperity.' (Himelfarb 2016)

Cindy Chungong, Country Director at Search for Common Ground offers a different perspective along those lines:

> 'But one thing that is common is that no matter what level of technology you're talking about, it's increasingly ubiquitous.
>
> So technology is increasingly everywhere you look and as well we in the NGO sector, we're hearing from donors and funders this buzzword 'innovation' - 'bring us something that's game changing'; 'bring us something that's new'; 'bring us something fresh'. And this is how we end up with projects giving iPads to newborn babies in Burkina Faso to track their health indicators. I mean I'm exaggerating but the point still stands.' (Chungong, 2015a)

One member of my Advisory Panel commented on the traditionally top-down approach of peacebuilding practice, and stated that:

> ‘The reality is that technology is just breaking down this kind of top down approach. That does not mean that those at the top will recognise these phenomena. They might still completely ignore it for years.’

He then justified this approach with the notion that ICTs have a transformative influence on ‘social dynamics’, and as such an inevitable effect on peacebuilding, because, he said, ‘we tend to think of peacebuilding as something that is plugged in into the social dynamic, but we have to think that peacebuilding is part of the social dynamic’. Another member asserted that ‘there [was] a paradigm shift on account of the technology’s use and I think it needs to be more rigorously studied’.

4.1.5 ICTs as a tool

Others view ICTs as simply a tool. Oren Murphy (2015) for example states that:

> ‘People need to realise that technology is a tool; it's a tool that can help but it's not a guarantee of success. And particularly for something like peacebuilding which is a long hard slog, which takes a lot of work. Technology can help quite a bit but it's definitely not the answer to all our challenges.’

Chris Lunch who works with Participatory Video for Peacebuilding at InsightShare summarises his view when he says that a camera is:

> ‘It’s just a piece of tech – it’s only when I let it go that it becomes something else. Then it’s up to you to frame what peace means; what does it mean to you, what does it mean to your neighbour, etc.’ (Lunch, 2016)

Conceptualisations of ICTs are important as they reflect perceptions on their transformative potential, which in turns influence the kind of practices that are designed and implemented. This is evident when Cindy Chungong (2015) asks:

> ‘So we want to now look at some of the challenges and opportunities for integrating this technology into peacebuilding. Or maybe we need to completely relook at the way that we frame peacebuilding in light of these new tools.’

She goes on to note that:

> ‘Most of the time these tools are not specifically designed for peacebuilding but simply adapted, which would call us to question some of the assumptions that we have about technologies' capacity to empower, to connect and to democratise.

> Issues of local legitimacy and value, vertical transfer of information, instead of horizontal sharing of information; assumptions about whether access to knowledge actually leads to change in behaviours and attitudes, and whether we're reinforcing power asymmetries and all these issues about security threats.' (Chungong 2015)

4.1.6 ICTs as a double edged sword

A third conceptualisation of ICTs in peacetech is as a double edged sword. In this sense new ICTs have all the potentials mentioned earlier but also present problems for peace and peacebuilding. Sheldon Himelfarb (2015) poses the question: 'how do we amplify the potential of peacetech to save lives above the potential of these same technologies that are being used for harm and hatred?'. Technology can be used for and against peacebuilding efforts said Rachel Brown at Build Peace 2014 (Brown, 2014). This is echoed by Sanana Hattotuwa in his opening of a panel discussion at Build Peace 2015 when he notes the existence of 'the dual use of technology where technology can also create greater resistance to peacebuilding' (Hattotuwa, 2015). There is also an acknowledgement that societal or other impacts can be both positive and negative with commentators emphasising the unintended consequences of using ICTs in peacebuilding contexts.

Mark Nelson (2015) states that:

> 'All of us agree that technology always has costs and benefits in a large part the ethical issues we are all facing is how to measure and compare the costs and benefits so that we are dealing with net positives.
>
> If you take anything away from this panel, it is to move away from a naive approach asking whether technology is good or technology is bad because it's always both. But there are two kinds of bad: intentional deliberate misuses like reverse targeting or misuses of transparency, and the unintended consequences, for example we killed more through traffic accidents than war. So we need to appreciate the fact that these peace technologies will come with unintended consequences that could be negative.'

Ioannis Tellidis (2015) asserts that:

> 'You have a dual character for ICTS in peacebuilding. We have the good and we have the bad and I'm really happy that most of you in your talks in your interventions say that it's both.'

These examples highlight this very binary conceptualisation, constructed on the dichotomy between good and bad uses of ICTs in peace and conflict contexts. This is a simplification that few peacebuilders would make with regards to other aspects of peacebuilding contexts, which are notorious for their complexity. Others at Build Peace see the idea of a double edged sword in the unpredictability of outcomes in peacetech. For example Sanjana Hattotuwa (2015) talks about the 'leitmotiv of unintended consequences':

> 'That for the best of intentions we might end up with the worst of outcomes. But the maturity of technology in peacebuilding processes suggests that we don't always have a handle on what it ends up being. And even though we might like to be the architects of change, there are also competing architectures of violence that compare and contrast with other views.'

There is a sense from the discussions at all three Build Peace conferences that these conceptualisations are pitted in debates around which is more valid, as each prescribes a different operational future for peacetech. I come back to this discussion in section 4.3 below. What is important to note at this stage is that each conceptualisation rests on technologically deterministic assumptions regarding the role of ICTs in peacebuilding. Technological determinism represents the view that 'a given technology will produce predictable outcomes' (Halford et al., 2010, p.2) and has been widely discredited in the literature as a descriptive and explanatory mechanism for the role of technologies in society.

There is evidence in Build Peace discourse of a questioning of this linear, deterministic view. Bruno Siqueira (2016), a software engineer at the Igarape Institute in Brazil, for example starts off his Dialogue presentation by stating that technology is 'not a silver bullet; it cannot solve all the problems; it's just a new way to deal with old problems'. In her part of the Dialogue, Professor Diana Chigas (2016), Tufts University and former co-director of CDA Collaborative Learning warns against the dangers of viewing technology as a silver bullet as a substitute for strategic thinking. Others highlight other processes at play that contribute – or not – to the transformative potential of ICTs in peacebuilding. Philip Thomas (2015) whose experience is in political dialogues and negotiations notes that:

> 'Those [tools] are powerful in polarised context to the extent that they are situated in a broader, coherent theory of change. It's not the technology alone that's going to bring the change. In many other places that I've been and I might mean in a deeply divided society, it is putting together a group of what we would

> call champions. These people are well known to local communities and are not impartial. But these people are well known in the community and they understand the technology and the change that is underway and if the endorse it, it gives legitimacy to what otherwise could be another of his or her gimmicks.'

So it would be wrong to characterise the entire peacetech discourse as naïvely technologically deterministic with a bias towards positive transformation. My point is that each conference asked the question of what the role technology has or can have in peacebuilding, which is a technologically deterministic interrogation. It follows that the answers provided in presentations and talks carry through this subtle and pervasive perspective. Indeed Sanjana Hattotuwa notes in his opening address at Build Peace 2016:

> 'Talking about CVE/PVE, there seems to be a very technocratic approach to a socio-political and cultural problem. We assume that our tools – phone, web, etc. – will immediately be able to solve the problems on the ground. Technology that cannot speak to the heart cannot bring peace.' (Hattotuwa, 2016)

In the majority of examples provided, ICTs or new technologies are the subjects in any given sentence, structured as follows: ICTs can/does/should do something. Beyond that, it is clear from the quotes presented above that the logic of empowerment, participation or scale is either not discussed or taken for granted. Only the existence and 'ubiquitous' availability of new ICTs are provided as rationale for these perceived potentials. I show in the rest of this thesis that there are many ways these processes can unfold, which is important to whether or not that empowerment can be actualised. As Beer (2009) recognises that we have had 'little opportunity so far to explore how new forms of power play out in this context of apparent 'empowerment' and 'democratization' the use of the web entails (Beer, 2009, p.986).

This call for further scrutiny is also reflected is emerging peacetech discourse at Build Peace. Ethan Zuckerman, Director of the MIT Media Lab's Centre for Civic Media, presented the idea that the relationship between technology and peace is not necessarily straightforward. Technology is inherently political, he argues, as 'when we build technologies, we have certain visions of how we expect people to use them and interact with one another' (Zuckerman, 2014). He takes the example of Myanmar, where most people came online in 2012, which has meant that the web there is essentially Facebook. Zuckerman notes the well-researched notion of 'homophily', where people have a natural tendency to 'sort themselves by their similarities' (Zuckerman, 2014). He further notes that 'Facebook is the first online business to have made homophily its business model', which might not have great consequences when Facebook is a face-book, but when it

becomes a news broker, 'it starts to be dangerous' (Zuckerman, 2014). Indeed it leads to the creation of 'echo chambers', also known as filter bubbles, where people see and receive information they already tend to agree with. He concludes that 'technology does not by itself bring people together, it may do just the opposite' (Zuckerman, 2014). In Myanmar for example, he shows that these phenomena have contributed to intensifying conflict by 'normalising' violent speech, particularly of Buddhist monks attempting to marginalise the Muslim population. Zuckerman then showcases some of the work undertaken at the Centre for Civic Media where researchers are attempting to build technological tools to help us better understand the blind spots and biases that come with highly personalised web content. For example the globe.mediameter.org project aims to provide information of what is represented in the media by the different communities of the Boston area, and what is not. Another example is the terra-incognita.co, a Chrome plug-in that records the cities referenced in the news articles a user reads, and every time another tab is opened, the plug-in suggest news articles about cities that have never been read about. For him this holds the hope that we might be able to create tools that allow us to 'watch, confront, and do something about' these biases. He concludes by stating that 'people make technologies; it is our responsibility to use it for peace' (Zuckerman, 2014). More recently Sanjana Hattotuwa notes that:

> 'Technology and its uses… need to be interrogated through a range of lenses that problematize the assumption that its mere introduction leads to progressive, peaceful change for all.' (Hattotuwa, 2015)

However there are only few examples in Build Peace discourse on peacetech where this kind of problematisation occurs. Where there are conversations about whether or not ICTs are neutral tools, these fall short of either moving beyond determinism or providing further insights into how this came to be. For example Cindy Chungong (2015):

> 'There is also the issue which I thought was very interesting between peacebuilding as a political act and maybe one of the big challenges that we've seen in peacebuilding programmes is that people are reluctant to accept that. A lot of peacebuilders tend to think of themselves as neutral, and that's one of the reasons we embrace technology because, we see technology as neutral, we are neutral hurray it goes together. But that's often not the case and one of the issues is that we take technology as far as it can go neutrally. So we say will provide the platforms for people to have access to information, but then we don't take the next step which is to support people to be able to analyse and mobilise around this action because that is a very political act.'

Ioannis Tellidis (2015) asserts that:

> ‘There's different conceptions, different visualisations of peace by different actors. But one thing we can agree on, is that peace as well as peacebuilding, is a political act. From of peace and conflict studies point of view, peacebuilding is a political act. So if you combine it with the ontology of ICT is as tools, ICTs become political tools. And in some sense ICT is can change - they do have some positive political dealings with peacebuilding – they can change the status quo they can change the power plays as we want to change them.’

Socrates Stratis (2015) states that ‘technology is not neutral at all. It has hidden programs and they are absolutely political’. He describes his project, Hands on Famagusta, in the following terms:

> ‘We look at the web platform as a project (with actors, and users, adaptive communications with controversies and negotiations, means and ends; a political action. Technology is seen as an active agent with an important role to play in the creation of the commons for Cypriot civil society, with a lot of dynamic hidden programs that keep getting adjusted.’

Dirk Helbing, Professor of Computational Social Science at ETH Zürich similarly argues that the Brexit campaigns and American presidential elections raise the question whether people are increasingly becoming controlled by hidden algorithms and personalised web technologies (Helbing, 2016). On the one hand therefore the view of ICTs as neutral tools implies a view where some level of agency is granted to ICTs. At the more radical end of this line of thinking is Stratis’ adoption of an ANT perspective on the role of ICTS as active agents in the Cypriot peacebuilding context. This view is in line with the deterministic assumptions outlined above where ICTs impact peacebuilding contexts almost independently from practitioners and other actors. All of these understandings, motivational assumptions and conceptualisations however fail to provide much empirical evidence, which is the purpose of the following Chapter on the implementation of peacetech practices. Another point made in discourse relates to the technical aspect of ICTs themselves, the code and algorithm that may not necessarily be well understood yet important in peacetech practices. The conceptualisation of affordances I propose in this thesis captures these dynamics effectively, as I begin discussing in the following section.

4.2 Materials and competence of peacetech practice

After characterising ICTs as 'ubiquitous' and 'easy to use', presenters at the Build Peace conferences highlight different 'qualities' or aspects of new technologies that can or do support peacebuilding transformation processes. In this sense, they are effectively describing certain *affordances*, which I defined in Chapter 2 as the possibilities offered for action, even though no commentator refers to this term.

A first one is the use of *data* to generate information and knowledge as part of the reasoning behind some of the claims presented above (Mancini & Perry 2014). Commentators have focused on data generation, gathering or visualisation as instrumental in making their empowerment (Mancini and Perry 2014), participation (Campbell et al. 2014) or scale (Nelson 2015) arguments. Andrew Dunbrack, UNICEF, describes their partnership with the Harvard Humanitarian Initiative:

> 'The partnership had two key objectives. One was in a participatory manner, trying to figure out how to measure the changes we were trying to achieve. And then the second was how to use technology to build an effective and simple way to collect that information, take those measurements and then repeat that over time.' (Dunbrack, 2015)

Cindy Chungong (2015) adds that for her, the interesting element here is ' technology's capacity to help us measure change over a period of many years because a lot of evaluations measure immediate results'.

For Patrick Meier (2015) new technologies can contribute to countering prevailing narratives by providing a different perspective directly through UAVs aerial views and through algorithms that can infer new types of data from them. This idea of bringing to the (peacebuilding) table new narratives, or different voice is prevalent in the participation discourse described above, leveraging a *communication* affordance of ICTs, which includes information sharing from different sources.

Paula McFeteridge's (2016) Streets of Belfast App she says is about 'giving voice to the silent' and immerse users in the different perspectives of the conflict in terms of conflict actors but also across generations in and around the context of Northern Ireland. Muctar Hersi (2015) with PDRC talks about how his organisation use ICTs to 'create opportunities for other people to have a voice, to let the people know what the government wants and what they want' in the Somali region of Puntland. Aaron Schneyer (2015), CEO of Heartbeat FM, shows that his organisation uses ICTs and music to 'amplify the voices that are not heard in the community' in the Middle East. Valerie Oliphant (2015) notes that

'SMS blasts that were peace messages encouraging people to exhibit peaceful behaviours' were very well received and successful according to their evaluation. Socrates Stratis and Esra Can Akbil (2015) describe how their interactive Hands on Famagusta website provides communities in Famagusta, Cyprus, with possible 'alternative representations of a divided territory'. All these peacetech practices seem to make use of the communication and information sharing affordances of ICTs.

The Hands on Famagusta website, as Stratis and Can Akbil (2015) argue, also provides a safe, *alternative space* for people to engage with such imagined alternative representations. This affordance of ICTs and the web resonates with many other commentators. Schneyer (2015) describes using the web to 'create spaces for musical cooperation between borders and across borders which otherwise would not be able to be crossed' between Israeli and Palestinian territories. Muctar Hersi (2015) emphasises that 'this technology that we are using creates opportunities to break the silos and enable dialogue across communities' referring to the inclusion of the Somali diaspora in PDRC's local projects and film screenings. Miguel Varela of MediatEUr describes their platform 'that allows dialogue facilitators [in the Ukraine] to share the work that they do and tell each other what issue they are addressing', where the 'goal is to help all dialogue actors connect with each other and have a better understanding of what matters to communities in the Ukraine' (Varela, 2016). As such the alternative space provides greater opportunities for contact, dialogue and collaboration.

Finally Dalia Haj Omar, a Sudanese activist describes how Sudanese youth leveraged ICTs to *mobilise* against an oppressive regime:

> 'In 2009 when Sudan was about to have its first national election in 24 years, young people took it upon themselves to undertake voter education to overthrow the national congress - very courageous – they called their network Girifna.
>
> At that time they were advised against registering as a civil society organisation; that meant less freedom - because the oversight body is like state security.
>
> So this movement operated without offices, with a virtual presence that used social media a lot and were very decentralised and even reached diaspora youth. International civil society was scared to support such an organisation overtly saying they wanted to overthrow the regime, but diaspora youth around the world provided a wide support base. Girifna managed to change the political narrative across the country, about issues that were not discussed, for example violence against minority ethnicities in universities, or the story of detainees. In 2015, they won the Vaclav Havel award for creative dissent.' (Haj-Omar, 2015)

Philip Thomas (2015) recognises this is not yet widespread but acknowledges the potential when he says:

> 'I am wondering what it would look like to have technology truly mobilise and empower the voices of citizens.'

The framing of affordances presents the advantage of bridging the aspirational elements of discourse presented in the motivational assumptions of empowerment, participation and scale above. As a descriptive tool it allows the analysis to move beyond a uniform assessment of ICTs that seems overly broad at times, and too granular a view of specific technologies that would make a construction of peacetech as practice very hard. But the concept of affordances also uncovers more specifically how ICTs are used for what purposes. I come back to this idea at the end of Chapter 5. Recalling Nicolini's assertion above that:

> 'to understand the accomplishment of a practice one has to take notice not only of its 'sequence' but also of the landscape of the ends, purposes and motivations that made one happen while the others remain mere possibilities' (Nicolini 2012, p. 168)

A framing focused on the affordances of technologies provides a way to explore how practices are enacted on the ground, providing the empirical data needed to move beyond the broad aspirations that currently characterise peacetech meanings. As a member of my Advisory Panel remarked:

> 'There is a huge disconnect between the amount of information that new technology provides and its potential and actual change. There's all this information out there and there are all these platforms and we're forever engaging civil society groups in analysing these early warning reports and all of this but very, very, very little evidence to show that it's actually being taken into account, into the decisions that are being made by the people who have the power. There is this huge disconnect between what technology can do, the information that they can provide and the spaces for engagement and translating that into actual action and change. I think this is part of the reason why people get what we could call I guess, user fatigue. Is that NGOs are constantly telling them there's this new platform, you can do this and this and this and this. They engage and they talk to people and they meet people from all over the world and they learn how to use all these tools. It's fancy and it's cool and they're getting all the money from the donors. Then five years later have you actually made any

> tangible improvements in government. The information is out there but are the people who have the power to do something about it taking it into account?'

Little is explicitly stated regarding the competences that constitute peacetech. In this thesis competence include rules, skills that come from practical and general understandings. For Schatzki practical understanding is a 'knowing that derives from being a competent member of a practice', and general understanding refers to a 'reflexive understanding of the overall project people are involved in' (Schatzki, 2005)

Although it is not explicitly framed as such in peacetech discourse, most illustrative examples provided in support of the perceived potentials – or risks – of ICTs for peacebuilding refer to peacebuilding projects. Girifna is the only example that represents a movement without any external funding. As such the skills deemed important for peacetech remain similar in nature to those of traditional peacebuilding practitioners. Rachel Brown (2014) for example recognises the growing use of ICTs in peacebuilding contexts, but contends that traditional project design principles still apply, even though the use of technology does seem to present specific challenges. For a start she warns against using technology as the main focus of a project, but rather points to the need for evaluating such a use and its relevance in the wider context.

Chungong (2015) notes that peacebuilding as a field has been slow to adopt new ICTs in parts because of the need to follow a principle of Do No Harm (DNH):

> 'We are kind of behind the curve but at the same time there is an interesting debate to be had about our responsibility to be cautious and to take our time, because you know we have to respect those principles of do no harm, and we talked about issues around unintended consequences.'

Rachel Brown (2014) focuses on the importance of context, the need to identify 'appropriate' technology in terms of project goals and context; the question of sustainability beyond a specific project, and the risks and ethical implication of using ICTs, particularly through the use of a 'Do No Harm' framework, and finally the necessity to measure impact.

So far in this Chapter I have presented my analysis of emerging peacetech discourse by identifying its various constitutive elements. In the following section I bring these findings together to construct a discursive picture of peacetech practice-as-entities and the implications this has for this thesis and its research questions.

4.3 Discursive construction of peacetech practice

This analysis of emerging peacetech discourse allows me to identify some of the elements that constitute peacetech practice.

In a first instance the meanings of peacetech practice do not seem to be uniform. This is perhaps unsurprising at this emergent stage of peacetech's evolution. They are summarised in the table below that represents a matrix of the motivational assumptions used to justify the desirability for peacetech practices and the varying conceptualisations of technologies identified in the analysis.

Conceptualisation of ICTS / Motivations	Game changer	Tool	Double edged sword
Empowerment	Local populations are empowered to build peace.	Peacebuilding practitioners are empowered to do better peacebuilding.	Those working for and those working against peace are equally empowered.
Participation	Direct participation from local populations in peace processes.	Peacebuilders can reach more people.	Survey fatigue, trust
Scale and efficiency	For profit peacetech industry can be developed.	Peacebuilders can reach more people.	Monitoring and surveillance

Table 3 Summary of peacetech's motivational assumptions

I have argued that despite evidence from some members of Build Peace calling for a problematisation of these motivational assumptions, all three conceptualisations of ICTs rest on technologically deterministic assumptions. Conceptually we know from Chapter 2 that this is questionable, at best, as an explanatory framework for the transformative potential of technologies in society. This is important not only because technological determinism has been successfully critiqued as an inadequate – or at the very best incomplete - interpretation of the interplay with technologies and social change. Indeed decades of peacebuilding empirical and theoretical literature show that when peacebuilding practitioners are empowered, local populations often are not. What these considerations show, is that the motivations for using ICTs in peacebuilding through peacetech remain aspirational – perceptions on the potentials of technologies – rather than grounded in empirical evidence that may point to the contrary. The concept of affordances I proposed for this thesis allows me to include both these aspirations as well

as which were actualised – or leveraged – on the ground. What actually happens with peacetech in practice, and what processes and mechanisms lead to what motivational assumptions being enacted are addressed in all three remaining empirical Chapters of this thesis to provide a deeper understanding of the mechanics of peacetech.

My analysis of Build Peace discourse on the materials of peacetech already hints to evidence that contradicts the deterministic assumptions above. Whereas technologies are often characterised as 'ubiquitous' and 'easy to use', most commentators refer to projects designed and leveraging one or more technological affordances of ICTs such as data, communication, mobilisation and networking (alternative space). In the latter characterisation, ICTs have not made these projects happen. Rather they were integrated into practice for the purposes that make up its meanings and through competences that are not explicitly stated.

Indeed little is said of the technical skills necessary to 'do' peacetech, or as Schatzki would refer to them, practical understandings. Rather the focus is on peacebuilding project design understandings and skills, such as the application of a Do No Harm framework and the integration of monitoring and evaluation considerations (Chungong 2015, Brown 2014).

How do these elements combine in peacetech practice? Peacetech is a practice that uses ICTs in data, communication, mobilisation or networking projects and programmes in order to empower local populations and peacebuilding practitioners; to foster greater participation and reach; and to achieve larger scales of operation more efficiently. This is made possible by the ubiquitous and easy to use nature of ICTs and should rest on 'good' peacebuilding project design principles such as Do No Harm.

This discursive narrative of peacetech introduces some tensions I have alluded to before. Does it mean that there are several peacetech practices? If so, are they compatible? Because emerging peacetech discourse is based more on aspirations than empirical evidence, it is difficult to answer these questions based on the analysis so far.

These tensions are moreover illustrated in the resulting construction of the peacetech practitioner imply from this narrative. Nicolini shows that a practice lens means 'practice and practitioners emerge together' (Nicolini, 2012, p.178). The peacetech practitioner is constructed in Build Peace discourse as possessing the ability to choose relevant and appropriate technologies for various contexts. Cindy Chungong (2015) for example says:

> ‘There is this balance to be struck between looking for the best tools to achieve our aims in peacebuilding most efficiently, and also our responsibility to at the very worst do no harm in the context that we are intervening in.’

Rachel Brown (2014) similarly focuses on the importance of context, the need to identify ‘appropriate’ technology in terms of project goals and context; the risks and ethical implication of using ICTs, particularly through the use of a ‘Do No Harm’ framework and the necessity to measure impact, and the question of sustainability beyond a specific project. As such and in line with the framework adopted in this thesis this first construction could apply to any peacebuilding actor. However further evidence shows that there is a parallel construction of the peacetech practitioner as an outside intervener.

Socratis Stratis (2015) for instance asks:

> ‘One of the key questions here is how many of us are generating projects in the countries where we come from? Being from Cyprus we are emerged inside a conflict which we’re trying to address, and it would be really interesting if the technologies that were talking about were produced within those kinds of environments as opposed to outside of these environments.’

This view of the peacetech practitioner as external to the peacebuilding context is also evident in a Dialogue[21] at the 2016 Conference that saw the following exchange take place:

> ‘I worked internationally and locally, and local work is much closer to the pain; I ask myself - is it even meaningful to ‘bring them tech’ – it seems so frivolous?
>
> Bruno Siqueira: I wrestle with that too. But if there’s a chance it might contribute, then we should try it.
>
> Diana Chigas: It’s great you’re in a position to ask them whether it’s frivolous or not. As outsiders sometimes you bring something that’s innovative, but if it’s not relevant then you need to move on and do something else.’

In his reflection during another Dialogue at Build Peace in Zürich, Jonathan Stray, Data Scientist and Journalist reflects on the North – South dynamics of ICTs and peacebuilding:

> ‘most technological development happens in the North, and most of the conflicts are in the South. So there is a huge disconnect between these two communities –

[21] A plenary presentation format where two individuals discuss a topic and answer questions from the audience at the Build Peace 2016 conference.

> those working most deeply in technology and those working most deeply in conflict.' (Stray, 2016)

Later in their Dialogue, Diana Dajer, Build Peace Fellow notes:

> 'You also have to consider the kinds of expectations raised by the introduction of technology and how to live up to those expectations; thinking about sustainability means trying to not only develop a cool app, but also how can we make it sustainable in time in terms of finance, institutions and users – in terms of local ownership.' (Dajer, 2016)

This seems to show that most of the choices and considerations around ICTs in peacebuilding seem to remain the prerogative of those intervening in a peacebuilding context, rather than of local populations. This is particularly evident in the following, where UNICEF representative talking about their uReport project aptly sums this up:

> 'Because this idea that technology is blind and can reinforce existing divisions. We have almost 300,000 people recruited to uReport. That's 300,000 people whose voices we can muster we can mobilise. But then when we investigated a bit more who are these people, we realise that there was the constituencies that we were not reaching. And perhaps the profiles of those on uReport where not the constituencies that we wanted to bring to the table.' (Dunbrack, 2015)

However empowerment and participation of local populations are portrayed as key assumptions driving peacetech practice. Jonathan Stray (2016) provides a possible way forward when he adds that:

> 'Rather than thinking about building a technology to build peace as writing code, we need to be thinking about building software organisations.'

Bruno Siqueira (2016) has similarly commented that 'having technology more institutionalised might be the difference between having a project and long-lasting impact'. This seems to open the possibility for future empowerment, after some gap is filled where local populations are able to make those choices.

This Chapter has provided a discursive account of emerging peacetech practice, which highlighted underlying assumptions and motivations, existing perceptions of technologies and emerging ideas of practical and general understandings of peacetech practices that do not currently feature in the peacetech literature. But it has also raised several questions. Different motivations are presented for using ICTs in peacebuilding – does this result in different peacetech practices? Or does peacetech cater for these

different objectives? Are practitioners local populations or intervener? Does peacetech go beyond intervention or falls squarely within this model? Attention to discourse alone cannot fully answer these questions, which I now address in the following Chapters.

Chapter 5 Peacetech practice in the field

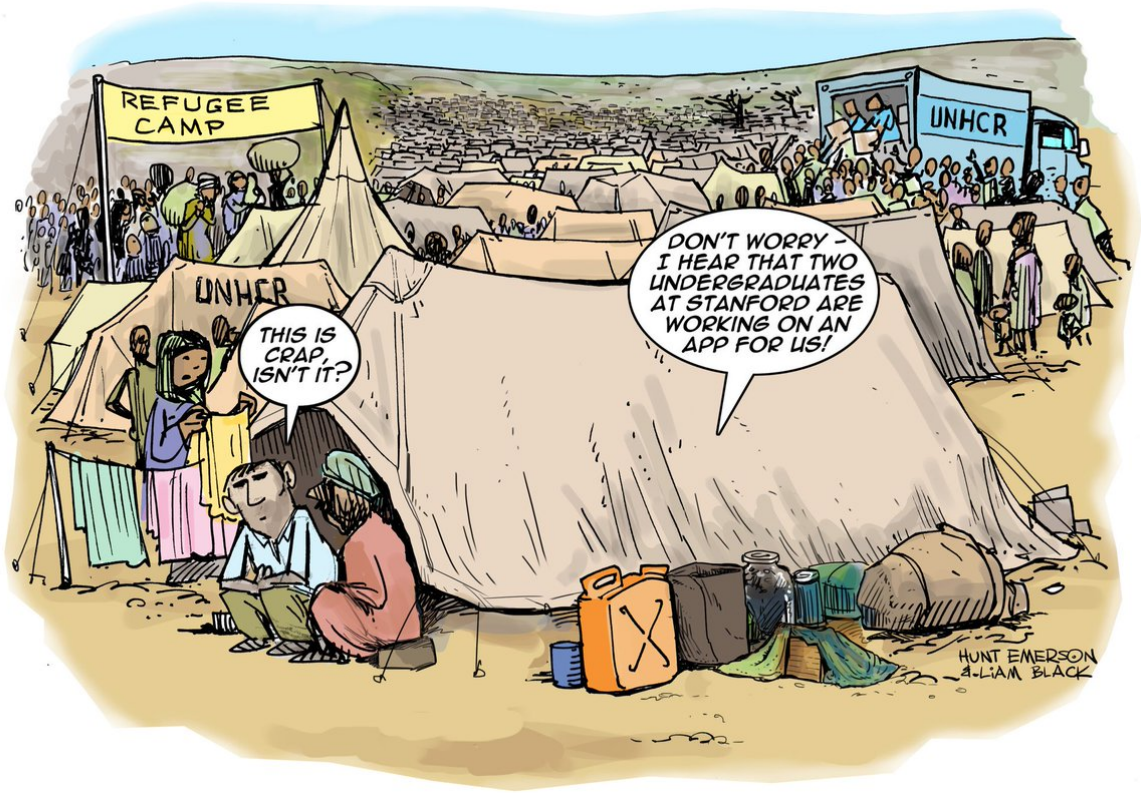


Figure 3 Credit: Hunt Emerson and Liam Black as shared by Jonathan Stray at Build Peace 2016

In Chapter 4 I outlined a discursive construction of peacetech practice that showed that the motivations for doing peacetech rested primarily on positive assumptions regarding the power of ICTs to change aspects of peacebuilding. At the most aspirational end, it was understood that ICTs would empower local populations to build their own peace, as such forsaking the need for, or a reliance on, traditional peacebuilding models of intervention. However at the same time, collective discourse at the Build Peace conferences resulted in a vague, ambiguous and at times contradictory picture of the peacetech practitioner, which warrants further investigation. Indeed decades of peacebuilding literature agree that strengthening the intervention model of peacebuilding practice often does not result in the empowerment of local populations, quite the opposite. The analysis presented in this Chapter offers a different perspective on the construction of peacetech practices-as-entities that helps address this questions. In it I follow the elements of practice – the materials, competence and meaning of peacetech – by looking at the implementation of peacetech projects from the Build Peace community of practice. I showed in Chapter 4 that in spite of the assumptions of the ubiquity and

ease of use of ICTs, peacetech practice is operationalized through projects mostly. Therefore I use the projects I collected in the Build Peace Database and four in-depth project evaluations to explore trends in peacetech with a particular focus on the technological affordances of ICTs. I explore which ones are leveraged, by whom and for what purposes; what opportunities are offered with the uses of ICTs, as well as what constraints are attached to them. In Chapter 4 I showed the different expectations of using ICTs in peacebuilding, particularly in terms of empowerment, participation and scale and efficiency. The data analysed in this Chapter provides a material counterpoint to these arguments by looking at how practice is actually implemented on the ground. It is particularly interesting because the projects of the Build Peace Database are those presenters at the conferences either worked on or discussed, thus offering a relevant material grounding for the discourses of Chapter 4. So in this Chapter I provide a quantitative analysis of the elements of peacetech practice and compare the findings from this analysis to previous ones.

5.1 Materials and competence of peacetech practice

In this section I assemble data from project information to provide a clearer picture of peacetech practices and how affordances of ICTs are leveraged for peacebuilding. There are to date 168 projects in the Build Peace Database across over 45 different countries or regions, collected around the Build Peace conferences in 2014, 2015 and 2016, from speakers' presentations, competitions, mentions in talks, or direct submissions.

88.7% of the projects featured in the Database require an Internet connection. The remaining ones are offline projects that nevertheless have an online element or presence. For example Masterpeace encourages the development of clubs globally. Clubs do not require an Internet connection, but Masterpeace's central tool is its collaborative platform, a website. On the other hand, the fact that Puntland Development and Research Centre's Mobile Audio Visual Unit does not require an internet connection is intentional in order to operate in areas that do not yet benefit from such connectivity or a reliable infrastructure. Other examples of projects that do not rely on the internet are TV shows or series such as 'Dream and Achieve Afghanistan'.

So far 48% of the projects use custom-made software, so just under half of the current sample, whereas the other half adapts existing platforms. With 27% of projects using 'social media' (and 26% a website), Facebook is the platform most used in the Database projects (see Figure 4 below).

Figure 4 Word cloud of technology tools used in the Build Peace Database projects

In terms of peacebuilding, the objectives most represented in the dataset are: behaviour change (29%), contact, dialogue and collaboration (22%) and training, education and capacity building (21%). A peacebuilding objective is defined in the Database as 'the primary goal of a project' and is often clearly stated in the project website, tagline or description. Projects were also coded by thematic area. Most projects cover the themes of reconciliation (24%), non-violent alternatives (13%), governance (12%) and youth (10%).

The stakeholders most often mentioned in peacetech projects are local populations (in 62% of the Build Peace Database projects), young people (36%), civil society (34%), peacebuilding practitioners (22%), government (18%). Women for instance are only stakeholders in 6% of the projects.

Finally, each project was assigned one or more 'technology function(s)'. As described in Chapter 3, these functions represented a negotiation between the previous work of Kahl and Larrauri and their technology functions of data processing, communication, gamification and engagement (Kahl and Puig Larrauri, 2013), and my previous work on different types of web – of data, information sharing, alternative space, management and empowerment (Welch et al., 2014). Following the development of the conceptual grounding of this thesis in the notion of 'affordances', which I use synonymously with technology function as a category, I developed four overall affordances with several sub-divisions as follows:

- Data (gathering, aggregation and visualisation)
- Communication (information sharing, more voices and new narratives)
- Networking (alternative space and management)

- Mobilisation (engagement and crowdfunding)

50% of the Database projects use ICTs to mobilise (engage). This is the most leveraged affordance in peacebuilding. It seems to correspond well with the empowerment (to act) narrative developed in my analysis of discourse on the transformative potential of ICTs.

However if we look at the aggregate levels, this is the breakdown of projects using each of the four affordances:

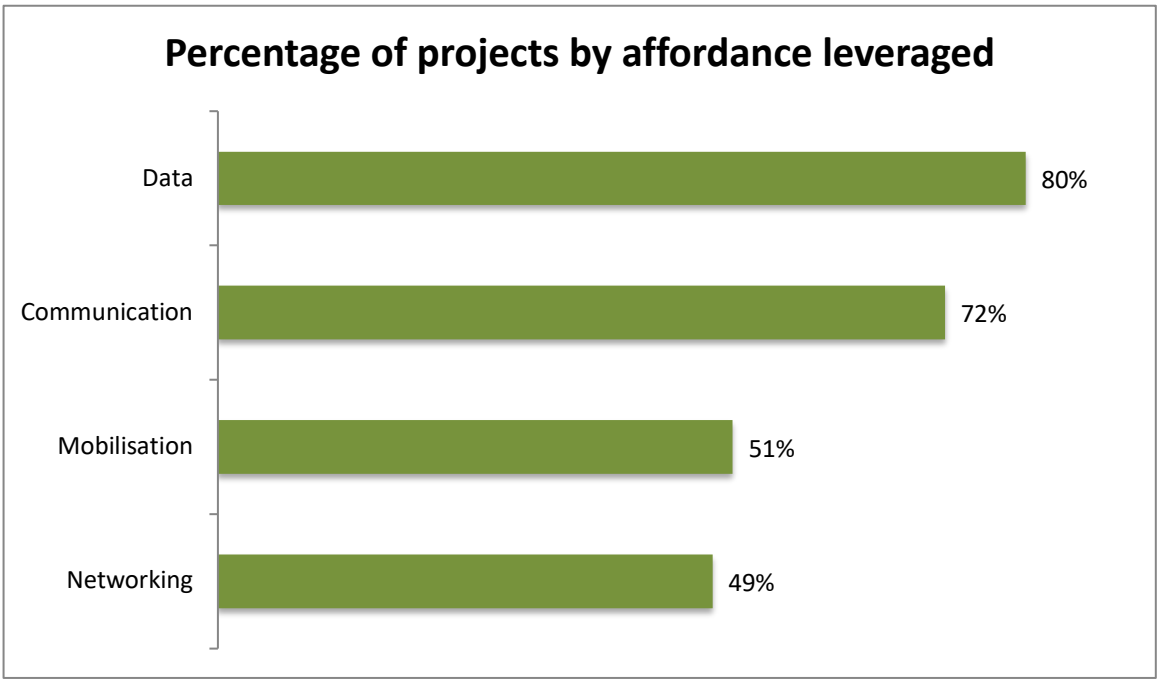


Figure 5 Percentages of Build Peace Database projects by affordance leveraged

5.1.1 Data

A first affordance of ICTs in peacetech is as a way of generating data, both in specific locations as in early warning projects, or for specific purposes such as perception surveys, or including what is referred to as 'Big Data' (Puig Larrauri, 2013; Kahl and Puig Larrauri, 2013; Letouze, Meier, et al., 2013; Hattotuwa, 2013). Data can be actively generated through crowdsourcing or surveys, or passively generated using social media data, cell phone metadata, etc. From the Build Peace Database, the software most often used in data projects is the online map (see Table 4 below). This seems consistent with Kahl and Larrauri's observation that peacetech first emerged from early warning projects that have mostly been using some form of geographic information system (GIS) to support early warning and response efforts (Kahl and Puig Larrauri, 2013).

Table 4 Top five software types used in *data* projects

Software	%

Online map	30%
Website	28%
Crowdsourcing platform	20%
Social media	13%
Big data	3%

56% of projects using technology created specifically for the project, the highest rate across the four kinds of affordances. According to Table 5 below, the peacebuilding objectives pursued in the projects were mostly early warning, then behaviour change and influencing policy.

Table 5 Top five peacebuilding objectives for *data* projects

Peacebuilding objective	
Early warning & response	23%
Behaviour change	16%
Influencing policy	16%
Conflict Analysis	11%
Contact, dialogue & collaboration	11%

Examples of projects that are leveraging the data affordance for peacebuilding are the Uwiano platform for peace, a national conflict prevention platform in Kenya that aimed to collect data and share information to prevent and respond to conflict before, during and after elections.[22] 'Eyes on Darfur' is a website launched in 2006 by Amnesty International and that uses high-resolution satellite imagery to provide 'unimpeachable evidence of the atrocities being committed in Darfur'.[23] The Open Situation Room Exchange was created by the PeaceTech Lab and uses data from the GDELT[24] and Armed Conflict Location and Event Data Project (ACLED)[25] databases to support peacebuilders, donors, researchers and policy-makers by providing 'critical insights into economic, social, and political conditions on the ground in conflict zones globally'.[26]

The promise of data for peacebuilding is evident in Mancini and Perry's view on the role of technology for conflict analysis, when they argue that increased ICTs penetration – both web and mobile-enabled – has led to a change in the type of information available, and everyday citizen's ability to shape narratives with that information (Mancini and Perry,

[22] For more information see http://www.ke.undp.org/content/kenya/en/home/operations/projects/peacebuilding/uwiano-peace-platform-project.html
[23] For more information see http://www.amnestyusa.org/research/science-for-human-rights/eyes-on-darfur
[24] For more information see https://www.gdeltproject.org/
[25] For more information see https://www.acleddata.com/
[26] For more information see http://www.osrx.org/

2014). There are however a number of constraints related to ICTs data generating and gathering potential. A first is uneven access to the technologies, for generations, gathering, as well as analytical purposes. Letouzé et al. argue that 'unequal access to technology might reflect conflict fault lines', resulting in 'non-representativeness of the data' (Letouze, Meier, et al., 2013, p.22). A second relates to the actual impact of the availability of this data. Indeed Mancini notes that 'political decision-making processes are still rarely influenced by existing conflict-prevention and early-warning systems' (Mancini, 2013, p.2). Third, because of the sensitive nature of the data, particularly in conflict zones, is a mixture of security, privacy and ownership concerns. Indeed the provision of digital data can pose a risk to the individual reporting on a particular incident or, if the flows of information are more or less open, it can cause panic or retaliations (Puig Larrauri, 2013; Musila, 2013; Letouze, Meier, et al., 2013; Muggah and Diniz, 2013). Even when these are not open, questions of security or infrastructure integrity might mean that it can be accessed for nefarious intents. And finally even if there is no breach of the data stores, the highly complex governance contexts in post-conflict settings mean that data ownership issues can be intimately related to security concerns. For peacebuilding, the questions of who owns the data, its gathering and analytical infrastructures and processes are intimately linked to notions of legitimacy and dynamics of external interventions, when for example an international donor states or organisations might be better equipped to action the data but would thus result in hindering the legitimisation of local actors (Musila, 2013, p.54).

These considerations have already been discussed in the literature and are reiterated in some of the peacetech discourse. But a closer look at the Build Peace Database provides further insights. Whereas 'local populations' represent key project stakeholders in 80% of data projects, young people, a traditionally marginalised group in peacebuilding are included in only 9% of the projects (women as a group do not make the top five) but civil society, peacebuilding practitioners and governments are featured in a higher number of cases (see Table 6 below).

Table 6 Top five stakeholders involved in *data* projects

Stakeholders	
Local populations	80%
Civil society	61%
Peacebuilding practitioners	38%
Government	36%
Young people	9%

The data so far does not tell us much about the participation or empowerment narratives, but when considering that local organisations are implementing organisations in only 13%

of data projects (see Table 7 below), it would seem to suggest that data projects remain within a traditional interventionary model of peacebuilding, implemented by external interveners as with other peacebuilding work.

Table 7 Top five implementing organisation types for *data* projects

Implementation organisation type	
Non-profit	22%
Academic	13%
Local NGO	13%
Private company	13%
International NGO	11%

5.1.2 Communication

The second most popular affordance is communication. It includes sharing information, facts or stories from various perspectives, bringing new voices into the peacebuilding process and presenting new or alternative narratives besides those that are prevalent in a particular context. Many tech-enabled peacebuilding projects rely on this possibility. In the Build Peace Database, social media is the software used most frequently in communication projects, with websites and digital games (see Table 8 below). 52% of communication projects' technology has been created especially. Examples include projects aiming to share conflict stories to promote healing and reconciliation, such as Interpeace's 'Mobile Audio-Visual Unit' in Somalia. There in order to foster conversations around issues of common interest in remote rural areas of Puntland in Somalia, the Puntland Development and Research Centre uses inflatable screens to show documentary films that serve as a springboard for community dialogues.[27] 'Nuba Reports' is a citizen journalism website and associated social media presence set up to report on the rebellion in the Nuba Mountains and its repression by the Sudanese government, which to this day has banned national and international journalists and reporters from entering the region. Instead the Nuba Reports team provides equipment, training and a website which enables these stories to reach international media outlets.[28] Border Lives, another website, is a 'storytelling project that has produced six short films capturing people's lives and experiences along the border region between Northern Ireland and the Republic of Ireland during the years of 'The Troubles', and right up to the present day'.[29]

[27] For more information see http://www.interpeace.org/2012/09/puntland-using-films-for-peace/
[28] For more information see https://nubareports.org/about-us/
[29] For more information see https://www.facebook.com/BorderLives

Table 8 Top five software types used in *communication* projects

Software	
Social media	32%
Website	30%
Digital game	14%
Online map	13%
Crowdsourcing platform	10%

41% of communication projects aim to change behaviours in peacebuilding contexts (see Table 9 below). This is by far the most common communication objective, with contact, dialogue and collaboration. This supports the idea presented in the previous Chapter that using new ICTs to foster greater participation by bringing new voices or showcasing alternative narratives are in fact represented in practice through projects leveraging ICTs' communication affordances in this way.

Table 9 Top five peacebuilding objectives for *communication* projects

Peacebuilding objective	
Behaviour change	41%
Contact, dialogue & collaboration	21%
Influencing policy	12%
Training & education	12%
Early warning & response	6%

As with data projects and following traditional peacebuilding activities, peacetech communication projects include local populations as a stakeholder in the vast majority of cases (73% - see Table 10 below). However a notable difference in key stakeholders of communication projects is that government and peacebuilding practitioners are not as prominently targeted as young people, the latter a traditionally marginalised group in peacebuilding activities.

Table 10 Top five stakeholders involved in *communication* projects

Stakeholders	
Local populations	73%
Young people	36%
Civil society	22%
Government	17%
Peacebuilding practitioners	12%

Another interesting point to note is in the types of organisations implementing communication projects, where local NGOs are implementers in 19% of the projects, the highest across affordances.

Table 11 Top five implementing organisation types for *communication* projects

Implementing organisation type	
Non-profit	21%
Local NGO	19%
Private company	17%
International NGO	14%
Academic	10%

This would tend to confirm the potential for increasing both local participation in peacebuilding and including traditionally marginalised groups in peacebuilding activities. However several constraints have been highlighted in the literature. First sharing information in volatile environments, besides retaliations, can potentially cause panic among the population (Letouze, Vinck, et al., 2013, p.23). Moreover information shared might in fact exacerbate existing tensions and lead to renewed or further conflict. This occurred in Kyrgyzstan during the 2010 election which saw the spread of violence following the upload and spread of YouTube videos (Matveeva, 2013, p.63). The Kyrgyz example also points to another important issue, which concerns the authenticity of the message or information shared. Indeed Matveeva argues that the same YouTube videos were used by both sides of the 2010 conflict to accuse the other of atrocities, and that the footage was in fact of another, earlier conflict (Matveeva, 2013, p.63). In the current climate of fake news spread online this has been highlighted many times over and is sadly highly relevant. Indeed in peacebuilding contexts it could affect the existence of trust within communities. And so the data from the Build Peace Database shows congruence between discursive potentials of ICTs for peacebuilding in terms of communication and practical implementation of communication projects in line with the narratives of inclusion and participation. How this potential can affect peace and peacebuilding at the broader levels remains to be seen.

5.1.3 Mobilisation

A third affordance is mobilisation. In the Build Peace Database it is split between ‘engagement’ and ‘crowdfunding’. Crowdfunding showed promise at the time the Database was set up in late 2013, but no projects have fallen under that category. So in the rest of this thesis I use mobilisation and engagement interchangeably to mean ways

to influence people into considering or taking an active part in a project, issue or community. MEET for example is 'an innovative educational program bringing together the next generation of Israeli and Palestinian young leaders to take action towards creating positive economic, social and political change in their communities'.[30] The program lasts three years and takes place in the region – either in Jerusalem or Nazareth – and participants are supported beyond academic hours by an alumni network and Venture Lab. Mahallae is an online civic engagement platform in Cyprus. Mahallae means 'neighbourhood' in both Greek ('mahalla') and Tukish ('mahalle') and many other languages in the Euro-Mediterranean region. It was initially intended to become a place to foster innovation among Cypriot civil society and was used in 2015 to support a UNDP innovation call that showcased the following winners: i-Vee, a mobile game for encouraging volunteerism; YuBiz, an online platform to help young entrepreneurs kick-start their business; WE-ME, a mentorship platform and mobile app for women; socialholic typewriter, a collaborative storytelling platform for micro-fiction; and Hands on Famagusta, a hybrid platform for developing a future vision for the Famagusta region.[31]

In the Build Peace community, the most popular software used in mobilisation projects are digital games, social media and websites (see Table 12 below). The fact that 52% of the mobilisation projects had technology created for them specifically might be a reflection of the large number of games or apps created for a variety of peacebuilding projects such as those featured in the PeaceApp competition run by the UNDP and UN Alliance of Civilisations (UNAOC). The most common objectives for which this affordance is leveraged are behaviour change, contact, dialogue and collaboration and training and education (see Table 13 below).

Table 12 Top five software types used in *mobilisation* projects

Software	
Digital game	31%
Social media	30%
Website	29%
Crowdsourcing platform	10%
Collaborative platform	8%

[30] For more information see http://meet.mit.edu/
[31] For more information see https://mahallae.wordpress.com/2014/06/24/announcing-the-mahallae-challenges-winners/

Table 13 Top five peacebuilding objectives for *mobilisation* projects

Peacebuilding objectives	
Behaviour change	26%
Contact, dialogue & collaboration	25%
Training & education	21%
Influencing policy	10%
Early warning & response	7%

In terms of stakeholders of mobilisation projects, local populations and young people feature most often in 61% and 44% of projects respectively (see Table 14 below). Mobilisation is the affordance most targeted to young people in the Build Peace Database, compared to data projects for example, where young people were stakeholders 9% of the time, communication 36% of the time and networking 40%.

Local NGOs have a significantly more prominent implementation role than international ones in mobilisation projects, but non-profit, who are mostly international, keep the lead as implementers of peacetech projects, as shown in Table 15 below.

Table 14 Top five stakeholders involved in *mobilisation* projects

Project stakeholders	
Local populations	61%
Young people	44%
Civil society	31%
Peacebuilding practitioners	20%
Government	12%

Table 15 Top five implementing organisation types for *mobilisation* projects

Implementing organisation type	
Non-profit	36%
Local NGO	17%
Private company	11%
International NGO	8%
Academic	7%

Figure 6 Results of the SCORE survey administered in June 2015 by SeeD

As with communication projects, this data seems to support the perceived inclusive potential of ICTs for peacebuilding. However actual figures on participants remain hard to obtain. With the case of Cyprus, the survey administered by the SCORE team in June 2015, which included some of my questions, as described in Chapter 3, provides an interesting perspective.

The results shown in Figure 6 above are statistically representative of the Greek and Turkish Cypriot populations and show that only a very small portion of both have heard of or used peacetech platforms such as Mahallae, and the winners of the UNDP challenge. Whereas a far higher percentage of respondents in the Turkish Republic of Cyprus had heard of those platforms, only 9% said they had used any one of them, with 5% for the Greek Cypriot respondents. And so besides questions of access, anonymity, privacy and data security already highlighted in the literature (Welch et al., 2014). Questions remain on the actual reach of those initiatives. This seems to reinforce what Murphy (2015) stated at Build Peace 2015 in his remarks on the fact that the opportunity to participate would not necessarily actualised.

5.1.4 Networking: management and alternative space

A final technological affordance of ICTs for peacebuilding is as a way to network or manage. Brinkerhoff emphasised such a use of the web by the Afghan-American diaspora in finding and dispatching expertise to complete local projects, while the use of social media to organise protests in Egypt and other places has also been widely documented (Brinkerhoff, 2007, p.195; Zuckerman and Leujeune, 2014). Related to this networking as management affordance is that once people are connected in digital networks, activities unfold in an alternative space to the physical, geographical space inhabited by those in conflict-affected contexts. This sees ICTs and the web as more than platforms allowing information to spread and be shared to a sphere where activity is undertaken and has meaning in and of itself independently from – though not unrelated to – the physical sphere. For example Soliya's *Connect Program*, which gathers students from America and the Middle East in specifically designed 'chat room' moderated by trained experts, provides a good illustration.[32] The experience of these students takes place jointly in this alternative space and individually in their physical spaces. Turner for instance argues that the web provides a space where the 'unspeakable' can be expressed among the Burundi diaspora (Turner, 2008). The Peace Factory has used Facebook to create communities such as 'Israel-Loves-Iran' where people could post messages and pictures of their desire

[32] See more at http://www.soliya.net/?q=what_we_do_connect_program

for peace with the other side; 'Friend me for Peace' was another of their Facebook initiatives, where people from both sides of the Israeli-Palestinian conflict could sign up to the page and ask the 'other' side to friend them on Facebook to encourage encounters and communication when physical meetings are not possible.[33] Games4Peace used the online game Minecraft to encourage groups of Israeli and Palestinian children and youth to play together during 'peace weekends'.[34] Finally in the context of Georgia and the tense relations following conflict is Abkhazia and South Ossetia, Elva Community Engagement built a game called 'Peace Park' where players are challenged to restore peace in a communal park by understanding their different interests and making wise decisions.[35]

In the Build Peace Database only 45% of project have technology created especially for networking projects, the lowest of all affordances. Perhaps this is not surprising with the wide availability of existing social media platforms, the most common software type in networking projects (see Table 16 below). The most frequent peacebuilding aim for projects leveraging the networking affordance of ICTs is contact, dialogue and collaboration, followed by behaviour change and training and education as shown in Table 17 below.

Table 16 Top five software types used in *networking* projects

Software	
Social media	34%
Website	31%
Digital game	21%
Collaborative platform	12%
Online map	9%

Table 17 Top five peacebuilding objectives for *networking* projects

PB objective	
Contact, dialogue & collaboration	42%
Behaviour change	22%
Training & education	16%
Influencing policy	7%
Capacity Building	6%

[33] For more information see http://thepeacefactory.org/israel-loves-iran/
[34] For more information see http://gamesforpeace.org/
[35] For more information see http://peacepark.elva.org/

Local populations, young people and civil society are (in that order) the most represented stakeholders in networking projects (see Table 18 below), which again supports the peacetech narrative around participation. However non-profits and international NGOs are far more prominent implementers than local NGOs with the former implementing a combined 48% of networking projects and the latter only 15% (see Table 19 below). This highlights a discrepancy I identified in Chapter 4 regarding the narratives of empowerment that sees the promise of ICTs as the ability to move beyond an interventionary model, yet evidence shows that peacetech practices tend to reproduce, rather than transcend it.

Table 18 Top five stakeholders involved in *networking* projects

Stakeholders	
Local populations	55%
Young people	40%
Civil society	24%
Peacebuilding practitioners	19%
Government	13%

Table 19 Top five implementing organisation types for *networking* projects

Implementing organisation type	
Non-profit	33%
International NGO	15%
Local NGO	15%
Social enterprise	10%
Academic	9%

The main issue related to networking affordances is that it can be used in this way to increase efficiency by all parties in a conflict-affected region or by authorities in cases of oppressive regimes for example. In this sense, the management capabilities of ICTs have the potential to increase efficiency for those engaged in peacebuilding activities, but also those whose activities might represent a threat to stability, intentionally or not (Boege et al., 2009, p.611; Nussbaum et al., 2012, p.566; Zuckerman and Leujeune, 2014). Commentators at the conferences also picked up on this idea (see (Saad, 2015; Tellidis, 2015) for example). There is also the question of what happens – who owns, has access to, can use – the data generated by the activities that unfold in the digital space, especially important given the large number of external implementers for these projects. Hattotuwa already warned about the risks of relying on private companies such as Facebook for any peacebuilding activities in light of the lack of accountability and

recourse by users. But even bespoke projects have similar issues when the data is owned and managed by an external intervener.

5.1.5 Competence

The details of the competence used or required for peacetech are not laid out in detail anywhere, and barely mentioned in the literature. One possible reason for this could stems from the assumed ease of use and low barriers to entry of new ICTs even in conflict or post-conflict contexts. These assumptions are often highlighted in the literature (Kahl and Puig Larrauri, 2013; Tellidis and Kappler, 2015) and have been mentioned in peacetech discourse. As such the skills required to 'do peacetech' are considered straightforward and easy to learn. However as peacetech is emerging within peacebuilding practices and as presented earlier, peacebuilding practitioners such as Rachel Brown remind us that 'traditional peacebuilding programming skills' should apply. The idea there is then to integrate new technologies in peacebuilding programming in a responsible and appropriate manner, as highlighted by a range of Build Peace conference presenters (Brown 2014, Chungong 2015, Kahl & Larrauri 2013). USAID provides a starter's guide in the form of its Digital Principles, endorsed by a long list of organisations active in peacetech and the Build Peace community, including Build Up.[36] These principles are illustrative of what Schatzki referred to as practical understandings that come from being a 'competent member of a practice' (Nicolini, 2012, p.165; Schatzki, 2005)

[36] See https://digitalprinciples.org/endorse/endorsers/ for details of organisations endorsing the Digital Principles

Figure 7 Types of custom-made software in Build Peace Database projects (source: buildpeacedatabase.org)

The first Principle is 'Design with the user: user-centred design starts with getting to know the people you are designing for through conversation, observation and co-creation'[37]. Other principles include: understand the existing ecosystem; design for scale; build for sustainability; be data driven; use Open Standards, Open Data, Open Source and Open Innovation; reuse and improve; address privacy and security; be collaborative. These show that peacetech practices demand a blend of traditional peacebuilding skills such as conflict and context analyses (to understand an existing ecosystem) with more technical knowledge of ICTs such as programming or data analysis. The one set of skills that seem to cross-over the peacebuilding and the technical is user-centre design. It can be seen as a technical translation of what peacebuilders already do in project design supposed to meet the needs of communities on the ground through conflict and context analyses and assessments. From the Database, the most common type of bespoke

[37] For details see https://digitalprinciples.org/principle/design-with-the-user/

software used in peacetech project is digital game or app, followed by websites and social media (see Figure 7 above). Social media in these cases are either social media platforms created especially for a project, such as MePeace (mepeace.org) or digital games, apps or website with profiles and chat functions, such as the Play MC2 civic engagement gamified app (http://playmc2.com/#about). In any case a glance at the developing credentials of some of these products, platforms or tools shows that expertise can be outsourced, brought in-house or contracted. Development skills do not therefore seem to be a pre-requisite for peacetech. How this relates to the narrative of low barriers to entry, ease of access and use needs to be further explored. I address some of these in Chapters 6 and 7.

As with most things in peacebuilding practice, where those skillsets are located has an impact on practices. Autesserre (2014) for example argues that a recurrent element of failed peacebuilding projects or programmes is the tendency to value technical knowledge, often wielded by international interveners, over local knowledge. Jonathan Stray's observation at Build Peace 2016 that most peacetech is designed and developed in the Global North when most conflicts are located in the global South emphasise this point. For the Database projects, 28% of implementing organisations are classed as 'non-profit', which are mostly located in the Global North. The next most popular implementers are 'local NGOs' in 15% of the projects. The maps in Figures 8 and 9 show that the majority of those creating new technologies are located in North America and Europe rather than the conflict areas more prominent in Figure 8. The notable exception being Kenya which boasts an active tech community in Africa but is also the base of many international organisations operating across the continent.

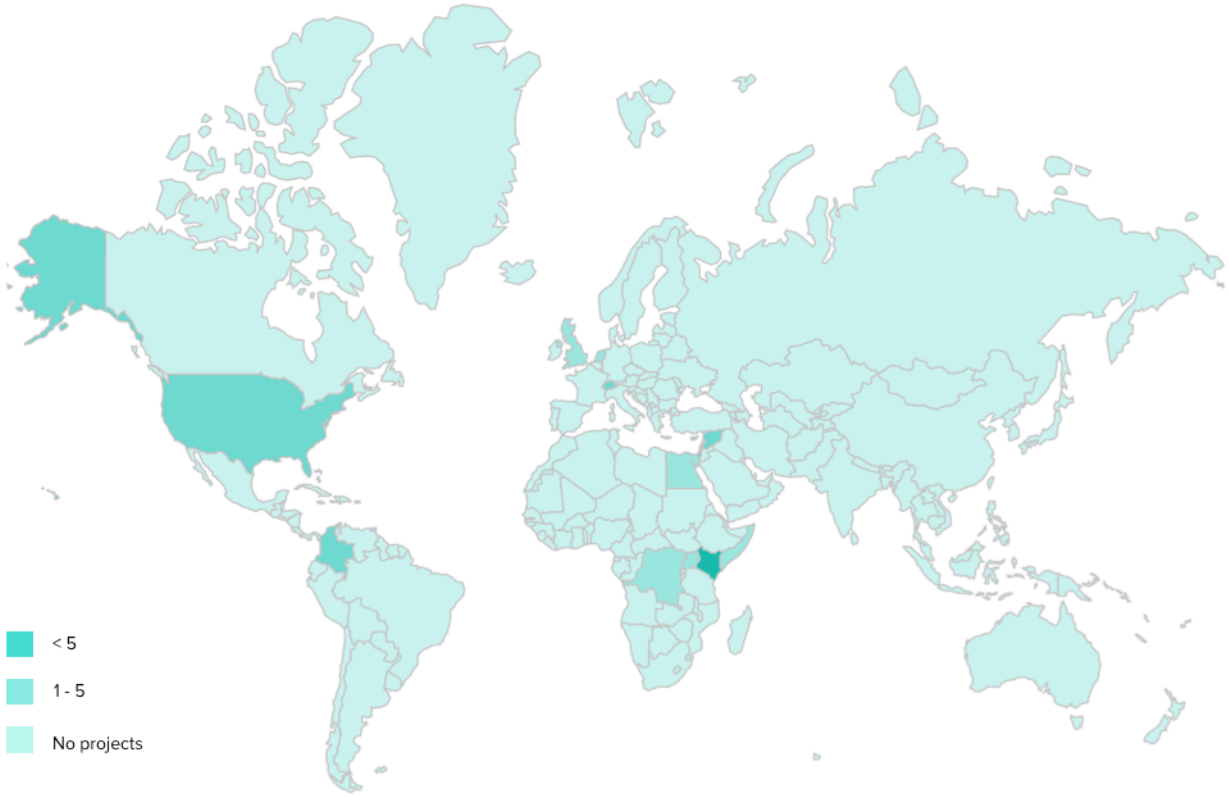


Figure 8 Map of project locations where technology was created for the project

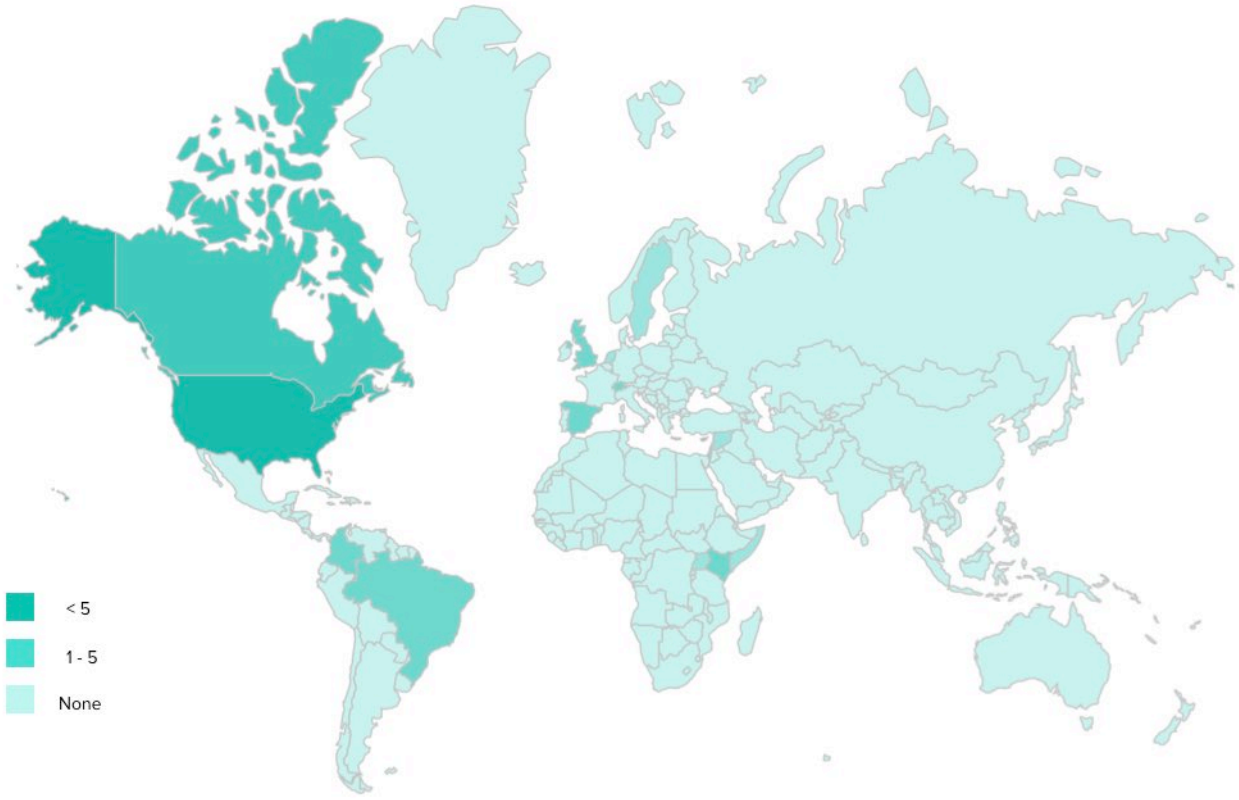


Figure 9 Map of implementing organisation locations for projects where the technology was created

5.2 Meanings in peacetech practice

Meanings in peacetech practices are harder to glean with data from the Build Peace Database, which relates much more to materials. However there are a few interesting points to note. A first concerns the narratives of empowerment and participation that seemed overarching when examining peacetech discourse. Interestingly, only 19 projects in the Database (11%) specifically talk about empowerment in their project description. And since the majority of such descriptions in the Database were submitted by project managers in applications for speaker positions at the conference or taken from project websites aiming to attract potential funders, if empowerment had been central to project objectives or impacts it is reasonable to expect the term to feature in such descriptions. This seems to point to a discrepancy between peacetech discourse, which as I have pointed out can be seen as more aspirational than grounded in empirical evidence. This is further highlighted by the fact that data is the most popular technological affordance used in 80% of the Build Peace Database projects. Yet as I show in section 5.2.1 above, local populations feature as a key stakeholder at the highest rate of 80% of the time because data relates to local events or incidents; however civil society, peacebuilding practitioners and governments are far more prominent stakeholders in data projects than any other. There is a sense therefore that data *about* or *provided by* local populations *is used by* others, including peacebuilding practitioners and governments. This illustrates what I raised in Chapter 4 about the ambiguous discourse regarding who is supposed to be empowered by new ICTs, and to the question of whether peacetech practices can go beyond peacebuilding's interventionary model. My analysis suggests that this potential falls short of being actualised on the ground. Rather for most peacetech projects ICTs are used to improve the reach or perceived effectiveness of peacebuilding practices.

Another interesting point to note is the absence of emerging patterns of peacetech uses in terms of affordances. There are no correlations as of yet between stakeholders, themes, peacebuilding objectives and technological affordances. This is consistent with the emerging, exploratory phase of peacetech, its 'state of liminality' (Firchow et al., 2017). The frequency of peacebuilding objectives represented in Figure 10 below show a clear preference for behaviour change over more 'empowering' objectives such as training, education or capacity building. While there is not data on global peacebuilding activities to compare this to, it may well reflect existing focus and activities of peacebuilding practice.

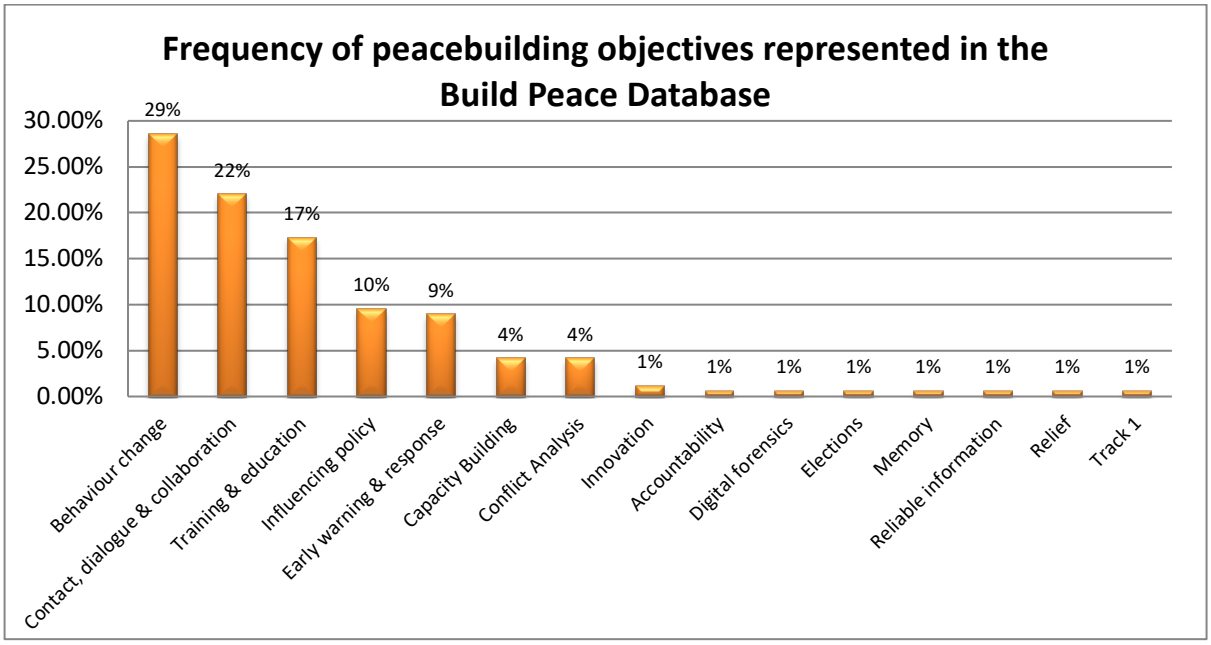


Figure 10 Source: Build Peace Database at buildpeacedatabase.org

In order to explore the ideas and meanings of peacetech implementation in more depth I use four project evaluations to provide more information on the context and leveraging of ICTs' affordances in peacetech. A first thing to note is that a project or an activity can leverage more than one affordance. I show in each case that the leveraging process, the choices made and the context in which the project develops is often more important in determining success or failure than the technology itself, another piece of empirical evidence discrediting a technologically deterministic view of the transformative potential of ICTs in peacebuilding.

5.2.1 Data and communication: Una Hakika – a misinformation management system in Kenya

Una Hakika is a 'mobile phone-based misinformation system for the Tana Delta Region of Kenya designed and implemented by The Sentinel Project, a Canadian organisation (Boyd et al., 2015). In their evaluation report, they describe the project as follows:

> 'The Una Hakika (Swahili for "Are you sure?") pilot project has demonstrated the potential for using networked technologies (especially mobile phones) to monitor and counter the spread of misinformation. Following the interethnic massacres that killed 170 Tana Delta residents between August 2012 and January 2013, a Sentinel Project team was sent to the area to work with local partners to identify problem factors which the organization could address. The team discovered that misinformation (incendiary "organic" rumours and deliberately-spread disinformation) had driven the fear, distrust, and hatred that enabled violence

between the Orma and Pokomo ethnic groups. The impact was felt not only in lives lost but also in tens of thousands of people displaced from their homes and serious disruption to the already fragile local economy. This realization led directly to the Sentinel Project creating Una Hakika, which took the form of a mobile phone-based information service which enables Tana Delta residents to participate in the misinformation management process. This project was implemented in collaboration with iHub Research and the financial support of the International Development Research Centre.' (Boyd et al., 2015, p.9)

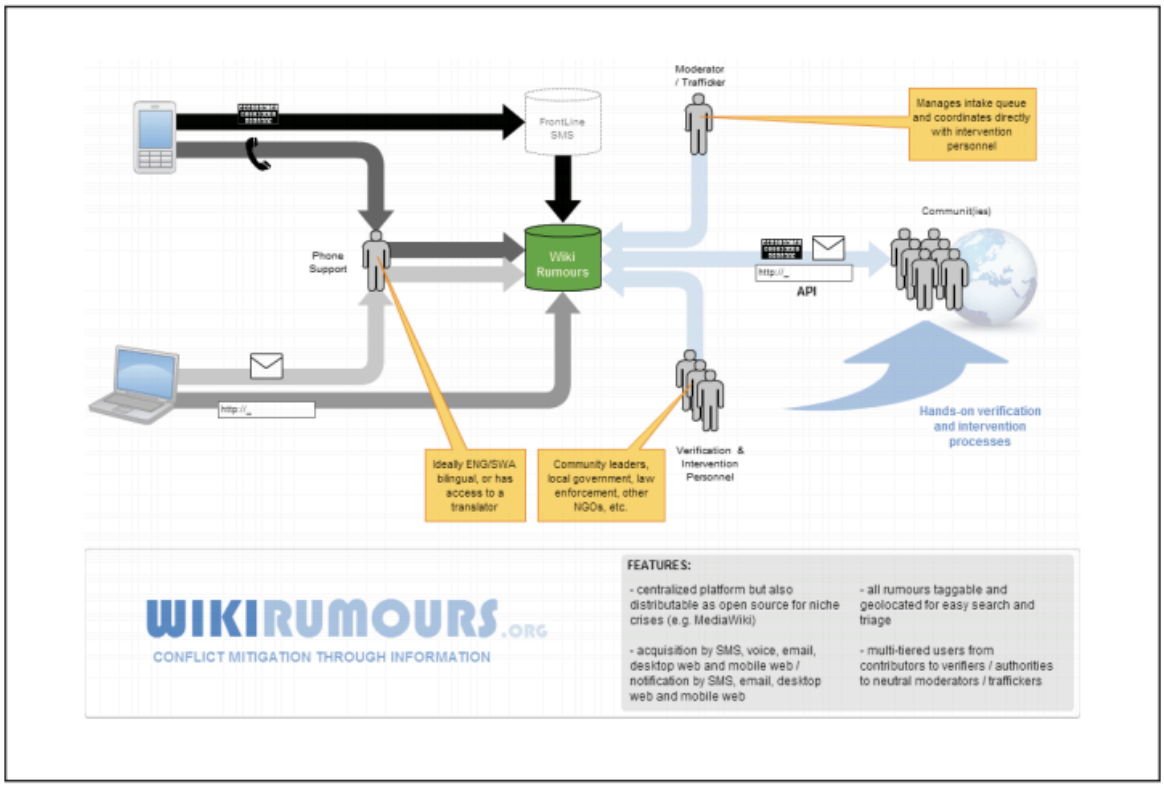


Figure 11 Una Hakika system diagram (Boyd et al., 2015, p.13)

As the Una Hakika system diagram shows (see Figure 11 above), it includes three key steps: 'data intake'; 'moderation and intervention' and analysis.

Based on an evaluation of local communication methods, the team decided to allow four inputs into the system, which the designed and named WikiRumours: voice, SMS, email and web. The SMS collection was supported by the software tool Textlt. The crowdsourcing mechanisms was complemented by a team of 200 'community ambassadors' operating on the ground (Boyd et al., 2015, p.10). The Textlt software used also enabled mass broadcast and was used in the 'portion of Una Hakika which is focused specifically on countering misinformation' (Boyd et al., 2015, p.15).

The report highlights a series of lessons learned:

> ‘Misinformation management systems cannot be imposed from above. Instead they must be implemented by entering into communities using culturally relevant introduction processes followed by cooperative efforts.’ (Boyd et al., 2015, p.11)

> ‘Misinformation management efforts should not try to replace existing communication practices in a new environment but rather adapt to the variety of high tech and low tech methods already in use in the area. Una Hakika anticipated obstacles which could prevent participation and devised solutions to maximise inclusiveness.’ (Boyd et al., 2015, p.15)

The authors of the report conclude that the project was successful in countering an information deficit encountered in the scoping phase of the project. More specifically they assert that:

> ‘The information deficit identified at the project outset was significantly decreased, both in terms of how well informed residents reported being as well as the delays they experienced in receiving information. Women of all ages, who were initially over-represented in the group of respondents reporting low access to information, benefitted the most from Una Hakika as the nature of the input and output mechanisms circumvented barriers such as literacy or social structures which previously hindered their ability to gather information.’ (Boyd et al., 2015, pp.3–4)

A comparison between their baseline and final surveys leads them to extend this observation to generalise that ‘women, youth and marginalised communities have the most to gain from a system which can circumvent many of the social, cultural, and structural barriers that prevent them from accessing reliable information’ (Boyd et al., 2015, p.27)

This seems to reinforce the idea that a peacetech practice increases participation, including of marginalised groups or communities. However it remains unclear who is empowered and what kind of participation both the implementing team and the local communities have experienced.

5.2.2 Data and networking (management): Crisis and Recovery Mapping and Analysis

The Crisis and Recovery Mapping and Analysis (CRMA) is a ‘planning and information management support and capacity building initiative established in South Sudan with the

aim of strengthening governance through the provision of planning and decision making tools' (UNDP, 2014, p.3) The project was funded primarily by the UK Department for International Development (DfID).[38] The project used an Ushahidi-type crowdsourcing platform to compile 'geo-referenced state-by-state maps of human security and socio-economic recovery risk data' (UNDP, 2014, p.3). It also 'supported regular updating and information sharing through a network of state and non-state recovery and development actors' (UNDP 2014, p. 3).

> 'The ultimate objective of the CRMA process is to support the development of national capacities to better analyse and strategically target interventions in a conflict sensitive and inclusive manner; and to help assess the impact of the government's actions.' (UNDP, 2014, p.3)

The idea behind the development of this project is recognised in the assessment report and echoes a number of the Build Peace discourses developed in Chapter 4. It is therefore interesting to compare the potential these emphasised with how the project turned out in reality:

> 'The centrally managed and collectively sourced data repository is a unique and innovative tool that holds great potential in terms of bridging humanitarian and development activities, enhancing aid effectiveness and to ensuring that planning and programming is conflict sensitive if not peacebuilding-oriented. The current crisis has only made this need more profound.' (UNDP, 2014, p.3)

From another interim evaluation of the same project, we learn that:

> 'The original project was designed to address primarily the need to build the Government capacity in strategic planning, an area of universally acknowledged weakness. The words "Threat and Risk" in the Project title were changed, and the "Crisis and Recovery" Mapping and Analysis (CRMA) was adopted for the Phase 2; the idea being to broaden the scope of the technical appellation, but remain within the particular crisis and recovery focus of the Project's mandate. In the event, this led to many problems through poor communication, misunderstandings, misconceptions and multi-party actions without common purpose or recognition of what the actual areas of contention were. The Project was terminated in mid-2013, as a result of all the negative impressions, which

[38] See more information at https://devtracker.dfid.gov.uk/projects/GB-1-203405

had very little to do with the actual technical products, but more to do with the organisational context in which they were embedded.' (Symonds, 2014, p.iv)

And indeed it seems that the CRMA was not used by the intended stakeholders that 'could have potentially benefitted from its sophisticated maps and data analysis opportunities' (UNDP, 2014, p.3). It seems that the platform and the analysis it provided did not significantly impact any decision-making processes (UNDP, 2014, p.12), and that in fact the platform was not known outside of UNDP circles. The evaluation goes on to make a series of recommendations such as ensuring a strategic profile for the CRMA; updating its data; establishing a network of community monitors to collect data from areas that are not accessible for security reasons or existing technological infrastructures; or guaranteeing the fiscal and operational sustainability of the system (UNDP, 2014, p.4). Some of the recommendations echo the Digital Principles described earlier. This also raises a number of questions. Was there a gap in skills, technical or analytical, that precluded stakeholders from using the platform? Do better data necessarily lead to better responses?

5.2.3 Networking (alternative space) and mobilisation: Hands on Famagusta

Hands on Famagusta, a Mahallae challenge winner, is an interactive platform to imagine a common future in the divided city of Famagusta. On its homepage of handsonfamagusta.org, several blocks represent enclaves within the city that are isolated not just geographically, but socially and in terms of inequality - the fragmented city of Famagusta, as shown in Figure 12 below.

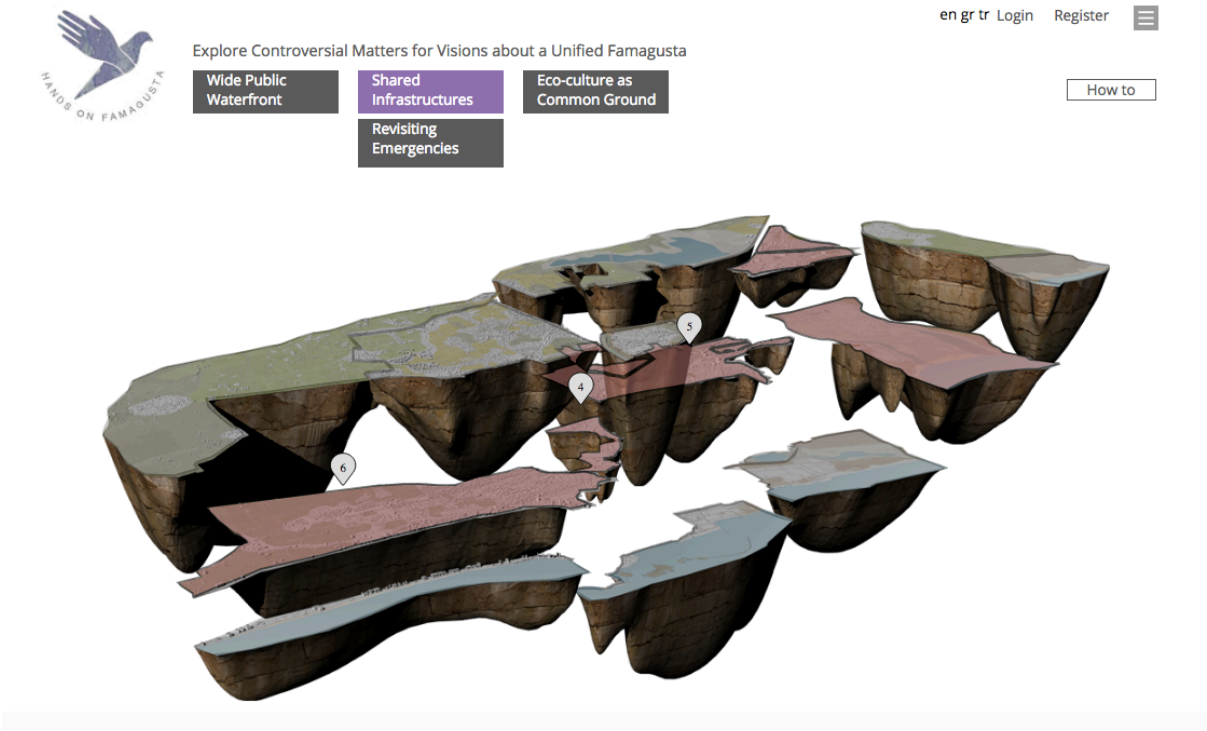

IF
you could decide now about the future
of Famagusta in a unified Cyprus
© HANDS-ON FAMAGUSTA 2015


THEN
come on board to explore and play
with imaginaries of Famagusta
© HANDS-ON FAMAGUSTA 2015

Figure 12 Introduction video on the Hands on Famagusta website homepage

Famagusta is a 'contested city grounded in ethnic conflict driven by geopolitical actors interested in the larger Easter Mediterranean area' (Stratis and Akbil, 2017, p.157). Each part is 'further fragmented by military enclaves, camps and buffer zones. Famagusta is at the intersection of many borders and buffer zones and is composed of isolated urban enclaves, such as the uninhabited fenced-off part of the city, named the 'ghost-town', the port area, a medieval old town surrounded by Venetian fortifications, fenced military areas extending along the coastline, industrial zones, a university campus and ecological sites' (Stratis and Akbil, 2017, p.157).

Users are invited to discover various urban projects for each different enclave and make their own decisions as to what should happen for each, thereby creating their own 'Imaginary Famagusta'. These can be saved and showcased on the website, which includes a voting system to support a user's particular version of the future of Famagusta, as shown in Figure 13 below.


en gr tr Login Register
Explore Controversial Matters for Visions about a Unified Famagusta
Wide Public Waterfront
Shared Infrastructures
Eco-culture as Common Ground
Revisiting Emergencies
How to
5
4
6

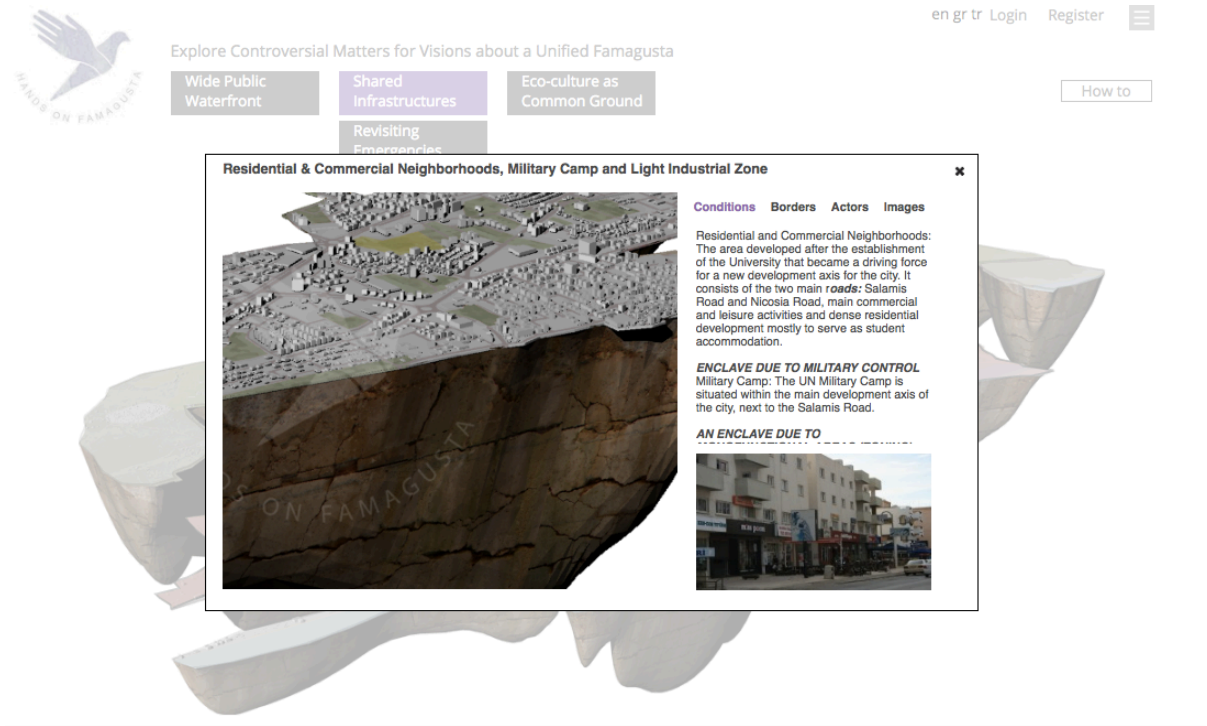

en gr tr Login Register
Explore Controversial Matters for Visions about a Unified Famagusta
Wide Public Waterfront
Shared Infrastructures
Eco-culture as Common Ground
Revisiting
How to
Residential & Commercial Neighborhoods, Military Camp and Light Industrial Zone
Conditions Borders Actors Images
Residential and Commercial Neighborhoods: The area developed after the establishment of the University that became a driving force for a new development axis for the city. It consists of the two main roads: Salamis Road and Nicosia Road, main commercial and leisure activities and dense residential development mostly to serve as student accommodation.
ENCLAVE DUE TO MILITARY CONTROL
Military Camp: The UN Military Camp is situated within the main development axis of the city, next to the Salamis Road.
AN ENCLAVE DUE TO

Figure 13 Imaginary Famagusta game screenshots from handsonfamagusta.org

The platform is combined with a roundtable workshop series that uses a portable large-scale city model and representations of the enclaves on A1 sheets of paper.

> 'By virtue of the material and immaterial technologies devised by the 'Hands-on Famagusta' project, architecture and urban design acquire agencies that transform divisive representations of the contested territories of Famagusta into territories-of-common-concern.' (Stratis and Akbil, 2017, p.157)

> 'The Hands-on Famagusta project has associated the word 'collective' with materialities, technologies and temporary communities across the Cypriot divide, but not yet with institutions and policies, because the hostile environment of the Cyprus division and the absence of resolution regarding the reunification of the island makes this impossible.' (Stratis and Akbil, 2017, p.160)

Hands on Famagusta is a great illustration of a local organisation leveraging ICTs to achieve peacebuilding objectives that were far less likely before the advent of modern communication technologies. As such it showcases the tremendous potential of ICTs to leverage peacebuilding objectives. Whether the Hands on Famagusta website influences urban planning in Famagusta however is a different question, and this evaluation provides little information about it.

5.2.4 Data, communication and mobilisation: Sisi ni Amani

> 'In 2007-8, Kenya experienced protracted and widespread post-election violence. Mobile phones—and text messages in particular—were used to spread rumours and organize violence. Sisi ni Amani Kenya (SNA-K), a Kenyan non-governmental organization, utilized a combination of traditional and innovative communication and dialogue approaches in order to increase civic education and engagement, as well as to prevent violence in Kenyan communities before, during, and after Kenya's 2013 General Elections. SNA-K developed SMS-based programming that reached over 65,000 Kenyans with civic education, civic engagement, and violence prevention text messages throughout the 2013 election cycle.' (Shah and Brown, 2014, p.4)

In response to the observation that new technologies were being used to spread rumours and misinformation, the project team set out to explore how to use SMS strategically to empower local peacebuilders and reduce the general population's vulnerability to such misinformation (Shah and Brown, 2014, p.5). While the infrastructure is similar to Una Hakika, which is described earlier in this Chapter, the emphasis for this illustrative example is on other aspects of the process. Indeed the Sisi ni Amani team engaged in a three-year process of research and local consultation to design their programme and create its implementation network. They first sought to understand what made SMS so effective in spreading information and inciting violence and found that SMS in this context were used to: incite fear, spread information and organise action (Shah and Brown, 2014, p.6). The team then spent a substantial amount of time creating a variety of peace messages to counter violence through workshops with local communities that identified 'highly specific types of situations in which messages could be useful, and, within these situations, identify different types of messages that should be disseminated' (Shah and Brown, 2014, p.7). They also created civic education messages to engage people in the electoral process. Another aspect of the Sisi ni Amani project is their investment in the development of a local network of community monitors trained in verification of information, message creation, testing and sending.

In its implementation, Sisi ni Amani relied on the use of the PeaceTxT platform that, in partnership with local mobile network operator, allows you to send out SMS messages to a database of subscribers. For the three years research and design phase, the Sisi ni Amani team conducted participatory design workshops on message content and civic education and gathered a subscribers list of over 65,000 people. Before and during the 2013 elections, Sisi ni Amani community monitors gathered information about incidents, atmosphere and potential outbreaks of violence according to pre-defined territories.

Those were verified and a decision was made each time about a possible response. When the team and community monitors decided on sending a message, the latter was identified from a list of pre-worded templates and sent out to subscribers in the targeted area, in the subscriber's language.

In their project evaluation, Shah and Brown found that of those who had experienced election-related violence, 100% stated the peace messages had an impact, with more than half of the respondents saying the messages promoted peace and had a calming effect, and 40.3% saying they believed the messages actually prevented violence (Shah and Brown, 2014, p.15). They concluded by saying:

> 'It is remarkable that such a simple and accessible tool had such a far-reaching impact. In fact, the results demonstrate the power of mobile text messaging. When wielded by trusted institutions, such tools could go a long way in reaching out to communities and reassuring them in times of need.' (Shah and Brown, 2014, p.20)

While undoubtedly mobile text messaging afforded the possibilities described by Shah and Brown above, it is also possible that the preliminary three years spent researching relevant messaging strategies and building a trusted network of community reporters and subscribers similarly helped 'reaching out to communities and reassuring them in times of need' (Shah & Broen 2014, p. 20).

5.3 Peacetech practice and practitioners

These project evaluations, and other insights have led to the emergence of rules (that I have defined earlier as a competence of peacetech) that are gleaned informally from peacetech pioneers and practitioners. These have been highlighted in the Digital Principles published by USAID and endorsed by a large number of organisations. Failures do not hold a prominent place in peacetech discourse, and if mentioned it is only in passing. Some of these ideas were introduced in Mancini's 2013 edited report on 'New Technology and the Prevention of Violence and Conflict' regarding technologies that failed because it did not fit in with the existing technological ecosystem (Musila, 2013); or was not designed with the intended users' input (Puig Larrauri, 2013). USAID's Digital Principles were developed in response to these early observations, as described in the website: 'some digitally-enabled programs failed – and quite often that failure was for

reasons that were both predictable and preventable'.[39] There are nine Principles, illustrative of emerging rules in peacetech, which I have outlined above. They include the need to:

1. put the user at the centre of the design process by implementing 'user-centred design';
2. understand existing structures and requirements in the context – country, region and community;
3. design for scale by securing funding and partnerships beyond the pilot phase;
4. build sustainable platforms, tools and programmes to ensure long-term impact;
5. be data driven by enabling the right information to get to the right people to take action
6. have an open approach to avoid duplicating work that has already been done;
7. reuse and improve
8. address privacy and security issues when collecting data and consider how it is used, stored and shared
9. be collaborative across the community to increase effectiveness and impact

This emphasis on the design aspect of peacetech is also at odds with the discourses presented in Chapter 4, which make little mention of design considerations and focus on implementation instead.

The Build Peace Database data does not provide information on the effects of implementing peacetech practices according to these principles. The analysis of the case study I present in Chapter 6 and 7 provides some of these insights. It showcases a project where many of these principles are applied and analyses some of the issues and consequences this has for peacetech and the hope to take peacebuilders beyond intervention.

The four project evaluations presented in the previous section provide important information on the transformative potential of ICTs for peacebuilding. First, three out of the four illustrate new ways to build peace by leveraging affordances of communication technologies. Indeed Una Hakika and Sisi ni Amani leverage the real-time data and communication affordances of ICTs. Verifying a rumour and sending out messages of caution require this technological capability and infrastructure. Hands on Famagusta would not be able to offer an alternative vision of the future of Famagusta without stunning visuals, designs and the interactivity offered by their online game, nor could

[39] See https://digitalprinciples.org/about/ [accessed on 5/01/2018]

different users connect through this activity offline. And for all the techno-scepticism we encounter in the narrative of technology as 'simply another tool' for peacebuilding, this is very important to note.

All four of these projects however point to another essential observation: that what made these a self-described success (or failure) had less to do with the technological affordances leveraged in each case, and more with contextual factors and the processes through which the technology was perceived and introduced in the peacebuilding context. Una Hakika for example, notes that without trust the project would fail. Trust was not acquired by introducing the WikiRumours platform, rather through the work of the team and their community monitors on the ground, the fact that local communities were consulted in the development of the project (Boyd et al., 2015, p.11). Similarly Sisi ni Amani relied on three years' worth of participatory design activities to create a network, an infrastructure to support the PeaceTxT platform they decided to use (Shah and Brown, 2014). The CRMA platform on the other hand was deemed technically functional but essentially useless due to lack of wider stakeholder consultations and buy-in (UNDP, 2014).

Still this showcases the tremendous transformative potential of ICTs for peacebuilding, as I have shown that technological affordances are essential in supporting innovative peacebuilding activities that seem successful in preventing violence in some cases. An initial observation that mitigates this enthusiasm is that most peacetech projects rely on external funding for sustainability.

Second, at least some of the empowerment narratives are silent on the nature and mechanisms behind this empowerment. When they are more specific, they rely primarily on the ability of the grassroots, the everyday to counter oppressive regimes (Tellidis, 2015; Haj-Omar, 2015). There is only one project in the Build Peace Database directly relating to political processes: the Egypt Parallel Constitution, which used data visualisation techniques on a website to raise awareness about the ramifications of selecting various articles in the new constitution. I have no further details of the impact of this project as it was discontinued shortly after being presented at Build Peace 2014. And of the 12% of projects categorised in the 'governance' theme, the majority relates to electoral violence monitoring, which affects the political process functionally but not substantively.

Third, looking more specifically at the Cyprus context, awareness and usage of ICTs for peace figures remain incredibly low across the general population of a peacebuilding context. Interestingly as shown in Figure 14 below there appears to be a slightly

ambivalent to negative perspective among the Cypriot population on the potentials of new technologies for peace. Considering that Build Peace 2015 was held in Nicosia, Cyprus showcasing a wealth of local peacetech projects such as Hands on Famagusta, SCORE, Mahallae, Mapping Karpas, Socioholic Typewriter, and many more, this makes for a sobering read in contrast to the narratives constructed by peacebuilding practitioners and presented in Chapter 4.

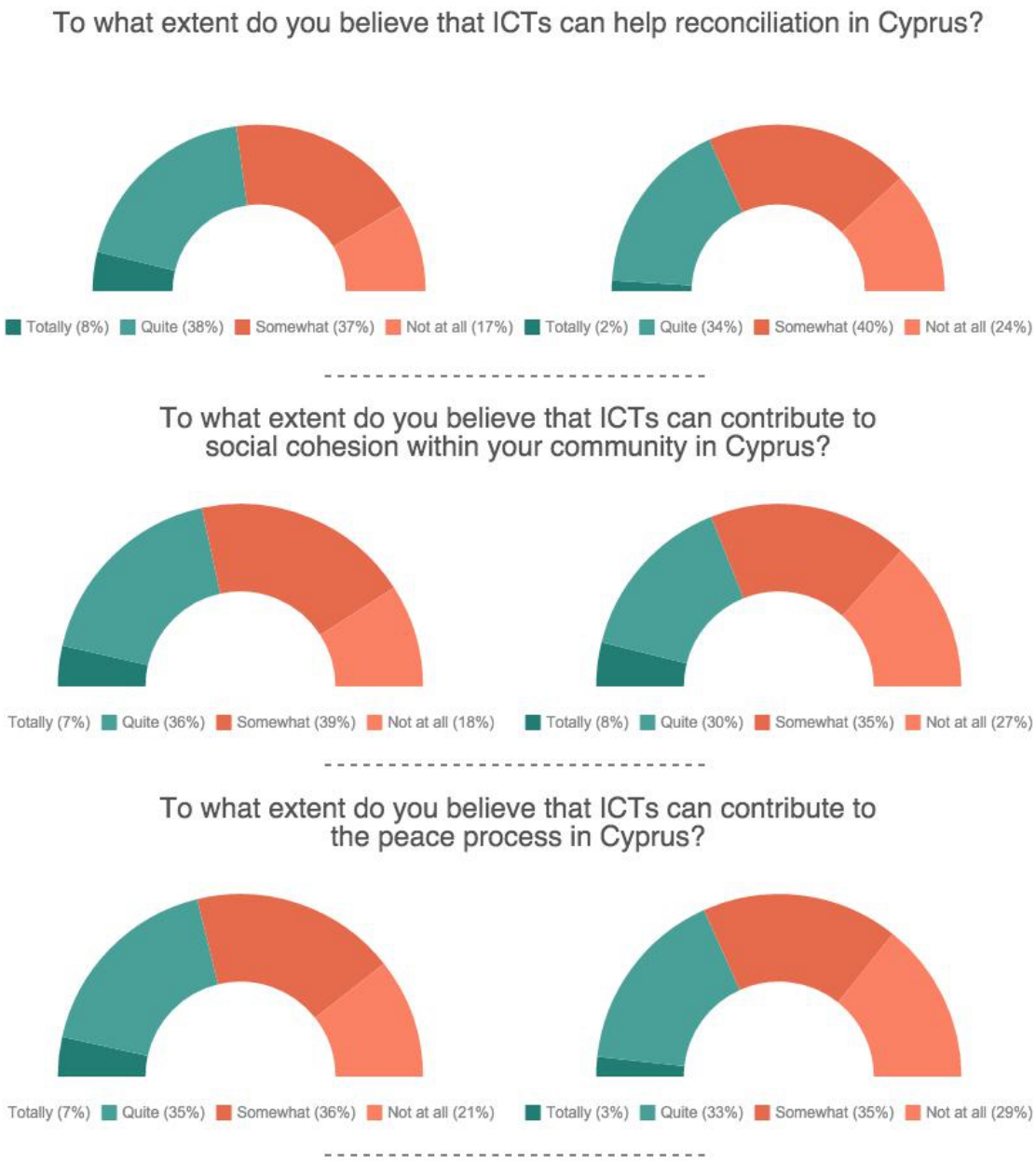


Figure 14 Results of SCORE survey administered in June 2015 by SeeD

The nature of the data generated in this section makes it difficult to consider the questions of wider context in terms of how using ICTs affects existing conflict dynamics. Indeed that is not mentioned on project websites or much in evaluations. One needs to read between the few lines available. For example the Sisi ni Amani project only included

its partnership with local law enforcement in a footnote (Shah and Brown, 2014), when this was a major reason the team were able to successfully prevent (further) violence outbreaks. The Una Hakika report alludes to issues caused by the perceived integrity of community monitors, therefore hinting at some of the ways these positions affected existing power dynamics in this context with a negative impact for the overall objectives of the project (Boyd et al., 2015). Finally Hands on Famagusta provides the most straight forward statement when it declares that the political context in Cyprus makes associating their work with policy and institutions impossible (Stratis and Akbil, 2017, p.1160). This confirms the argument that ICTs do not yet transcend, but rather transform, existing peacebuilding practices.

In Chapter 4 I offered the following discursive construction of peacetech practice:

> Peacetech is a practice that uses ICTs in data, communication, mobilisation or networking projects and programmes in order to empower local populations and peacebuilding practitioners; to foster greater participation and reach; and to achieve larger scales of operation more efficiently. This is made possible by the ubiquitous and easy to use nature of ICTs and should rest on 'good' peacebuilding project design principles such as Do No Harm.

From the analysis of project data, peacetech can be constructed as follows:

> Peacetech is a practice that leverages the data affordance of ICTs in the largest number of projects and the affordance of mobilisation most often. Whereas local populations are key stakeholders in most projects, the latter are mainly designed and implemented or supported by international peacebuilding organisations. Digital Principles offer guidance on 'best practices' such as user-centred design, ethical and sustainability considerations for designing peacetech projects endorsed by a large number of peacebuilding organisations. As such peacetech practice tends to reproduce, rather than transcend peacebuilding's traditional model of intervention.

This is in part due to the construction of the peacetech practitioner gleaned from this analysis. Indeed despite rhetoric of ubiquitous availability and low barriers to entry, peacetech is operationalized through peacebuilding projects, a majority of which are implemented by traditional peacebuilding organisations. Indeed overall just under a third of implementing organisations are classed as non-profit, mostly international ones located in the Global North. Of the four affordances of data, communication, networking and mobilisation, data is the most popular and used in 80% of the projects. The key stakeholders in those projects are mostly transnational peacebuilding organisations. The

affordance most leveraged by local organisations is communication – bringing more voices and alternative narratives to peacebuilding processes. Whereas the figures around the data affordance tend to contradict the peacetech narrative of empowerment and participation, the way that the communication affordance is used in peacetech projects tends to support it. Whereas my exploratory Bayesian statistical analysis showed no correlation between the various affordances, peacebuilding objectives, stakeholders, etc. it did show that international organisations have a greater tendency to implement data projects, while local NGOs communications projects.

One can identify some of the skills needed for peacetech through the types of software used or adapted in projects. This shows that peacetech practices demand a blend of traditional peacebuilding skills such as conflict and context analyses (to understand an existing ecosystem) as well as more technical knowledge of ICTs such as programming or data analysis. One set of skills that seem to cross-over the peacebuilding and the technical is user-centre design. It can be seen as a technical translation of what peacebuilders already do in project design supposed to meet the needs of communities on the ground through conflict and context analyses and assessments. For projects where technology is created especially, there is a discrepancy between where the projects are implemented and where the implementing organisations are located, with the former being in the Global South and the latter in the Global North. As technology development skills can be outsourced or contracted, they do not seem to be a prerequisite for those implementing peacetech.

Finally despite empowerment and participation being presented as the driving rationale for using ICTs in peacebuilding contexts, evidence shows that the primary objectives of peacetech projects are more focused on enhancing traditional peacebuilding practices, with capacity building and activities designed to reach marginalised groups such as women representing only a minority of Database projects. Focusing on the main affordances of data, communication, networking and mobilisation, I show that the way they are leveraged means peacetech remains within a traditional peacebuilding model of intervention, although some lessons learnt are beginning to emerge from projects, which have led some members of the Build Peace community to develop or endorse ‘principles’ for ‘good’ digital development that include user-centred design, adapting to existing contexts, sustainability. This introduced a distinction that discourse did not make – processes of designing as well as implementing peacetech. Indeed the underlying technological determinism in peacetech literature and discourse seems to preclude an interrogation of the processes that led to the development as well as leveraging of certain affordances of ICTs in peacetech and the consequences this may have for the overall

peacetech discourses of empowerment and participation. The following two Chapters, through a focus on peacetech practice-as-performance address both questions in turn.

Chapter 6 Doing peacetech: participatory analysis for peacebuilding in Burundi

In previous Chapters I have constructed a view of peacetech practice from discourse and from evidence of peacetech projects implemented on the ground. In these discussions and in line with the conceptual framework of this thesis, I have identified the elements that make up peacetech practice – its materials, competence and meanings. As a central material element, ICTs are conceptualised through the affordances they offer peacebuilding practices, and how these have been leveraged. Competence includes shared practical and general understandings of how to perform the practice (Nicolini, 2012; Schatzki, 2005; Shove et al., 2012), and meaning refers to the motivations and purposes, as well as symbolic representations of participation (Shove et al., 2012).

In this and the following Chapter I shift analytical focus from the component parts of peacetech practice to how they come together to form these practices. This is what Shove el a. (2012) describe as the dynamic aspect of practice-as-performance. Nicolini refers to it as an empirical imperative of practice theory as follows:

> 'A strong programme [of practice theory] requires a commitment to an observational orientation *and* the adoption of methods that allow an appreciation of practice as it happens.' (Nicolini, 2012, p.14)

To do so I focus on a case study of the piloting of a participatory analysis platform by CENAP, a Burundian research organisation, as part of the Build Peace Fellowship, a capacity building project run by my company Build Up. In this Chapter I focus on how CENAP introduced the platform, and how it contributed to the participatory approach of their peacebuilding work. In the following Chapter I examine the interplay between the capacity building and peacetech best practices and their empowerment objectives through CENAP's experience. In this way I examine in more depth the two main themes of participation and empowerment through peacetech. In Chapter 4 peacetech discourses intimated that the affordances of ICTs made peacetech possible – low barriers to entry, ease of use and the ubiquitous nature of ICTs allowed peacebuilding to leverage their potentials to build peace. From the more dynamic perspective employed in this Chapter, the hypothesis then seems to be that those affordances are primarily responsible for brining together the elements of peacetech. However Chapter 5 highlighted the importance of intervention and the relationship between local and external expertise and support. This Chapter aims to address this apparent discrepancy. Indeed an exploration

of what links the elements of peacetech practice together, and the obstacles to such linkages sheds light on how ICTs affordances are leveraged in peacetech and contributes to answering my overall question of how peacetech practices support or hinder the participatory potential of ICTs for peacebuilding. After providing a recap of what participation means for peacebuilding, I introduce the specific context of Burundi. To look at the dynamics of peacetech in practice, I lay out the different elements of this project and how they unfolded through my ethnographic observations and in-depth interviews. I conclude by identifying both the elements and the processes that brought them together, including those that supported and hindered the making of these linkages.

6.1 Introducing a participatory analysis platform

As described in Chapter 2, participation, often synonymous with 'local participation' and ownership, is seen as a necessary input for successful peacebuilding, to fix the crisis of legitimacy peacebuilding has faced in light of failures and interventionary practices. As Mac Ginty (2011, p.3) notes, 'local 'ownership' and 'participation' were regarded as ways of enhancing the success and sustainability of peace and development initiatives'. As a first view of participation, it thus refers to inclusion in peacebuilding processes, understood from the perspective of the international peacebuilding architecture. Peacebuilding interveners have adopted such a rhetoric of local ownership and participation over the past decade, even if they are still criticised for failing to achieve either (Leonardsson and Rudd, 2015). It is important to highlight that this reasoning stems more from the observation that peacebuilding failures occur when local actors are not able to participate or drive change towards a more peaceful society than from assessments of success stories where genuine local participation and ownership have achieved sustainable peace.

A second aspect of the concept of participation in peacebuilding, which makes more explicit the link between participation and 'good peacebuilding' focuses on local political processes. For example Leonardsson & Rudd note that:

> 'the claim is that carefully designed and well-governed decentralisation can help achieve stability and peace by increasing legitimacy, accountability, inclusion and participation, establishing stable sub-national arenas for citizen–state interaction and bargaining, but only where the sub-national level has sufficient means and autonomy to control resources.' (Leonardsson and Rudd, 2015, p.828)

Here participation is favourably perceived with an emphasis on the need to go beyond elites and to include a wide range of stakeholders, such as women and other marginalised voices – that will ensure the achievement of stability and peace. The idea is that broader participation will lead to a fairer situation that is more acceptable to all parties (enhancing legitimacy and accountability of the governance structures), therefore reducing the risk of relapse into violence. This conceptualisation of participation in peacebuilding is subtly different from the first in that it assumes away the role and impact of international intervention. As such the first conceptualisation remains within a traditional model of peacebuilding, but the second transcends it. It is also closely related to a third aspect of participation as a process, a way to link political will to social change. As Brewer argues, there is a wide gap between political elite driven processes and the rate of change across society needed to embed transformative initiatives (Brewer, 2010).

As shown in Chapter 4, both views are presented through peacetech discourse – the ability of peacebuilding practitioners to reach more people and the ability of local peacebuilders to participate in their peace building. This case study is illustrative of the latter situation. As described in Chapters 4, peacebuilding practitioner and researcher discourse on ICTs and peacebuilding includes a prevalent narrative that one of the greatest potentials of peacetech is to allow for greater participation in peacebuilding processes. The claims include ideas of broader participation, contending that more people, such as those who have been traditionally marginalised, are able to participate; and of deeper participation with the potential to contribute more meaningfully to peace.

CENAP has been active as a research organisation dedicated to building peace and informing policy in Burundi since 2007. Like other Interpeace partners, CENAP uses a participatory action research approach for all of its work, with a focus on involving key stakeholders at every stage of the research, from inception to presentation of the results. Traditionally however, CENAP's work has remained qualitative, through focus group and dialogue forums organised around the country. Their current research marked the first time they engaged in quantitative data collection through a nationwide survey, and the challenge of the Build Peace Fellowship was to develop a tool or a platform to support CENAP's participatory methodology in processing quantitative data. The overall objective of the participatory analysis platform was to allow for greater participation of stakeholders in the research and greater trust in the research results through early buy-in to the process of getting those results. Before presenting my analysis of these processes, I briefly outline the socio-political context of Burundi and its key peacebuilding challenges.

6.1.1 Building peace in Burundi

Before proceeding it is helpful to provide some background information on the situation in Burundi. Burundi is located in the Great Lakes region of Africa, bordering Rwanda, the Democratic Republic of the Congo (DRC) and Tanzania. It counts just over 10 million inhabitants and is often described as one of the poorest countries in the world (BBC, 2017). The conflict context in Burundi is complex and I could not do it justice in so small a section. But while it is obviously essential to the wider work of CENAP, a brief contextualisation will suffice for the purpose of this thesis.

According to CENAP in one of their first major publications in 2008, [*translated from French by the author*]:

> 'Histories of the Burundian conflict have often been prone to interpretations along ethnic lines. This interpretive matrix however has often been manipulated by various interests. By colonisation in its time, though the politics of 'divide and conquer'. By Hutu and Tutsi political elites themselves following independence and the ensuing power struggle and its political and social advantages. These manipulations have resulted in exclusion and violence, and the gulf has grown wider with each successive interethnic massacre.' (CENAP, 2008, p.5)

The first overt ethnic conflict lines appeared shortly after the first democratic elections of September 1961 that preceded formal independence from Belgium in July 1962. Indeed the first president-elect, Prince Louis Rwagasore had led his 'Union pour le Progrès National' (UPRONA) party to victory. UPRONA represented a multi-ethnic, multi-faith and cross-class party that had advocated for immediate independence. The ensuing power struggles resulted in ethnic tensions among Hutu and Tutsi political elites and the first interethnic massacres of 1965, as CENAP contend, anticipating '1972' a year of large scale massacres and displacement of refugees (CENAP, 2008). The country sees a succession of more overt or muted crises until the assassination of Melchior Ndadaye, the first Hutu president ever elected in 1993 by Tutsi-led army. Mass revenge killings ensue, resulting in a civil war that lasted until 2008, in spite of the Arusha accords, a peace agreement negotiated by Nelson Mandela and signed in Arusha, Tanzania in 2000. The latter was followed by a second agreement signed in 2003 with the main rebel party 'Conseil National pour la Défense de le Démocratie' and its armed wing 'Forces de Défense de le Démocratie' (CNDD-FDD) and saw the election of CNDD-FDD president Pierre Nkurunziza in 2005. The success of these elections brought hope across the country despite continued civil war with the 'Parti pour la Libération du Peuple Hutu – Forces Nationales de Libération' (PALIPEHUTU-FNL) until 2008 when its leaders agree to

the terms of a 2006 cease-fire. A period of relative stability comes to an end as Nkurunziza announced his running for a third term at the 2015 elections, which sparked renewed cycles of violence and displacements.

Burundi was one of the first countries to receive support from the UN Peacebuilding Fund formed in 2006. In an external evaluation of this support, Campbell et al. note the four priorities of the 'Peacebuilding Priority Plan for Burundi are:

1. Governance and peace, focusing on democratic governance, elections and strengthening of peace and social cohesion through the role of youth and women;
2. Rule of law in the security sector, focusing on professionalization of the National Defense Forces, capacity-building for the National Police and disarmament of civil populations;
3. Justice, human rights and reconciliation, focusing on strengthening the judiciary, establishing a National Independent Human Rights Commission and the national ownership of the reconciliation process;
4. Land issues, with a focus on resettling the returning refugees and resolution of land disputes' (S. Campbell et al., 2014)

CENAP was formed in 2002 as a research and advocacy organisation based on an idea of the need for radical inclusion in peace processes in order to achieve lasting peace.[40] After a series of external partners such as the 'Institut Panos Paris' or Swiss Coooperation, CENAP became a long-term partner of Interpeace in 2007 and further develop their Participatory Action Research approach and methodologies. According to a profile on their website, they are active in the following areas[41]:

- State fragility and peacebuilding
- Political parties and elections, election aftermath and policy advocacy
- Transitional justice
- Civilian Disarmament and security sector reform
- Poverty and employment issues

As this list shows, CENAP has been working on central peacebuilding themes for Burundi, in an approach that has continually sought to involve the range of key stakeholders in these processes. Their operating partnership model is common in peacebuilding practices

[40] For more information see CENAP's website http://cenap.bi/index.php/organisation
[41] *Ibid.*

where a local organisation is supported by an external, international partner or range of partners (Autesserre, 2014). This has led some to question the legitimacy (or authenticity) of some of those organisations (see for example (Popplewell, 2018)). A full discussion of this question is outside the scope of this thesis. However two points are important to note. A first is that moving away from an idealised notion of the local is important and will be reflected in the rest of this argument. A second is that the practice lens adopted in this thesis enables the following arguments to go beyond this discussion, as the relationship between CENAP, their partners and positionalities is made more explicit in the analysis.

6.1.2 Meanings: rationale and motivations

The Participatory Analysis Platform developed as part of the Build Peace Fellowship was designed to achieve the following objective:

> 'The aim of the *platform* is to enable key stakeholders to interactively analyse/visualise the quantitative data during workshops, where this analysis can serve as a basis for multi-stakeholder dialogue. The results of the wider research include both the findings obtained practically through the platform's functionalities and the process of negotiating these findings in the workshop groups.' (see PA tool development brief, Appendix F)

The rationale for the development of this platform stemmed from an early negotiation during the Build Peace Fellowship original training in Barcelona in July 2016, which is explored in more details in the following Chapter. But for now suffice it to say that the negotiation on the content of the Fellowship – or the innovative, tech-enabled project CENAP would be working on – was agreed upon in order to allow CENAP's key stakeholders to take part in the quantitative side of the research on the aspirations of Burundian youth for their futures, in order to increase the trust in the results and have greater impact at policy level. As CENAP team members recall:

> 'We have these small strategies to help us gradually present the results of the data we gather in the field, and to provisionally share them with our Steering Committee and Programme Support Group, so that they can interact with the results from the start, so that they can participate from beginning to end.' (Emmanuel, June 2017)

> 'To consider our objective. For us this was about how to include our key stakeholders and our partners in the analysis process.' (Didier, May 2017)

These opinions are echoed by all the members of the team that I interviewed and show how central the idea of participation is in the motivation to use ICTs in the form of a participatory analysis platform. However there were other motivating factors, and while the intention for the platform was broadly agreed upon between the Build Peace Fellow and myself, its implementation was described as incredibly hard by all involved.

These arguments appeared in all my interviews with CENAP team members, confirming that these views can be generalised to the organisation. The following quotes underline the idea that one motivation to use new technologies was to make work easier for the team:

> 'It was a technology we wanted to bring in order to improve our work' (Didier, May 2017)

> 'When we first heard about the [Fellowship] training, we initially understood it as capacity building with regards to our audio-visual capabilities' (Evelyne, May 2017)

> 'In terms of the research programme, it is true that new technologies for us meant data collection technologies. We thought that for the data collection phase, we needed to be able to use means that would make this task easier. I mean collect data with smartphones – I know that this is starting to become more mainstream across the country, I know research is no longer done on paper but through the use of smartphones. And it makes it easier… we thought that we too could take the plunge in that direction, of these new data collection technologies, because we felt that it would allow us to save time during the process, during the data cleaning – not data cleaning data entry – so that we don't have to hire data entry clerks for example, that would make it even more expensive; and it would also reduce the time it took to collect the data. But it is not only for the data collection, but we would also be reducing the risk of errors in the field, where an enumerator could write the wrong information on paper, or could lose the paper. So we would reduce the risk of error or cheating to a minimum. Our consultant was telling us that the risk of cheating could be reduced if you knew where the enumerator was and that surveying one person should last about 45 minutes and if the questions were entered in say 15 minutes, you could suspect the enumerator made up the results. So it was an experiment that only had advantages from our perspective.' (Jacqueline, June 2017)

This desire to integrate new technologies had been present but had not been implemented, and so CENAP saw the opportunity of the Build Peace Fellowship to get

some needed expertise at little extra cost beyond the time one of their staff needed to dedicate to the programme. As illustrated in the last quote above, the risk was perceived to be low and the potential for benefits high. This also shows that while web access was available to CENAP, the ability to build a participatory analysis platform was not. Lower barriers to entry and wider access are necessary in this case but by no means sufficient conditions for the adoption of ICTs in peacebuilding. In other words they do not seem sufficient to bring the elements of peacetech together in practice.

In addition there were also personal motivations that steered the CENAP team towards introducing these new technologies to their programmes, as highlighted in the following interview:

> 'Well there was this motivation of course [to improve our work], but there was also a more personal one: I wanted to know more about technologies and peacebuilding.' (Didier, May 2017)

And finally there was a desire to stand out in the field by innovating and producing work of a higher level of quality compared to other organisations operating in the same field. This is illustrated by several CENAP team members:

> 'We thought to ourselves that we would produce quality work. Quality in terms of depth, content but also in the way to present it. This is to say that it was normal that people [in the workshop] appreciated the work. The way it was presented, it was inspiring for them – they thought once again CENAP is introducing something new.' (Evelyne, May 2017)

> 'I can't go as far as saying that it is only CENAP, because I haven't conducted a survey, to say that it is only CENAP that is experimenting with these new technologies in its peacebuilding programme, but I think we could serve as a model to other organisations – to move from traditional peacebuilding and be able to transfer this expertise to other peacebuilding organisations.' (Jacqueline, June 2017)

The way that all CENAP team members that were interviewed responded intimated that those latter motivations were as important as the idea of increasing participation through the use of ICTs.

Additionally there were obstacles for CENAP to adopt new technologies. I elaborate further on these considerations in the following Chapter on empowerment, but both my interviews and ethnographic observations while in Burundi show that while participation and the other motivations outlined above provided great incentives, there were real

barriers to implementing an innovative, tech-enabled solution. A first is fear: the prospect of new technologies was daunting in terms of the likelihood of success and the risk of people not accepting the proposed technology. A second is the cost of innovation: how much effort and resources can be allocated to trying something that may not work? I come back to these questions at the end of this Chapter and explore them in more details in the following one. But this demonstrates that CENAP's use of technology was less a spontaneous undertaking than a relatively low-risk experiment to increase participation into their programme while demonstrating an innovative edge in the context in which they operate. This qualifies the narrative of democratisation of technology through lower barriers to entry prevalent in emerging peacetech discourse. It also seems to mean that were it not for the Fellowship programme, which included training, mentoring and free development, CENAP might not have considered developing a participatory analysis platform. I come back to this argument in more detail in the following Chapter. I now turn to the platform that was built and the considerations that shaped this process.

6.1.3 Materials and competences of participatory analysis: designed affordances

The participatory analysis (PA) tool is a password protected website hosted by Elva. The platform contains data collected early in 2017 across all regions of Burundi, representing over 4,000 youth aged 15 to 29. They were asked over one hundred questions relating to their perceptions and aspirations for the future of their country, although the platform currently only showcases data from answers to 26 of those questions.

Figure 15 Screenshot of the homepage of CENAP's participatory analysis platform

With the correct credentials, a user lands on a homepage (see Figure 15 above) where s/he can select one of five themes: human and civic values; democracy and political tolerance; civil society, media and ICTs; gender equality; and education and personal development. Each theme has its own tab in what looks like an analytical dashboard (as shown in Figure 14 above), and within each tab, users have the possibility to select

various combinations of questions and demographic variables. There are 26 questions overall on the platform and 5 demographic variables as follows:

Demographic variables

Questions	Answer options
HH1. Location type	1. Urban: mu gisagara 2. Rural: Mu gihugu hagati
Colline	Code
Q4. Gender	1. Male 2. Female
Q5. Age (since last birthday)	Number
Q8. Religion	1. Catholic 2. Protestant 3. Muslim 4. Adventists 5. Jehovah's witness 6. Traditional 7. No religion 8. Other
Q13. Education level (highest attained)	Level code

Survey questions included in the PA tool

Question	Answer options
Module 3: HUMAN AND CIVIC VALUES	
Q14. As a young person, are you proud of your country?	1. Yes 2. No
Q25. Do you deem the following acceptable or unacceptable: 1. Acceptable; 0. Unacceptable	A. to cheat while nobody is supervising you – B. to ask for a bribe in exchange for a service – C. to suggest a bribe in order to receive a service – D. to lie in order to gain an advantage or special treatment – E. to cover up for a relative or friend who has committed a crime - F. to favour recruiting members of your family – G. to favour recruiting members of your region – H. to favour recruiting members of your ethnic group
Q25A. Do you deem cheating while nobody is supervising you acceptable or unacceptable?	1. Acceptable; 0. Unacceptable
Q25B. Do you deem asking for a bribe in exchange for a service acceptable or unacceptable?	1. Acceptable; 0. Unacceptable
Q25D. Do you deem lying in order to gain an advantage or special treatment acceptable or unacceptable?	1. Acceptable; 0. Unacceptable

Q25F. Do you deem favouring recruiting members of your family acceptable or unacceptable?	1. Acceptable; 0. Unacceptable
Q25H. Do you deem favouring recruiting members of your ethnic group acceptable or unacceptable?	1. Acceptable; 0. Unacceptable
Q26. Do you feel it is necessary to respect the order in which people arrive 1. Yes 2. No in the following cases:	A. At the doctor's B. Administrative service C. GEtting on the bus D. At the bank/microfinance institution/cooperative
Module 4: DEMOCRACY AND POLITICAL TOLERANCE	
Q27. Are you member of a political party?	1. Yes 2. No
Q28. If not, are you personally motivated to become a member of a political party?	1. Yes 2. No
Q29. If not, why?	1. Lack of consideration for youth 2. Disappointed by political parties 3. I don't know how political parties work 4.. Other: input
Q30. If yes to 27, why have you become a member of a political party?	1. Possibility for socio-economic gains personally/ 2. Space to express my view on life in the country/ 3. To promote democracy 4. Other: specify
Q31. What do you feel would be the most appropriate number of political parties?	1. 1 2. 2 3. 3 to 5 4. 6-10 5. Over 10
Q32. Are you hopeful that a culture of political tolerance will be effective for Burundian society?	1. Yes 2. No
Module 5: CIVIL SOCIETY, MEDIA AND ICTs	
Q33. Do you belong to an association?	1. Yes 2. No
Q34. Would you like to belong to an association?	1. Yes 2. No
Q35. If so, what type of association?	1. Human rights

	2. Development 3. Peacebuilding 4. Professional association 5. Cultural association 7. Other
Q36. What has or would motivate you joining an association?	1. Possibility for socio-economic gains personally 2. Space to express my views and opinions 3. Philanthropic reasons 4. Networking opportunity 5. Other: specify
Q37. What is your main source of information?	1. Radio 2. TV 3. Written press 4. Online press 5. Social media (facebook, twitter, whatsapp…) 6. Word of mouth
Q38. How often do you consult the source mentioned in Q37?	1. Very often 2. Occasionally 3. Rarely
Module 6: GENDER EQUALITY	
Q48. How satisfied are you with the process made in the fight against gender discrimination?	1. Very satisfied 2. Satisfied 3. Not satisfied
Q49. Are you in favour of women and girls having the same inheritance rights as men/boys?	1. Yes 2. No
Q50. If you were to have one child only, which sex would you prefer?	1. Male 2. Female 3. It does not matter to me
Module 7: PERSONAL DEVELOPMENT	
Q60. Rank 3 of the following that would allow you to be happy:	A. Peace and security B. Justice for all C. Basic subsistence D. Luxury goods E. Means for development F. Starting a family G. Formal education H. Good health I. Other: input
Q62. If you could choose your employer, would they be:	1. Yourself 2. The state

	3. A private company 4. NGO 5. Other: specify
Q68. At the end of your studies, which sector/activity would you like to engage in?	1. Education 2. Justice 3. Health/medical 4. Building/construction 5. Banking/insurance 6. Technology/ICTs 7. Politics 8. Church 9. Security 10. Transport 11. Finance/accounting 12. Entrepreneurship 13. Other: specify
Module 8. EDUCATION ET EPANOUISSEMENT INTELLECTUEL	
Q71. What education level do you aim to achieve?	1. Basic level 2. Secondary 3. Baccalaureat 4. Master 5. Doctorate
Q72. Does the industry/section/faculty where you are currently fulfill your aspirations?	1. Yes 2. No
Module 12: GENERAL QUESTIONS AND PRIORITIES	
Q101. If you were in charge, what would be your priorities among the following options? Put before each priority 1 = High priority 2 = Medium priority and 3 = Low priority	Q101 A. Justice, Peace and Security Q101B. Arts, culture and citizenship– Q101C. Education and new technologies Q101D. Environmental protection – Q101E. Agriculture and cattle rearing- Q101F. Population and development – Q101G. Health and wellbeing among the population Q10&H. Freedom of the press, of opinion and conscience - Q101I. Human rights and gender equality

	Q101J. Strengthening institutions and ensuring separation of the executive, legislature and the judiciary. Q101K. Healing and reconciliation- Q101L. Economic reforms and youth employment- Q101M. Regional integration and globalisation: Q101N. New information and communication technologies Q101O. Other: specify

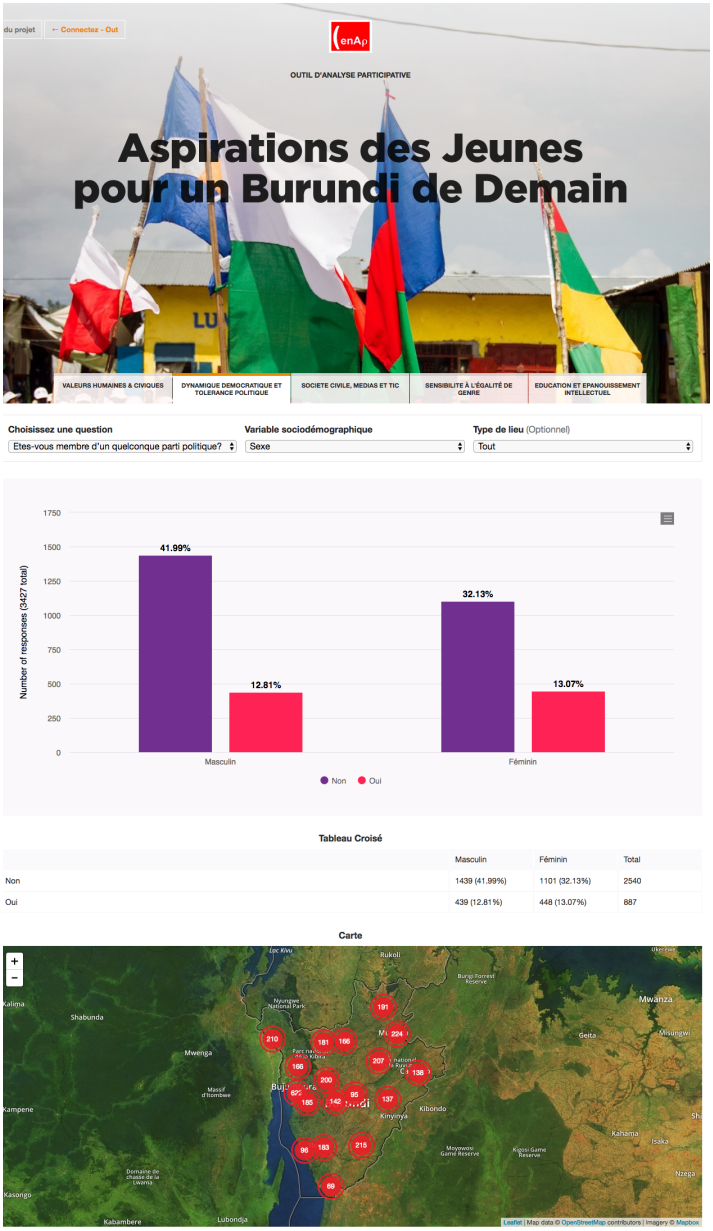


Figure 16 Screenshot of CENAP's platform's visualisations

The backend of the platform is a simple database where the data collected for the survey using smartphones and the CS Pro software are imported. On the website, within each tab, users can combine the above questions and demographic variables with a rural/urban option each time. Each combination automatically updates a series of visualisations: a bar chart, cross tabulation table and a map of Burundi. For example (see Figure 16 above), for the question 'Are you member of any political party?' by gender, the table shows that 12.81% of male youth and 13.07% of female youth answered 'Yes'. The map below the graph breaks down the answers by surveyed provinces.

Through these functionalities, the affordances intended for users are:

- Visual thematic overviews of the data
- Individual interactive manipulation of the survey results
- Ability to take and save a snapshot of a query, graph and map

This can technically be undertaken as individuals or groups, and user accounts can be created to allow a large number of people to have access. While the platform was developed collaboratively with the entire CENAP team from July 2016, the team first got to test it on 24 April 2017, one month before the workshop organised with their Steering Committee and Program Support Group. From that moment more concrete ideas began to emerge as to how this tool would be useful for CENAP, and further affordances were considered. For example a CENAP researcher interviewed describes his reaction to testing the platform:

> 'But when the first part of the tool finally arrived, when we put the data into it, and when we saved various graphs… but… we said to ourselves – wow it's very cool because everyone can use it. So it went beyond our hopes and expectations. Because I have to say that we were rather worried.' (Emmanuel, June 2017)

Indeed from digital ethnographic observations and interviews, it became clear that still at this point there was little clarity as to how the tool would benefit CENAP's work. The main debate internally referred to whether the platform was and should be used as an internal research tool or whether it was 'only' a participatory analysis tool to support dialogue and provide a qualitative validation of the quantitative data.

For it to be a research tool, features were missing, which meant that CENAP could not use it as such. During an internal meeting I observed in Bujumbura in May 2017, the team discussed the danger of only using '5-10% of this powerful tool' and emphasised the need to maximise its value for the organisation after the year-long investment in developing it.

As a tool to support dialogue, simplicity of use and interpretation were a key requirement for the ability to interactively combine a selection of questions and demographic variables to discuss the results. Here the internal debates centred on the number of questions needed, how easy it would be to save a certain snapshot of the analysis during discussions and what tables or maps would be most helpful to facilitate the data analysis from lay people (ethnographic observation of the development work and meetings between CENAP and ELVA). But there was also a desire to go wider and include a 'forum' functionality to allow for discussions with the diaspora and other key stakeholders not present in the country. This was reiterated in an interview with Jacqueline:

> 'To foster [debate] a little why not at a certain point if people want it present those ideas to those who are not present, or those who do not regularly use the web. So I think that is an option. And I remember we talked about giving users the opportunity to leave comments. The only challenge for us is to say whether this is the right time to make such a platform accessible to all online.' (Jacqueline, June 2017)

Some of these debates resulted in negotiations with the developers or with myself. For example with the screenshot functionality to save a snapshot of analysis during the discussions, the developer was unable to build that in and suggested a browser extension instead. In terms of the forum functionality, my advice was to take this process gradually, and focus on a managed and facilitated approach to begin with to minimise the risks of misunderstandings or misuse. But as always with CENAP, inputs from their wider stakeholders would determine what modifications the platform would see implemented iteratively. So we now turn to the testing of the platform, how this was designed and the reception the platform got during and after testing.

6.2 Participatory analysis in practice

So far I have explored the elements of this example of peacetech practice - the intentions and motivations for introducing a participatory analysis platform to the work CENAP conducted on Burundian youth's vision for the future, and the affordances designed in the platform. We now turn to its implementation with key stakeholders in the form of a testing workshop and the feedback received from participants. I observed the workshop in Bujumbura and explored what I had found relevant in all my subsequent interviews with the CENAP team and workshop participants. These observations highlights some of the processes that linked the elements of this practice together.

6.2.1 Testing the participatory analysis platform

> 'And in terms of the analysis, we saw that this actually works' (Didier, May 2017)

By all accounts, the workshop and the introduction of the participatory analysis platform were a success. This is best illustrated in the words of some of the participants – both from CENAP and from the Steering Committee and Program Support Group:

> 'OK, so first of all there was no reluctance. Nobody said – this tool is nonsense, it is useless. Nobody. Everyone recognised that it was interesting, innovative. Even the very first reaction – from [a high level government official] – was to say: have you thought of protecting this tool because I can see this is something worth protecting [in terms of intellectual property]. That was his first reaction. When I was presenting I was a bit concerned because everyone was looking at me – I was wondering if they were understanding me… but when they started using the tool, they got it so quickly and reacted: they gave their opinions, they even suggested improvements that were really relevant and useful. They managed to pull out relevant analytical points too, for example with the percentages. These are things we saw we need to improve. So my general impression was that I was very pleased with how people reacted. And they didn't want it to end. They wanted to continue with the discussion. And what surprised me as well, is that I had wanted to split the workshop into three stages, but the stage of analysis happened well before I had hoped.' (Didier, May 2017)

> 'And I am happy to see that they understood and that even at the end they themselves were suggesting that we present this tool to politicians, to government representatives from the Ministry of Education, because they have questions for example on the education or school reforms they are currently undertaking. And therefore they need insights from this data. They can use it and they can also help us better interpret them, better understand them. And so that was satisfying to me because we were able to achieve this objective – that they could understand this tool and that subsequently they were able to suggest different perspectives, different ways to use this tool and who we could use it with. That is what interests me.' (Jacqueline, June 2017)

A first notable reaction is the relief felt across the team at CENAP that most of the participants understood and supported the use of this platform (more enthusiastically in fact than CENAP could have imagined). But more than answering the initial fears of the team, this shows that the design of the platform was clear and simple enough to cater for users who are not versed in statistical analysis – either in terms of process or software

traditionally used for this purpose (SPSS, etc). This was illustrated by a member of the CENAP team who noted:

> 'Because you know SPSS is a piece of software that's true, but neither SPSS nor CS Pro are within reach for most people, if you like. You need advanced training to be able to use either. That is not the case for the participatory analysis tool that you have developed. Because all you need to know is how to read or write in order to use it. Some people in the room when we were testing the platform with the Steering Committee and Program Support Group, they are not scientists. Some are literature graduates, some are politicians, some of course do have university degrees. But some do not. But all were very comfortable using this tool. And this an enormous difference [from the other software] especially in terms of functionalities, in terms of understanding and ease of use of this tool.' (Emmanuel, June 2017)

It was mentioned by one of the workshop participants more directly:

> 'Seeing the method used, it's a new method, but it's a very easy tool, which makes the analysis easier. Because you can see, you can compare several data, several elements at the same time.' (Anaïs, May 2017)

The simplicity of the platform, intentionally designed in that way, thus enabled a broader range of stakeholders to take part in a process of reflection and analysis with the potential to positively contribute to better governance and effective policy making in Burundi. This was true of the small number of participants to the testing workshop, but there was consensus that it could easily be extended to the wider population. In fact there were demands for that in the testing workshop as illustrated by the following quote from an interview with a CENAP staff:

> 'For me the biggest worry is because [the workshop participants] really suggested we present this tool in order specific contexts… but then I thought what if someone else asks to be granted access. It is true at the moment we are not giving access to the general public… but at some point this demand will come, and the pressure for it will increase.' (Jacqueline, June 2017)

So early evidence is promising in showing that participation can be broadened – to the research's Steering Committee, Program Support Group, potentially to politicians, government officials and policy makers, and finally to the wider public. However as a workshop participant mentioned in an interview, the fact the platform is in French and English rather than Kirundi makes it harder to use among a general population that is

80% illiterate (Evelyne, May 2017). Secondly as the quote above shows, participation from the general population is not necessarily desirable in this case. Later in the interview the CENAP staff member elaborates on the perceived risks to be considered before opening up platform use:

> 'So I am wondering how we are going to put in place the necessary checks to make sure the platform is not used maliciously, or the data badly interpreted.' (Jacqueline, June 2017)

The risks relate to the conclusions drawn from the data displayed on the platform that could either become inflammatory, or pose a risk to the organisation if used for divisive purposes. In fact from my ethnographic observation of a team meeting in Bujumbura in May 2017, this issue was explicitly discussed and balanced with the need to maximise the value of the platform built over the course of a year and for which a significant amount of time was invested. There seemed to be a dilemma between the need to use the platform to its full potential and the risks associated with letting the larger public have access to the platform and its data. I discuss the notion of value maximisation more in the following Chapter. But the important point in this section is that broader participation per se is not necessarily conducive to more peaceful processes and more successful peacebuilding. This is echoed in the literature and in the interviews I conducted earlier on in my research. As one of my Advisory Panel member states, 'peacebuilding organisations are often compelled to stay away from political processes at the risk of losing the perception of their neutrality, which allows them to operate in complex post-conflict environments'. Therefore being a conduit for broader participation in this sense can pose severe risks to any organisation. Some of the interviewees however recount a particularly striking moment during the testing workshop in Bujumbura where politicians from opposing parties were invited to test the platform together at one table and discuss the results they were querying themselves:

> 'Ah them! (laughs) Their first instinct was to look at the 'democracy and political tolerance' section and every single question. As they belong to two different parties, one is from the opposition party and the other from the party in power. With them, for each bit of information, you could see there was a discussion. Each wanted to interpret, give his own arguments. And we could see it was not resolved. We could see that both perspectives made the data richer. They wanted to know why young people go into political parties. They were asking questions, they were saying – I remember one of them saying 'there is a conflict of generations. Young people at last want to go into political parties to build democracy'. But the other one was saying: 'Wrong! They are just saying that

> because they feel it is the right thing to say, it is noble and prestigious, when all they want is better economic prospects'. So it was interesting. At any rate these two had great exchanges, right from the start.' (Didier, May 2017)

This shows that another affordance that was designed into the platform – the ability to query questions and visualise the results generated discussions, as it was intended. The same CENAP staff member attributed this mainly to the platform:

> 'Yes! There was such enthusiasm! And the platform itself makes people talk, discuss, express ideas, opinion, express what they think.' (Didier, May 2017)

Another member of the CENAP team further elaborated on the idea that there was something about the technology itself that facilitated the process of constructive dialogue among the workshop participants:

> 'And the discussion that took place between the two people, one from the opposition party and the other from the party in power, was more to see where people are likely to aspire to join political parties. And they were talking, teasing each other, and laughing. And – how to say it – it brought another dimension: not just a research dimension or one of reflexion, but also one of dialogue. This is to say that people who are traditionally opposed in their political opinions can still have a discussion and do so in a constructive way. This does not necessarily happen when you use other strategies. This tool captivated their attention and somehow made them forget their differences. And this time they are thinking together about finding a solution, together. It was really very interesting.' (Emmanuel, June 2017)

There are two important points to emphasise: first that the platform was successful in fostering useful and interesting conversations around key topics from the research, thus enriching the research output. And secondly and at the same time this process enabled a more meaningful, deeper form of participation by key stakeholders that generated enthusiasm for the overall project but also enabled the creation of stronger connections with other stakeholders around the material displayed on the platform. Interestingly, the former was an objective of the platform from the start while the latter was observed as part of the testing workshop. More testing is needed to establish whether this can be considered a trend, but the potential undeniably exists. Participants to the workshop provided useful feedback for what they would like the platform to be, that is to say in the terms of my thesis, they suggested additional affordances for consideration.

This supports the participation discourses discussed in Chapter 4 and shows that there is potential through technological affordances to enhance participation beyond the traditional peacebuilding model of intervention. However whereas the implementation of the participatory analysis platform does not require intervention, its development did, as I address in the following Chapter. There were also other considerations beyond the technology to enabled implementation.

6.2.2 Other considerations

I have shown the successful results of the participatory analysis test with key stakeholders and shared some explanations for this success. The argument so far is that the affordances of the platform allowed and enabled the participants to successfully perform a participatory form of analysis of the results of CENAP's survey on Burundian youth's vision for the future. There are however additional considerations that need to be taken into account to better understand the reasons for this success. I have separated them into a distinct section because they are seldom part of the peacetech discourse and are mostly excluded from the narrative around the potentials of ICTs for peacebuilding.

6.2.2.1 Existing process

A first consideration is that this platform was not launched as a standalone project. Rather it forms part of existing research. A workshop participant external to CENAP recalled:

> 'When we were informed about the workshop following the first phases of the research, I was eager to see how the data collection went, because as a member of CENAP's Steering Committee, being one of the people who validate this work, and that this work was done on Burundian territory, I was eager to see what had been found in the field… We saw that this work had been carefully undertaken, in a scientific manner and we saw this had really been done in the field. It wasn't just something done on a computer on the web, it is real work.' (Anaïs, May 2017)

This demonstrates the importance of the offline dimension of this work. Especially in a sensitive or conflict context, the fact that there was evidence of working on the ground, in the different provinces across Burundi meant a lot when it came to introduce a web platform and formed an important part of the reason why the latter came to be accepted.

Secondly the way that the platform was introduced to these stakeholders was also carefully managed. A good example of this is the way the testing workshop was

designed. A first consideration to test the platform was the format this would take. There were great concerns among the team discussed at the pre-workshop meeting I attended. A first set of questions was broad and related to the overall purpose of the platform: what sort of analysis would/could be conducted? How would we ask people to do that? Would they understand or even be interested, or feel that broader participants such as those of the National Dialogue Forum for example would be? These echoed much wider concerns held throughout the months of the platform's development by the majority of the team at CENAP as illustrated from the following quotes from my interviews.

> 'My worry – I wondered if people might not take a long time to understand, to understand what we are expecting from them, and what this tool will be used for. But frankly I was very pleased. The way they associated the use of this platform with the research they took part in, and they gradually took ownership of the results of the research they are waiting for. But they also understood how useful and valuable the platform will be. Not just to get results of the research, but to use it as part of the research, by focusing on things that interest different people. That is what I very much appreciated. I was very please and I am very confident that once the platform is completed it will be very useful and valuable.' (Evelyne, May 2017)

> 'The worry was whether they could accept that we should show them how to use this tool – as in we are effectively showing them how to use a computer… won't they say – no I can see how this works… and so my fear was this… for them to say we were patronising them when they can easily see how it works. But in actual fact they were patient, receptive on how to use the tool and on Jean Marie's instructions. I know it was a bit difficult at the start, as I was saying earlier whenever you introduce something new there is always the impulse to ask questions and maybe not to listen too much to what is being said initially. And to say: 'what are you showing me? We need results'. Because traditionally, in what they are used to, after the research phase when you have the data, they are processed, analysed and results are presented. There is not step in between data collection and presentation of the results.' (Jacqueline, June 2017)

A second set of concerns related to the workshop itself in terms of sequencing the introduction of the platform with time to use it. Jean Marie and I worked on his presentation and we agreed a structure whereby another researcher would present the status of the research, then Jean Marie would introduce the platform via a short demo. After that participants would be invited to find a particular answer to a question in one of

the tabs to get them to navigate the platform. A third section was going to be a practice analysis and discussion of some of the results.

There was then a debate as to how best to split the room. My recommendation was that small groups should be formed, but the CENAP team decided that two participants per computer would be enough to give them the opportunity to interact with the platform themselves.

This shows that there was acute awareness that even if the functionalities of the platform and its affordances were well received across the CENAP team they might not be with a wider range of stakeholders. There were concerns over introducing such an innovation (a platform and a process) – would it be understood or accepted? This is rarely raised in peacetech discourse, which focuses more prominently downstream, when all is up and running, on impacts and consequences. I want to show that any of these considerations is a potential barrier or incentive for the implementation of peacetech. And in the case of CENAP, additional strategies were put in place to maximise the likelihood of acceptance. While these may have contributed to this, acceptance also rested on the position CENAP has as a trusted actor in Burundi.

6.2.2.2 A trusted local actor

My ethnographic observations show that the CENAP team was very worried about presenting the platform to their key stakeholders, and one reason for this could come from the years of efforts spent into building essential relationships and the trust mutually established along the way. One CENAP team member aptly illustrates this point:

> ‘And here I attribute [our success] to two main reasons: our way of working and our way of identifying participants. It is true that the working group we had gathered for this workshop, included people with roles in the direction and management of all aspects of life in Burundi. But we maintain that we have to identify people able to understand what we are trying to accomplish. This means people of a certain level, able to understand our work, which includes the research. That is one thing. But aside from understanding the research, we also need these people to be able to add value to the research. Both in terms of understanding what it is useful to their work but also for life in Burundi. And that was part of this productive collaboration. These are people who know us, who value our work and are able to understand it… People that we know and respect and who would appreciate this approach, the platform and the inclusion of new technologies.’ (Evelyne, May 2017)

And this was echoed by a workshop participant:

> 'Of course technology evolves, but in terms of the trust, in terms of how reliable the results are – of course as the Steering Committee we were there – but also the team. We trust the team. We know they are Burundians, and they went out in the field. If you think of other types of research, this work has credibility.' (Anaïs, May 2017)

From the above quote it is clear that CENAP benefits from a trusted position. Its way of working over the years has meant that a very broad range of stakeholders in Burundi's political and social life – from government to civil society to political actors – are comfortable getting involved in and supporting their work in words and in deeds. And according to many CENAP team members that was instrumental to the success of the workshop, perhaps even more so than the platform itself, as illustrated in the following excerpt of interview:

> 'And without this prior consensus, this prior buy-in, they could easily have said that this tool was nonsense, that it was of no interest to them. So it depends – on who brings this up, who introduces it and how… so it is not enough to say technology is available to everyone… no it is definitely not enough to say that.' (Didier, May 2017)

These considerations sum up the gist of my argument. Highlighting that there are additional considerations to evaluating the introduction of a new piece of technology in a peacebuilding context is seldom articulated in peacetech discourse. And while the considerations mentioned in this section are specific to the work of CENAP, we can extrapolate that looking at the processes within and around which the technology is integrated and the roles and positions of the actors involved are equally as important as the types of affordances of the technology itself in bringing the different elements of peacetech practice together.

6.3 Who participates and how?

Coming back to the broader implications of this case study, from the start the objectives of the participatory analysis platform were to leverage participation at the project level with a desired impact at the peacebuilding level. Indeed CENAP has long navigated a complex socio-political environment to bring their nationwide research to the attention of political officials, policy and other decision makers. 'Participation' has always been central to CENAP's work, as illustrated by their Participatory Action Research (PAR) approach

methodology. There are many forms of PAR. Reason & Bradbury (2000, p.1) define it as 'a participatory, democratic process concerned with developing practical knowing in pursuit of worthwhile human purposes, grounded in a participatory worldview… [and bringing] together action and reflection, theory and practice, in participation with others in the pursuit of practical issues of concern to people, and more generally the flourishing of individual persons and communities'. In order to give decision-making power to a broader range of stakeholders beyond CENAP and its Board or donors, CENAP formed a Steering Committee, and Program Support Group and a National Forum. The Steering Committee, composed of local stakeholders of varying influence on local and political processes, is involved in key decisions. For example they came up with the title and focus of the research for CENAP's current work on Burundian youth's aspiration for the future. The Program Support Group includes donors and potential donors who are kept informed of progress and have the opportunity to contribute suggestions for new or different approaches. These selected stakeholders, members of the Steering Committee and Programme Support Group, provide CENAP with access, protection and the chance for more meaningful impact. Members from these groups were consulted throughout the project on the wider research as well as the development of the participatory analysis platform.

The idea was then to include the use of the participatory analysis platform during the National Forum workshops. The National Forum includes representatives of a wide range of stakeholders from all regions of the country. This aims to ensure the work – and more specifically the research – *belongs* to 'Burundians more broadly rather than just CENAP' (Evelnye, May 2017). In that sense participation for CENAP entails wider ownership of the research to enhance the broad legitimacy, buy-in and trust in the research results, thus paralleling peacebuilding scholarship on participation and local ownership. Indeed CENAP enhances the quality of its participation in Burundian policy making by ensuring broad participation and inclusion in its work both vertically – from communities and populations to government officials – and horizontally by including representatives from different political orientations, social, economic and ethnic backgrounds. As such it positions itself to represent a conduit of participation into the policy-making processes in the country.

In this particular case the participatory analysis platform contributed towards this greater participation by enabling the voices of over 4,000 young Burundians to be included in policy-making through both data processing power and an innovative participatory analysis process. Indeed according to one CENAP team member, the lower number of participants in their traditionally qualitative research became an obstacle to their effective contribution to policy-making:

> ‘And the comment that kept coming back to us was that qualitative research cannot reflect the reality of the country, in the sense that the number of people consulted is not enough to generalise the information.’ (Jacqueline, June 2017)

In this case, CENAP involved over 4,000 youth on top of 375 they had in focus groups discussions, including street children, disabled youth, fishermen, and other groups that are often marginalised. They were representative of Burundian youth from every province (except for one), both genders, in and out of school and with all ranges of education levels. By giving their information as part of the research, the team at CENAP as well as the Steering Committee and the Program Support Group felt that they had all participated in the research and its wider policy implications. One government representative for instance said that:

> ‘Because young people, they are our children, it’s the Burundi of today and of tomorrow. So we are eager to see what are their true aspirations, the feelings that our youth has for its future, their own and that of our country.’ (Anaïs, May 2017)

And a member of the CENAP team added the following remark:

> ‘And this breaks down the distance between high level decision makers and the local population. And that is what we were trying to do with this tool and quantitative data… Well it is true young people expressed themselves. It was in a village somewhere with an enumerator. But now this is going to reach those who make the decisions, who will be able to use this information. And as you probably felt, they [the decision makers] are insisting on this information going back to the young people, and back again afterwards. So they would like young people to validate our findings again and that the adults take ownership and learn from this information.’ (Didier, May 2017)

This highlights the feeling that the participants in the research have contributed to – and thus participated in - policy-making at the national level, and there were calls for their continued participation into the subsequent analysis of the data collected via the survey:

> ‘First we ask ourselves this question: who is the platform’s target audience? There are those who have undertaken the research, there’s CENAP, but the research was done in and on Burundi, with Burundians from different sectors and social classes. And there were many of us involved with youth. And these youths, we are alongside them, and even the enumerators may ask themselves: ‘once we did a survey – what came out of it? Why did we do this work?’ (Anaïs, May 2017)

This shows the possibility for the participatory analysis platform to bridge the gap between elite/policy makers and local communities. As a result, it would have the potential to broaden and deepen participation by including more people and giving participants the opportunity to contribute more meaningfully to policy decisions on youth or other programmes, as the following shows:

> 'This is where I can mention that this tool is very necessary, if we could have this tool in several sectors, because we can see what is going on, what is there. And from what you see, from this tool, you can even think of ideas, or others can contribute to building our country, or to the planning that can be done for our youth, because we are now able to analyse different elements simultaneously.' (Anaïs, May 2017)

And there was significant enthusiasm in the room regarding the practical implications of using this innovative approach. First that it would be welcome and second that it had the potential to be effective in influencing policy, as described by this participant:

> 'I have good hope that this work will be welcome with open arms. Yes I am hopeful – I remain convinced that the tool is very necessary. I think from starting this research, CENAP has involved us along the whole process and I think as we are people involved in education, with children, with administrative or territorial authorities, and I think the fact we have been involved in the process even before going in the field, we have validated this research. The role of the Steering Committee is to be messengers in our respective contexts. Because the research is about our youth, our Burundian youth. Our aspiration, our wish, is that tomorrow or the day after tomorrow, we have young people able to build themselves up and to build our country. So I am strongly convinced the tool will be available.' (Anaïs, May 2017)

> 'Yes, as I mentioned this is a very important tool. I think that my vision would be that… because when you want to build a house, when you want to build the nation. To build a house, we say – I have five children and so my five children will need healthcare, education, and this tool shows us what is on our young people's hearts.
>
> That is why I was saying this tool could be a basis for decision makers, and I also think this tool will help us get young people involved in the planning of what we can do to make young people more autonomous. Because in order to have a peaceful country, and to be able to say our young people are dynamic, they need to be independent, financially and socially. And I talk about independence for

children and young people, but they need to have food, access to schools and healthcare. So the tool can influence decision makers in our peacebuilding process.' (Anaïs, May 2017)

'My comment is that once the research is done, once the tool is ready perhaps, we need to carry on, we must not stop there. If we found something out through it, what can we do about it now? In our action plans for young people. Because this tool is not here to be kept in a drawer, maybe one day it will be available to all; and after that happens it will certainly be taken into account in various action planning. That is what I think.' (Anaïs, May 2017)

These comments are very positive in their assessment of the potential for the platform in influencing policy, but they also highlight a series of potential limitations. First, the platform and participatory analysis process have not yet been widely tested. The pilot workshop discussed in this Chapter was with a small number of key stakeholders from the Steering Committee and Programme Support Group. However as described throughout the Chapter these people hold key positions in Burundian social and political life and their opinion on the benefits and potential of the platform can be considered informed and relevant to our context. Second, for far broader participation, language remains an issue as illustrated by the following comments:

'Yes the tool is in French and English. That is perhaps the language that was easy for the development. But looking at the technology used, and the project partners, they do not speak Kirundi. But I was thinking since the survey was conducted in Burundi – the level of understanding of French even is not great. Even less so for English… That is one reason why [I would like to see a translation into Kirundi] – because as far as the literate Burundian population – so that they can understand at least the main ideas from the research and the tool. Maybe the graphs and tables are hard to understand, to interpret, but at least it is a research that is conducted in Burundi and Kirundi is an official language. Of course we are focusing on English as a language too. It is taught in schools. But the research included schooled and non-schooled youth. That is why we would like it to be translated into Kirundi. At least the main points. That is my wish, as far as it is possible.' (Anaïs, May 2017)

Third, as intimated in a comment above, the issue of sustainability is important. Once this testing phase is over, what happens? And while the 'public good' element of the work is undeniable for all involved, there remains a very practical logistical question of financing the further development of the platform and the work needed to use it.

Finally, the ability for the analysis to influence policy is most effectively actualised within a constructive, carefully manage process. As mentioned above, there is always the risk that the data will be used for divisive purposes or 'badly interpreted' (Jacqueline, June 2017). This is rather political, in a politically sensitive context and therefore carries with it a number of risks that one organisation only has so much power to mitigate against. However the specific position of CENAP in Burundi, and its existing participatory approach put it in good stead for a positive contribution to youth and education policy development, where their participatory analysis platform has the potential to play an important role in bringing more people more effectively to the discussion table.

6.4 Peacetech practice-as-performance: participatory data analysis

In this Chapter I have used the case study of CENAP's work to introduce as PA platform to analyse quantitative data in order to influence policy and peace in Burundi as a way to explore in more details the dynamics of peacetech practice. Indeed the practice lens adopted in this thesis demands two kinds of empirical perspectives: one concerned with the elements that constitute a practice – its materials, competence and meanings; and a second one concerned with how these elements come to be linked together in practice. According to Shove et al. (2012), practices emerge, are maintained and disappear when the links between elements are created and broken.

My analysis has shown that participation was both broadened and deepened in the project, with potential implications for peacebuilding more generally. This could not have been achieved without the technology itself and its affordances. Indeed the platform afforded users the ability to become part of a process of analysis traditionally reserved to those able to access – and with the skills to use – complex, expensive proprietary software in order to provide their interpretations and meanings on the analysis of data traditionally undertaken by researchers. This shows that the potential for technology to support more inclusive and participatory peacebuilding processes is demonstrable. However unlike what is claimed in the discourses discussed in Chapter 4, it is not, as my analysis of the design process illustrates, through the affordances of low barriers to entry and democratisation of use of ICTs, but through a combination of various affordances unfolding within a managed, facilitated process by actors already engaged in peacebuilding at the local level. So equally as important as the technology itself are the processes in place around the use of this technology, the actors involved and the trust they hold with other stakeholders. More than the technological affordances of the platform, managing the process and CENAP's standing in Burundi were responsible for

successfully bringing this practice into being. Furthermore this demonstrates that the implementation of the participatory analysis platform did not necessarily require reliance on a traditional peacebuilding model of intervention. In fact the evidence presented supports the conclusions on the need for local ownership, or the greater legitimacy acquired through such ownership. But whereas this conclusion relates to the implementation of the participatory analysis platform, it does not address its development. At the end of Chapter 5 I noted that increasingly design considerations to build the technologies used in peacetech emphasised that ease of use, low barriers to entry and the ubiquitous nature of ICTs were not as relevant as emerging peacetech discourses or literature tends to assume. The following Chapter addresses this question in more depth.

Chapter 7 Peacetech, power and empowerment: building a participatory analysis platform in Burundi

> 'The bursts of innovation by regular people who are tackling violence in their communities with readily available technologies' means 'new generations of peacebuilders are empowered.' (Himelfarb, 2015)

This statement is illustrative of the empowerment discourse in peacetech – that new technologies enable new people to engage in new ways in peacebuilding processes; the diffusion of knowledge empowers local peacebuilding and there is a decentralisation of power from the national to the community or individual levels. Details as to how this happens are scarce. However, and as shown in Chapter 5, the vast majority of peacetech projects are still driven or enabled by external funding. So what does empowerment mean in this context? How is empowerment 'granted' – does tech empower? If so, how? And who gets empowered? The democratisation of technology narrative seems to imply that technology being available to everyone means 'peacebuilders are empowered' (Himelfarb 2015). However as I discussed in Chapter 6 on participation, the adoption of the participatory analysis platform CENAP was a difficult process. It took time, investment and will require more of both for it to actually be implemented. There seems to be a rather large gap between the peacetech discourses and these early observations of practice. The actual nature of 'power' implied by 'empowerment' remains vague. Definitions are rarely offered in peacetech literature and discursive practices presented in Chapter 4. The most elaborate conceptualisation of power and empowerment in the context of ICTs for peacebuilding comes from Tellidis and Kappler when they write:

> 'ICTs can be enablers for peace, not because they directly empower the local over the national and international, or the marginalised over the elites, but because they can be used for the mobilisation of grassroots actors, which may affect peacebuilding's balances of power. This is important given that ICTs can act as mediators – that is, according to Latour (2007: 39), to serve as a medium or actor that distorts, changes and modifies the meaning of the elements it carries. In that respect, the mediator's 'input is never a good predictor of their output' (Latour 2007, p. 39).' (Tellidis and Kappler, 2015, p.6)

Tellidis and Kappler adopt Rowland's (1997) understanding of power as productive in a Foucauldian sense – power 'to' rather than power 'over'. In this view, empowerment is

seen as processes whereby social groups are *empowered to* influence others without necessarily seeking to dominate; *empowered with* others so power is shared; and *empowered within* for a more reflexive perspective. As I discussed in Chapter 5, these nuances have not yet widely translated into the peacetech discourse, which often gets shortened to the fact that ICTs have the opportunity to empower communities or peacebuilding practitioners to better build peace.

In this Chapter I examine in more depth the elements and practices involved in developing a peacetech project. In the conceptual framework of this thesis it represents the early trajectories of the elements of peacetech in practice (Shove et al., 2012) – the development of a technology that can then be implemented in a peacebuilding context. Discourses discussed in Chapter 4 often refer to the point at which a technology is used in the field, thus focusing on the outcome of the process of leveraging its affordances. However this omits considerations of what processes were involved in reaching that particular point and what impact they have on the leveraging processes within peacetech practice. This is the question I address in this Chapter. For that purpose, I extend the above definition of *empowerment* as the ability to access previously inaccessible processes or yield novel forms of influence on a different range of actors. I show that even through the Build Peace Fellowship process, designed with participation and empowerment at its core, there are still clear issues with the prevalent peacetech discourses of empowerment that equate the availability of ICTs as a sufficient precondition for the emergence of peacetech practices. First I show that the assumption that technology is readily available to peacebuilders is misleading or at least unhelpful. While the perception of the technology among CENAP team members was that it could be empowering in many ways, in house skills were lacking and there were serious fears and doubts about bringing in a new technology and the impact it may have on the programme and the organisation. Second I show that the rather one-dimensional narrative of empowerment in peacetech does not adequately reflect the reality of the process of introducing or adopting new technologies in peacebuilding. Rather all actors involved have different, sometimes complementary and sometimes competing agencies that come together to produce negotiated outcomes. A closer look at some examples of these negotiations and the considerations and constraints that drove them provides a better explanation for the kinds of empowerment resulting from these processes. And finally I discuss how the sociotechnical approach and practice lens adopted in this thesis allow me to explore the impacts of prevailing best practices in peacetech on empowerment processes. I show that both capacity building practices and user-centred design need reframing to fulfil their original intention of empowering local peacebuilders to build peace. Indeed I argue that saying new technologies empower local peacebuilders is

somewhat tautological – with new ICTs come new affordances. What is more interesting and relevant for the questions at hand is to examine the ability to effectively and strategically use these ICTs for peacebuilding. Because as I show in this and the previous Chapters, these processes are much more complex and uncertain. This shift in perspective from the existing peacetech discourse has wider implications for peacebuilding policy and practice. It means that rather than focusing on access to new technologies, there is a need to develop a different model of innovation and technology diffusion across peacebuilding interventions and beyond. I discuss this in greater details in Chapter 8.

7.1 Empowering (local) peacebuilders

Empowerment is the stated goal of a vast majority of peacebuilding projects as well as those that include ICTs, according to emerging peacetech literature shown in Chapter 2 and discourses shown in Chapter 4. In that sense, it seems to be very much an objective of international peacebuilding – to empower local population to build and therefore own their peace. However in Chapters 4 and 5 we saw that the peacetech empowerment discourse is not limited to 'local' peacebuilders, but includes international interveners as well. For example new ways of using passively generated data to inform programming may include local populations and communities as their target audiences, but in light of the origins and funding of these programmes highlighted in Chapter 5, it is clear that the international peacebuilding community seeks to benefits from new technologies also. This implicit conflation is not without consequences when it comes to empowerment and I come back to this point later.

While the peacetech discourse fails to explicitly conceptualise 'empowerment', as mentioned above I define it as the ability to access previously inaccessible processes or yield novel forms of influence on a different range of actors. As such I use the term influence and power interchangeably. Aside from providing some evaluative frame, this conceptualisation also opens up the possibilities for including a wider range of processes and actors in our assessment. And indeed there is an additional consideration rarely taken into account: what kind of empowerment are local actors seeking in this context? Much of the peacebuilding literature groups 'local actors' in one category, though some authors have disputed this view (Heathershaw, 2013; Kappler, 2015) and their need for empowerment is assumed, implicitly taken for granted (D. Chandler, 2013). Instead I want to show that better understanding local peacebuilders' motivations to develop or adopt peacetech practices – or the kinds of power and influence they seek – is key to the effective – or not – enactment of these practices.

In this section I outline the aspirations surrounding the development of a participatory analysis platform by CENAP through the Build Peace Fellowship. I first describe the objectives of the Fellowship – to empower local innovative potential for peace. Then I describe the results of my ethnographic observations and interviews with the CENAP team to show that the different aspirations they had with regards to the introduction of ICTs into CENAP's peacebuilding work in Burundi can be considered various forms of empowering objectives. However I outline some important barriers to adopting new ICTS: a skillset gap, which leads to uncertainty and contribute to driving up the costs of innovation for organisations operating with limited resources in higher risk contexts. This means that the democratisation of ICTs and high rates of mobile phone penetration will not necessarily result in the empowerment of the 'everyday' peacebuilders who often face a shortage of technological skills and high levels of uncertainty that make innovating more costly and therefore less likely.

7.1.1 Bringing peacetech into being: motivations and aspirations

In this section I compare and contrast the aspirations, motivations and underlying assumptions for introducing or adopting new technologies in CENAP's peacebuilding programme from the Build Peace Fellowship and from CENAP. This allows us to better understand the different motives and underlying interests that contribute, hinder or in other ways affect power and agency in the process of developing the participatory analysis platform for CENAP.

7.1.1.1 The Build Peace Fellowship

As outlined in Chapter 3, the Build Peace Fellowship programme was developed to bridge a skills gap on new technologies and peacebuilding. So the initial Fellowship 5-day training course covered areas such as: best peacetech practice around the world; ethical and operational challenges of peacetech; user-centred design and monitoring and evaluation. The aspiration was that by sharing the knowledge acquired over years of work and research with peacebuilders who were starting to work with new technologies, participants would be able to design conflict-sensitive, relevant and sustainable peacetech projects. This training represented in effect a kind of operationalization of the Digital Principles introduced in Chapter 5. And with the availability of this expert support over the course of a year, the objective was to truly embed these processes into practice through accompaniment to pilot. In that way, Build Peace Fellows were to be subsequently empowered to design peacetech initiatives without the need for external support; with the confidence that they could adopt a conflict sensitive (another way of talking about Do

No Harm)[42] perspective; and that their intervention would result in technology development or adoption that are useful, relevant and sustainable.

It is broadly in line with existing peacetech discourse on empowerment that I described in Chapter 5 and rests on similar assumptions: that new ICTs are becoming ubiquitous and are easy to use, therefore the potential is there for everyday peacebuilders to use them, and as such be empowered. Where it differs slightly is in the acknowledgement that this can be a difficult process, that Build Up members have experienced can easily peter out or fail to sustain impact or even activities in other projects. This was the primary motivation for the yearlong accompaniment and the elements of training put together to ensure users were at the centre of the process when it comes to designing or adapting ICTs.

Another difference is that in the case of the Build Peace Fellowship, *using* ICTs is not conflated with the ability to develop, repurpose, and maintain some kind of infrastructure – online or offline – that would achieve peacebuilding goals. Rather the assumption is that these skills, if taught and passed on to peacebuilding practitioners, will empower them to harness the potential of ICTs in their peacebuilding context. This is a slight modification to the discourses presented in Chapter 4 in that it is less the technology

7.1.1.2 CENAP

Peacebuilding is at the core of what CENAP does (see Chapter 6) and the ability to influence peace processes in Burundi is central to their work. From my ethnographic observation of the team at work in Bujumbura, I was able to observe how this central concern is operationalized in practice – through highly skilful stakeholder management and a constant focus on inclusion and participation. The idea that CENAP's work is by Burundians for Burundians and their country came up daily and served to underpin most of the decisions that I observed being made over the course of five months, remotely and in person. It also reinforced the impression I had made working remotely on as a lead mentor on the Fellowship. Most of Chapter 6 is dedicated to an in-depth analysis of this focus demonstrated by the amount of concerns there were around the organisation and facilitation of the testing workshop for example. And the following aptly illustrates this:

[42] Conflict sensitive peacebuilding emerged from the observation that often aid and development initiatives were responsible for exacerbating conflict. Conflict sensitive peacebuilding therefore aims at doing no harm, at understanding that any initiative becomes part of the peacebuilding landscape and must be thought through accordingly. For more information please see (Handschin et al., 2016)

> 'Broadly speaking, we had more hope, we had placed more hope in this tool, and we had imagined pages with tables and a lot of options to use our data. Because if we think back to what we did in 2007, when we identified the challenges to a sustainable peace, we had identified over 100 challenges. But we only got to work on 4 or 5 and it was painful. We thought – are we going to forget these themes that were nonetheless interesting not just for us, but for the Burundian community. Is this going to go the same way? Broadly speaking, just to say that we have placed a lot of hope… especially when we saw how easy this makes presenting our finding.' (Interview 2, May 2017)

However CENAP also had other motivations for the introduction of new ICTs to their work. Initially, they had a series of ideas for the Fellowship ranging from adopting digital data collection techniques to exploring software to visualise quantitative date. Underlying these thoughts originally was a desire to make some of the work easier for the team; the desire to improve existing capacities; personal motivations; and a desire to stand out in the field by innovating and producing work of a higher level of quality compared to other organisations operating in the same field. This shows that considerations that mainly relate to CENAP's operations and performance in the field of peacebuilding in Burundi were equally as important as their central desire to build peace and sheds light on a different type of empowerment driven by their own definition of what types of powers were desirable to them.

As discussed in Chapter 2, peacebuilding literature, including the critique of the liberal peace has an unfortunate tendency to label 'the local' in dichotomy with the 'international', even those who have tried to go beyond this binary perspective cannot quite escape it (Heathershaw, 2013). This is also an issue in peacetech discourse where 'local' is contrasted to international and the fact that it represents in reality a large range of often competing stakeholders is lost. The evidence I have just outlined shows that the use of ICTs is perceived as a major asset in the peacebuilding landscape – locally and vis-à-vis the international community. This is a dimension that is often ignored. Assuming away the need for organisations to succeed in the context in which they evolve deprives interveners of great opportunities for finding sustainable incentives for local peacebuilding organisations to innovate. Because as the following section shows, local innovation in peacebuilding can be risky, and costly, and perhaps often does not take place for those reasons. Taking this into account would allow peacebuilding practitioners who issue funding calls and those who answer them to be better at imagining innovation that has the potential to be sustainable by not only meeting peacebuilding needs but the needs of peacebuilders on the ground. Of course these will be different from context to

context, but an awareness of how important it is to take them into consideration is needed. I show why in more detail in section 7.4.2 below where I argue for the need to reframe the concept and practice of user-centred design.

But these considerations also hint to is that introducing new technologies – at least a range of them as they related to CENAP's survey – was not easily done within the organisation. The next section explores some of the reasons why that may be, and the implications this may have are laid out in section 7.4 below.

7.1.2 Barriers to adoption: skills, uncertainty and the cost of innovation

The remarks and quotes from the previous section show that while web access was available to CENAP and the team already used audio-visual technology as an integral part of their peacebuilding programmes, the ability to build a participatory analysis platform was not straightforward. Indeed there were compelling motivations and powerful aspirations that drove CENAP – not to take on the introduction of ICTs themselves but rather – to apply for the Build Peace Fellowship. In this case lower barriers to entry and wider access are necessary but by no means sufficient conditions for the ability to adopt ICTs in CENAP's peacebuilding work. In other words this confirms that ICTs, or their affordances, are not sufficient to link the elements of peacetech practice together. But rather as I described in the previous Chapter, the Build Peace Fellowship meant that risk was perceived to be low and the potential for benefits high.

Both in the interviews and over the course of my ethnographic observations, I noted a deep-seated apprehension throughout the process of building the platform, pretty much until the testing workshop.

> 'But we were very scared. We knew that there were data collection tools that existed, and data processing ones. But when we were talking about it, we were afraid. It was hard to take the plunge, to decide – are we really doing this? What if it doesn't work, if we're not skilled enough to use these tools; what will happen if we lose all of the data, etc.… So people were reticent and did not really get it.' (Didier, May 2017)

The fear described here seems to stem from a lack of skills and experience of web technologies and software development. Indeed to answer specifically to the fear of losing the data expressed in the interview as an example, knowledge of current cloud storage solutions available through most data collection platforms or tools, together with automatic back up procedures would have served to considerably alleviate these concerns. This is not say that they were unfounded, because the risk is real and

important. The comment refers more to the fear being a barrier to adopting new ICTs. In line with my conceptual framework, the practical understandings that are emerging in peacetech in the blend of peacebuilding and technical expertise, was not shared in this case. Moreover when I spoke to many at CENAP, the idea that they were not sure such a platform could be built seemed prevalent. However it had been agreed from the start it would be a relatively simple adaptation of the existing ELVA platform built by Elva Community Engagement software engineers, and therefore did not represent a challenge in terms of technical development. This phenomenon is not restricted to a peacebuilding context, but is typical of bringing something new that has not been experienced before, as illustrated in the following quote from an interview with a CENAP staff:

> 'It took time for us to be able to understand. And that is a first challenge I think when you try to do something new, it is not necessarily a resistance… but there are often concerns like is it going to work? Will it be useful? Does it not risk us wasting time, or taking time away from the research?' (Jacqueline, June 2017)

And there is also an underlying issue of trust when it comes to new ICTs. This might be related to the notion of control – as described by a member of CENAP:

> 'First off, technology is scary, as I said earlier. Ok I don't know if you can generalise this, but at least here, the older generations for example don't trust technology very much. For example they start staying that they won't have control anymore, I don't know exactly what is going on – you can feel it when you talk about it.' (Didier, May 2017)

Again this is not specific to peacebuilding contexts. But what is more representative of such a context is what is at stake in these processes. The following excerpt from an interview provides a powerful illustration:

> 'At a certain point I have to admit it was not very clear to understand what this training and fellowship was going to be. We really appreciated the opportunity, but every time someone explained it to us more, we were not feeling that reassured… For example there was a meeting where we discussed the status of the Fellowship and the uses of new technologies. And we had been feeling very pleased before we heard in the presentation that he was saying 'if it works'. 'If it works, it is a tool that will allow us to generate tables, or analyse according to different variables depending on the context.' There we were very enthusiastic and very happy. But when he said 'if it works' – we suddenly thought: can it fail? So we asked that question – after so much training and mentoring, so much time

> spent working on this, so many hopes placed on this tool, can you really say 'if it works'?' (Evelyne, May 2017)

This shows that the stakes involved in the process of piloting the participatory analysis platform were high for CENAP. Not so much in that their impact was seen to be riding on being able to use this platform, but rather in light of the limited resources, the feeling seemed to be that with such a large investment in human resources there should be something tangible and valuable to show for it. The notion that all of this might result in a failed experiment was both feared and unfathomable. This could also come down to different individuals' perceptions or to the heightened level of anxiety around the whole process. So this is the internal cost of innovation but another element that became a source of concern for the CENAP team was whether this innovation would in fact be welcome by their key stakeholders. In the previous Chapter I discussed the worries around the organisation of the testing workshop. But another facet of this worry relates to the perceived risk of innovating on existing relationships. As mentioned previously, CENAP operates successfully due to skilful stakeholder management as well as a participatory and inclusive philosophy. This is specific to peacebuilding contexts. As peacebuilders who are at the centre of a complex web of relationships, managing a wide range of interests that do not always converge, the CENAP team was anxious that the use of a new platform, and the introduction of new processes around it be widely accepted. As shown in the previous Chapter this was a major concern and source of anxiety around the implementation of the tool. This tends to suggest that without the type of support provided by the Build Peace Fellowship, this work might not have been undertaken. There does not seem to be anything inherently empowering in the existence and availability of new ICTs in this respect for the work that CENAP carries out. In fact it took a lot of effort and convincing to continue to move forward with the development of the participatory analysis platform. In this sense the Build Peace Fellowship programme can be seen to have taken on some of the internal costs of innovation: the skills and assurance that the CENAP brief would be translated into a working prototype and platform. CENAP on the other hand agreed to take on the risks and external costs of innovation, which in themselves could have been prohibitive. This shows that in order to overcome these obstacles, either the perceived benefits must be significant, which is not the case here in light of the original confusion over the nature of the platform; or the costs of innovating are somehow lowered, which occurred in this example through the capacity building and mentoring elements of the Build Peace Fellowship. Only by reaching a suitable balance are the elements of peacetech brought together. Interestingly, the Build Peace Fellowship, which as I have outlined earlier remains an example of a traditional capacity building

peacebuilding practice, acted as the mechanism that made possible the linkage between the various elements of peacetech practice in this case.

7.2 Empowering how and how empowering?

After showing that bringing together the elements of peacetech into practice is more complex and difficult than portrayed in peacetech discourses, I now turn to a more in-depth analysis of the explicit processes of empowerment in this case study: the capacity building element of the Build Peace Fellowship. While ICTs and web technologies have empowering potentials, the ability to effectively use those new technologies requires investment as well as developing skills, knowledge and experience.

7.2.1 Capacity building as a traditional peacebuilding practice

As mentioned previously, the Build Peace Fellowship is built around the notion of capacity building with the aim of empowering local peacebuilders to design peacetech: without the need for external support; with the confidence that they could adopt a conflict sensitive perspective; and resulting in technology development or adoption that is useful, relevant and sustainable. In order to reach those objectives, the Fellowship had two capacity building components: a five-day training course, and a yearlong mentoring programme. The training course covered global peacetech practices, peacetech design considerations such as information ecosystems (how information flows in a given context), conflict and stakeholder mappings, political space management, user-centred design, monitoring and evaluation, and sustainability planning. The key message can be summarised as follows: if you know the context you are working in, the main conflict dynamics, who are the key stakeholders and what power dynamics are at play, you can identify a target audience for your intervention; by putting this audience at the centre of your design process, you have greater chances of your technology intervention being relevant and sustainable in that context, echoing the Digital Principles presented in Chapter 5. The following statement on the Fellowship experience sums this up:

> ‘The Fellowship has shown us the considerations that need to be taken into account. Whether it was positioning and political space management, how to include the end-users, and thinking about the objectives we want to achieve. For us it was how to involve our stakeholders and partners in the analysis process. How to do that. In any case I’d say I gained the knowledge to enable me to think these things through, and make decisions to introduce this technology. I also got to meet a lot of people throughout the Fellowship, who brought me different

> experiences, showed me other things we could do here. I think in our next projects we might be able to replicate some of the ideas, some of others' experiences. For example at the [Build Peace] conference, there was a lot of information, a lot of people who had tried different things in terms of technology, related to peacebuilding, that we could inspire ourselves from.' (Didier, May 2017)

This shows a recognition that the training provided a useful basis for the implementation phase and development of the technology. In particular, the user-centred design element seemed to have been especially well received:

> 'Well, I think now I have the basis. I think I have the basis, I know that when we talk about web development, I know what elements we need to begin with, the ideas, objectives, and – what's the name of it again – user journey, user-centred design, etc. One needs to know all of this beforehand… Otherwise we don't make it. Now I know how to do it. And I also know that I can look for extra information where I have gaps. If I had to start developing something today, I would know how to talk to those people, at least for them to understand me.' (Didier, May 2017)

It shows that the training achieved most of its objectives in providing the basic principles for the Fellow to design and implement a peacetech project. The mentoring element of the capacity building portion of the Build Peace Fellowship supports the practical implementation of these principles. The intention behind my role was to provide Jean Marie with guidance on his journey to developing the participatory analysis platform. However in practice I ended up taking on two different roles: driving the project through and translating between the CENAP and development teams. Instead of guiding the process, I became a part of it. The analysis of why this happened is important to the empowerment process in this specific case. To do so I draw on in-depth interviews but also on the reflexions I wrote in my researcher journal.

First there was a clarity issue among the CENAP team and at times a mismatch between the requirements of the Fellowship – which assumed the Fellow had full knowledge and decision-making power within the organisation and the programme. However this was not necessarily the case for CENAP where Jean Marie was one of many researchers and deferred most of the programmatic decisions to the rest of the team:

> 'What is the best way to engage with the rest of the team? In any case for me, I was part of an organisation and not always the decision maker… I am a regular

> researcher in this organisation, one of many. But it is difficult to bring new ideas and to get them easily accepted.' (Didier, May 2017)

In practice this meant that he was not responsible for implementing the institutional side of this project – a situation which caused confusion and delays. There was already some confusion around my role, as indicated by this member of CENAP:

> 'And at some point we thought – ah, they themselves are going to help us build the tool. That's why at a certain point we were waiting for you to suggest an approach, or tell us whether we should use this or that. Instead you kept telling us – it is your choice. And here maybe little by little the confusion was lifted.' (Evelyne, May 2017)

Decision-making at CENAP is very decentralised. From my ethnographic observation, I saw that decisions are taken more by consensus, something I had not really understood beforehand. This meant that my mentoring strategy of asking for deliverables in the form of decisions and inputs for the developers all required meetings and further discussions among the CENAP team. The delays that this caused led me to become more involved in the operational side than originally anticipated. The following quote from an interview with a member of the team illustrates this well:

> 'You know everything that we do here is done as a group, in meetings. So we heard about this tool and the Fellowship. So of course at first we didn't really understand anything. We thought – they are going to build us something to make it easier to… to do the analysis and involve our partners in this analysis. So we thought – ok, wow that's good – but we couldn't really picture how it was going to happen.' (Emmanuel, June 2017)

This must have been further compounded by the fears and doubts described in the previous section, contributing to my having to take on more of a driving role in the development of the platform. Nevertheless when no direction came from CENAP in terms of what they wanted to build, I would keep asking the question until they reached a decision themselves. These two impressions of the process demonstrate this point:

> 'Yes I think the process has been useful. It has been quite a demanding process. It is true, and I think others have shared that with you, that at a certain point we were asking ourselves some questions – when is [the platform] going to be here, is it really going to be built? But I think it was necessary for us to take time to understand this tool before it arrived. Because I know there was a long debate to know what truly this tool would be useful for us for?' (Jacqueline, June 2017)

> 'I remember the first trip, he first needed to explain CENAP wishes or requirements, and that those be understood by Build Peace so that you could better help him conceptualise it, build it. Because we have our own demand, but this is a practical one – and could we make it so that you could support it in practice. There was a concept, but was it doable in practice? And I remember that he came back [from that trip] with a better concept. I know he said he had been bombarded with questions so that he could better articulate the project he and we put together… And I think it forced us… every time the ball came back into our court to say think it through, think about your approach, participatory action research.' (Jacqueline, June 2017)

This shows that decision-making power throughout this process rested with CENAP, although in the following section I discuss the constraints that led to some intense negotiations between the developers, CENAP and myself. The last quote above also hints to another role I took on during the mentoring phase – that of translator. This was perhaps the most useful element for the team because it provided an applied example of how to converse with technical people.

> 'I much preferred the way it went. Because you know the language, how to speak to developers, how to manage them, etc. When I think, I think normally. I don't think about the technical implications, the level of effort it requires, etc. or how to simplify so that everyone understands. So your role is important in this connection between us and the developers. Of course there were times where we spoke to them directly. And you were also there to see whether that was clear. Requests could be vague from our part, because we don't know how the process works.' (Didier, May 2017)

This shows that on the one hand, the drive to get the project done came from me. It was externally driven in a sense, although by that point I was considering CENAP's interests as though I belonged to the organisation. On the other hand, all of the technical features and elements of the platform were decided by the team in Burundi. In the following section I outlined the biggest areas or topics of disagreement between myself as a representative of Build Up, CENAP and ELVA Community Engagement.

7.2.2 Co-creation and negotiated outcomes

By all accounts and as shown in the previous section, the Build Peace Fellowship process, with its focus on bottom up, participatory approaches, was a difficult one. It took a long time; there were challenges and costs of innovating for CENAP. Below are three key areas

where outcomes had to be negotiated in the advancement of the development of the platform. They provide more depth to the one-dimensional narrative of empowerment in peacetech discourse by showing that each actor in the context had a different kind of power, and that asking whether technology can empower CENAP for example in the context of Burundi's peace misses out on a host of dimensions that can have an important impact on the successful use of ICTs in fragile contexts.

7.2.2.1 What technology?

Jean Marie wanted to use the Fellowship to look at data collection or visualisation tools. As Build Up, we pushed for a more innovative approach that would answer some core programme issues for CENAP. We felt that the support provided by the Fellowship was better suited to the development of something with the potential for greater impact than a suite of data collection and visualisation tools. We felt that there was little design there – rather a shorter process of selecting a tool and learning how to use it. This is a theme that was developed in all the CENAP team member interviews where each member recalls an initial motivation to use new technologies to make some parts of their work easier or improve others, such as data collection and visualisation. For example one CENAP team member stated: 'It is a technology that we wanted to bring in order to better do our jobs' (Didier, May 2017). Another recalls:

> 'In terms of the research programme, it is true that new technologies for us meant data collection technologies. We thought that for the data collection phase, we needed to be able to use means that would make this task easier. I mean collect data with smartphones – I know that this is starting to become more mainstream across the country, I know research is no longer done on paper but through the use of smartphones. And it makes it easier… we thought that we too could take the plunge in that direction, of these new data collection technologies, because we felt that it would allow us to save time during the process, during the data cleaning – not data cleaning data entry – so that we don't have to hire data entry clerks for example, that would make it even more expensive; and it would also reduce the time it took to collect the data. But it is not only for the data collection, but we would also be reducing the risk of errors in the field, where an enumerator could write the wrong information on paper, or could lose the paper. So we would reduce the risk of error or cheating to a minimum. Our consultant was telling us that the risk of cheating could be reduced if you knew where the enumerator was and that surveying one person should last about 45 minutes and if the questions were entered in say fifteen minutes you could suspect the

> enumerator made up the results. So it was an experiment that only had advantages from our perspective.' (Jacqueline, June 2017)

As this last comment shows a lot of thinking went into the benefits of a digital data collection system, as well as collective buy-in to the idea from the team as a whole. It is the following quote that best sums up the negotiation process

> 'Little by little I understood that data collection tools, there are many, even in Burundi. After that, I realised that there were people who had already started using these tools in Burundi. But for the analysis, we needed to find something that fitted with our approach at CENAP. It was for this that I couldn't immediately see what to choose. And thanks for the Fellowship, you helped us find to real problem to solve for us at CENAP.' (Didier, 2017)

Here the final point is key: my Build Up colleagues and I pushed CENAP to choose something more in line with their requirements. The interrogations posed during the training resulted in a slightly different problem statement for the organisation: one that required key stakeholders' buy-in and ability to be involved in the analysis of the quantitative data. So on the one hand, Build Up, responsible for running the fellowship programme on which CENAP was somewhat dependent, had a lot of influence on determining was constituted an innovative enough project. It could be said that Build Up had more power to define what constituted a 'suitable' peacetech project. On the other hand, the outcome of this negotiation was the result of an inclusive and collaborative process, one framed by CENAP's needs and objectives. Therefore in this case, neither party had overall influence over the other. Rather the nature of the technological innovation that CENAP would introduce to its peacebuilding programme was co-created between parties on an equal footing, each possessing an essential piece of the puzzle without which no project could take place. Build Up had the ability to influence the team because of its assurances over the process and guarantees on the feasibility of the idea, which CENAP needed. CENAP on the other hand shaped the entire content of the project by providing local expertise and grounding. According to Autesserre, local knowledge is rarely considered to be at the same level as international, technical expertise (Autesserre, 2014). But this may be one example of an exception to this rule – in that the Fellowship was specifically designed to do just that: to help support an idea with the potential for great impact. This is important to bear in mind when we draw conclusions for wider practice. There are few initiatives like the Build Peace Fellowship that focus on fostering local innovative potential. But even with such a focus, it is clear that empowerment was neither unequivocal nor instantaneous. The many quotes presented so far that describe the various stages of confusion about the platform and my role in its development

illustrate this point. Understanding the sources of influence in this relationship helps us better understand the dynamics of CENAP's power and agency through the Fellowship process and the adoption of new ICTs to its peacebuilding programme.

7.2.2.2 Questions and data

Another area that generated strong debates related to the way that the platform would be used, more specifically around the following key points: the number of questions that would end up featured on the platform and the final dataset to be used.

The survey CENAP conducted with several thousand participants included around one hundred questions. In a kick off meeting with ELVA where we set the parameters and functionalities of the platform (see developer brief in Appendix F), we had agreed on around 20 questions. There was a technical constraint in that ELVA was providing in kind support to the Build Peace Fellowship, but also a process one that I was keen to get across. In our user-centred design process we had envisaged the participatory analysis platform to be rolled out during CENAP's dialogue and feedback workshops where research results were discussed by a broad range of stakeholders. The primary objective being for participants to collectively analyse information during a limited amount of time (during workshops) meant that I did not feel it would be constructive to have a large number of questions to choose from. Splitting participants into small group, we wanted to be able to compare discussions across groups, which would not be possible if each had a choice among one hundred questions. The discussions that were held are summarised in the following excerpt from an interview with a CENAP team member:

> 'First the idea of choosing a few questions for the tool… they were picturing this like a traditional database… they did not imagine that it was something we were going to build… as a bespoke platform. They thought it must be a database like others, etc. where it is easy to import, etc. They did not understand the constraints and also the importance of choosing only few questions. Even if I understood this only later. But it was very difficult to negotiate the questions. I remember we wanted to have a session with the Steering Committee to choose 20 questions, but we didn't feel it was important enough to warrant a Committee meeting. So we could not include this step because people didn't understand. If they had understood the importance of this choice – ok so we have 100 questions, we only want 20, should we involve the end users and they help us choose the questions? But we had to do it… and luckily it fits with the five themes they had originally identified. So we didn't stray too far, but this is an example that shows how we needed to negotiate every time.' (Didier, May 2017)

The first part of the quote shows that there was disagreement among the team over which questions to choose and the fact that a choice had to be made. From my ethnographic observations, I recorded suspecting there was an issue when the task in the work plan to provide 20 questions to ELVA kept being delayed. But it was only when I worked with the team in Bujumbura that I understood what the issue really was. There was in fact a range of competing perspectives at play. First there may have been some elements of what one CENAP staff talked about when they mentioned a previous research – where they found many themes but only got to work on four of them (Evelyne, May 2017). The same feeling of frustration may have been present when told that instead of one hundred questions we could 'only' showcase around twenty-five. A second perspective that I observed was that key stakeholders might have expected the platform to showcase all of the questions, and the team was worried about communicating requirements or constraints that were not clear to them, as illustrated in the previous quote. Third there had been a realisation of the practical use of the platform in April when the alpha release was made available to CENAP for early testing. Many of the quotes included so far in this thesis show that the team was not necessarily very clear on what the platform would look like, what it would do or how it would work, even from the developer brief and other presentations. But as soon as they were able to use it, they saw an obvious potential – to use it instead of more complex data analysis software such as CS Pro or SPSS.

Of course in order to use the platform for that purpose all the questions needed to be included and some analytical functionalities expanded beyond cross-tabs of different demographics, which is what generated a lot of discussions when I was in Bujumbura about whether the platform could be extended in that way. There was a final perspective that demanded similar technical changes – the idea that this platform be made available to the public to allow people to perform their own individual analyses or use the data themselves. I address this in the next section.

During my trip to Bujumbura, I supported Jean Marie writing a presentation for the team ahead of the testing workshop. It was a sort of an internal run through of the workshop presentation for feedback from the team. During the preparation of the presentation, Jean Marie expressed the need to include all the questions again. Not having heard the perspectives I described above yet, I insisted that having fewer questions in the platform were not a technical constraint but a process one. I explained my view that to hold participatory analysis workshops, having the twenty-six questions, four demographic variables plus the urban/rural variable that can be layered on the other four meant there were already 208 permutations of questions/variables for analysis. That seemed to

convince Jean Marie and some of the team during the meeting. I discuss the point about maximising value in section 7.3.2.3 below.

There was similar debate about the data that needed to be included in the platform. Early on the team mentioned the weighting their consultant would perform on the dataset. I was initially very reluctant to do so because the weighting is often unreliable in areas with limited demographic data. However two key arguments persuaded me otherwise. One is illustrated in the quote below from an interview with a member of CENAP:

> 'We use SPSS to create graphs, etc. and so we produce a report. But on the other hand, we now have this tool. It should also enable us to generate the same results, which are not different from those generated by SPSS. So we are thinking that we need to be careful, because in the end we can't have two different outcomes in terms of results, with the weighted data. It would be catastrophic for us. That is why we think we need to be careful. The data we are using in SPSS, we need it to be the same in the participatory analysis tool, so that it generates the same results.' (Emmanuel, June 2017)

This point is in fact key to achieving the overall objective of enhancing trust in the results by bringing stakeholders into the analysis process. During the workshop participants also asked whether the data was 'suitably weighted' and I agreed with the team in subsequent conversations that regardless of the weighting process we needed to use only one dataset and assure participants that the data was representative for the country as a whole. That seemed to be crucial to the trust participants would have in the data and so the developers agreed to upload the weighted dataset.

7.2.2.3 Open or closed?

A final topic of contention was whether the platform should be rolled out as part of a managed process or open to the public, a debate partly illustrated in the quote below:

> 'I know that originally we were much more focused on the data analysis, that potential users or participants are able to browse the results and analyse them with us. But I know that towards the end of the development of this tool, in a meeting we were wondering why not include an option – either in the tool or on the CENAP website that could host the platform – a dialogue option, a discussion option on the data and create an interface where the users can leave questions. Or a CENAP researcher starts a discussion on a topic related to the data available on the platform. Like a debate question, and let people express themselves more and create a form of… debate on the data that they can browse, to engage in

> conversations on topics that for now are not easy to debate, in light of the context, and engage people who are here or outside of the country. So for this tool to be the basis for generating deeper discussions, open up the debate that is closed today. And se we thought about different perspectives.' (Jacqueline, June 2017)

Indeed there were several facets to this question. First an idea that persisted from the first times we discussed building the platform was that of including the Burundian diaspora and therefore have a forum/discussion functionality, although we agreed it would happen in a second phase of development. A second element was that after the testing workshop as described in the previous Chapter, there was a sense that participants would want to be able to access the platform to use the data for their own work – across government or development agencies for example. Finally and perhaps more importantly was the feeling that limiting access to workshops would be missing out on a wider range of opportunities afforded by the platform. As one senior member of the team put it during a meeting in Bujumbura: 'we cannot use only 5-10% of this tool; we need to maximise its value'. In that conversation about maximising the potential of the platform, I expressed my view that I felt the team needed to test the process in a controlled environment before extending it beyond that in order to minimise the risks of misuse or misinterpretation of the discrepancy between qualitative and quantitative data. The latter should foster constructive conversations but that process seemed safest to me as a managed one to begin with. From subsequent conversations with the CENAP team, this last argument was decisive in everyone agreeing to keep to the twenty-six questions and to stakeholders involved in CENAP's existing dialogue workshops in a first instance.

This section has shown the types of skills that were lacking and where capacity needed to be built. Overall there were three main areas which exhibited significant gaps: an awareness of the potentials of technology for peacebuilding to inspire those already working in peacebuilding to apply new techniques or methods to the work they engage in; an idea of the considerations that are required to undertake such a process and how to design it; how to talk to software developers to obtain the desired results. From conversations with the team at CENAP, some aspects of which are illustrated in the quotes presented in this section, it seems that the elements of training and mentoring were what gave them the ability to consider broadening their uses of ICTs as part of their peacebuilding programme in the future. This represents one form of empowerment, but also shows the upfront investment that adopting new ICTs can require both in terms of time and resources. This factor is rarely taken into account in the peacetech discourse,

which focuses more on the affordances of the technology, without taking into account the ability of peacebuilders to leverage them.

This discussion on negotiated outcomes shows that capacity building is not necessarily a linear, one-way process. Rather it is best understood as a process where different agencies come together, sometimes competing against, sometimes complementing one another. The power to shape the technology – as with CENAP's insistence on the weighted data – is just as important as the ability to use it. Moreover capacity building processes can introduce additional constraints. I address this last question in the following section.

7.3 User-centred design, bespoke development and sustainability

In this section I discuss what I described in Chapter 5 as the Digital Principles included in the Build Peace Fellowship training. These can be described as emerging practical understandings (Schatzki, 2005; Nicolini, 2012; Shove et al., 2012), embryonic rules that are beginning to gain consensus in peacetech communities such as Build Peace and thus forming part of peacetech practice. They are often referred to as 'best practices' in peacetech, which are supposed to be a practical way of reaching the overall objectives of peacetech such as empowerment and participation for example.[43] My analysis of their impacts on the empowerment of CENAP in this case shows that both capacity building practices and user-centred design need reframing in order to form part of peacetech practices that support empowerment and participation. Indeed the discussions I presented so far have highlighted a discrepancy between the way software is built and designed and the requirements local organisations in particular have for sustainable peacebuilding. In the section on negotiated outcomes I outlined the debates I had with CENAP on a range of issues to do with the design of the platform. One element that stands out in these debates is the balance between the potential of the technology, the time invested in developing it or building capacity to do so, and the return on this investment. Whereas in the first section of this chapter I showed that the costs of innovation could be too great for some local peacebuilding organisations to take on, in this section I show that similarly a lack of return on investment could be just as damaging. In other words the inability to reuse, repurpose or transform a piece of technology introduced within a peacebuilding programme risks its sustainability and in a sense disempowering local peacebuilders. This may echo what Stray said at Build Peace

[43] For details see https://digitalprinciples.org/about/

2016 when he noted that instead of projects the focus should be on building 'software organisations' (Stray, 2016).

While a concern for sustainability of peacetech initiatives has always been raised (Chungong, 2015b), this has so far not been linked to the idea of reuse or repurposing. Rather it focused on the durability of the hardware (Musila, 2013) or the software itself beyond the project in which it was developed, created of adapted. But in the case of CENAP, it was almost an immediate focus in the Fellowship discussions. Indeed according to my observations, early meetings in February and March included the idea of *extending* the platform with a forum or dialogue function. Following the testing workshop in May 2017, the CENAP team again raised a concern with *further purposes*, as illustrated in the following quotes.

> 'Can the same platform be used for later research? I don't know – is it… like a shell that we can empty the contents of and put results that come from other research projects and analyse them in there? That's just a question.' (Emmanuel, June 2017)

This includes similar uses for subsequent research, but also adapted uses for the same research project, as illustrated below:

> 'So you see this tool is easy to use… even for someone who is not well versed in software, they can use it. But when it comes to write the report… say a researcher wanted to use this tool to generate graphs – is there a possibility to automatically print them for example, to make report writing easier? Is that doable too?' (Emmanuel, June 2017)

This is also the meaning of the comment about maximising the use of this tool 'beyond 5-10%' I observed during a team meeting in Bujumbura.

One of the reasons for the participatory analysis platform's inability to afford its users these wider possibilities lies in the focus on user-centred design in bespoke development. Indeed the way that the Build Peace Fellowship training frames its design considerations is bottom up, with a focus on users as recommended in the Digital Principles. One of the building blocks of user-centred design are user stories. These represent the stories of different user personas, that is a typical kind of person that those responsible for developing new software believe will be a user. These personas are then given goals. The processes by which this information is collected vary from desk research to focus group interviews or surveys. Together user personas and goals, as well as other contextual insights regarding the way they are likely to use technologies form user stories. User

stories in turn inform user journeys, which can be likened to the process which users go through from the moment they arrive at the platform or app that is being developed including screen/navigation options, type of content, etc. This is then used to build a basic prototype that can be tested by a small number of people as representative of actual users as possible. Their feedback is used to iterate and further prototypes and tests are carried out. In the case of CENAP, we focused solely on key stakeholders around the organisation and their research programme. Even then we focused mainly on local political or civil society representatives, youth representatives and government officials. That makes sense in a traditional peacebuilding context, they are the 'beneficiaries'. The term beneficiaries has been criticized by a number of scholars and commentators for widening the often unhelpful binary divide between the 'international' and the 'local' (Mac Ginty, 2011) but appears to be useful here to understand this mind-set specific to peacebuilding. And the case of the development of the participatory analysis platform, equating beneficiaries with users (for the purposes of user-centred design) was counter-productive in terms of implementation and sustainability. Indeed it meant that while the team could wield this platform as part of their research on youth, there were no direct options for them to input data into the platform, change the questions or use it for other research. In that sense they depend on the developers, Elva Community Engagement for this work beyond the Fellowship. This raises a number of considerations with regards to CENAP's ability to influence new processes. First while it is true the team has the ability to use an entirely new process to support its peacebuilding work, it is clear that they do not deem the limited possibilities for current uses of the platform a particularly successful return on investment. One interviewee stated that there was a time-sensitivity to the presentation of the research results and that after 'too long' these results would no longer be deemed relevant by key stakeholders. Then this means that rather than being empowering, in this case the adoption of new ICTs seems to run the risk of creating new kinds of dependencies – on the developers or on further funding. None of this currently features in debates on peacetech in either the literature or in practice. And while there are undoubtedly cases where ICTs can provide a wealth of opportunities, this case study shows that neglecting the needs of the local peacebuilding organisations developing or adapting the technology can have negative effects on the empowerment processes of leveraging ICTs for peacebuilding.

In Chapter 6, I showed that the participatory analysis platform built by CENAP as part of the Build Peace Fellowship was successful in many of the objectives outlined from the outset, and in some areas even surpassing expectations. Everyone at CENAP seems to agree that they are now – or soon will be – in possession of a powerful tool with great potential to support their peacebuilding programme and enhance their impact. In that

sense they have been empowered in different respects. First they are now able to extend the scope and reach of their research. One interviewee remarked that a criticism CENAP often faced when presenting their research was that it could not purport to be representative of Burundian opinions as a whole in light of the low number of people consulted. With the participatory analysis platform, CENAP possesses at the very least the ability to effectively communicate the results of nationwide surveys it conducts.

> 'But also what could make us stand out from other organisations that also do research when it comes to visualise the results.' (Jacqueline, June 2017)

Therefore by introducing a participatory analysis platform to its work, CENAP has the potential to become the convener and holder of processes that are seen as valuable, inclusive and potentially impactful. However questions remain on further development and funding for this work, which at present remains unanswered.

7.4 Performing peacetech practice

In this Chapter I have shown that the assumption that technology is readily available to peacebuilders can be misleading or at least unhelpful. While the perception of the CENAP team members was that the participatory analysis platform could be empowering in many ways, in house skills were lacking and there were serious fears and doubts about bringing in a new technology and the impact it may have on the programme and the organisation. This demonstrated that the rather one-dimensional narrative of empowerment in peacetech does not adequately reflect the reality of the process of introducing or adopting new technologies in peacebuilding, of brining peacetech into being. All actors involved have different, sometimes complementary and sometimes competing agencies that come together to produce negotiated outcomes. This raises the question of who is the peacetech practitioner in this case? Can we move beyond replicating the traditional model of peacebuilding practice where external interveners and local actors collaborate with varying degrees of influence over one another and over their work (Autesserre, 2014)? A closer look at some examples of negotiations, as well as the considerations and constraints that drove them provided a better explanation for the kinds of empowerment resulting from these processes. Another aspect of the analysis presented in this Chapter is a discussion on the impacts of 'best practices' in peacetech on empowerment processes to show that both capacity building practices and user-centred design need reframing to form practices that support, rather than hinder, local empowerment in peacetech. Indeed I have argued throughout this thesis that saying new technologies empower local peacebuilders is somewhat tautological and what is more interesting and

relevant for the questions at hand is to examine the ability to effectively and strategically use these ICTs for peacebuilding. Because as shown in this and the previous Chapters, these processes are complex and uncertain. This shift in perspective from the existing peacetech discourse has wider implications for peacebuilding policy and practice. It means that rather than focusing on access to new technologies, there is a need to develop a different model of innovation and technology diffusion, with a focus on supporting long-term capacity to build as well as implement peacetech. Indeed this case study has demonstrated the difficulties of moving beyond intervention in peacetech and peacebuilding, even though the affordances of ICTs present undeniable potentials for more effective peacebuilding for all kinds of practitioners. But as outlined by a long list of peacebuilding scholars, strengthening traditional peacebuilding practices of intervention do not necessarily achieve this normative purpose. Rather it is possible to focus on interventionary practices that support empowerment in peacetech.

Chapter 8 Peacetech practice and the transformative potentials of ICTs

This thesis started out with the observation that much hope is placed on new ICTs to transform peace and conflict dynamics for the better, and set out to explore the transformative potentials of ICTs for peacebuilding. Pioneers in the field of peacetech Kahl and Larrauri state that:

> The empowerment of people to participate in localized conflict management efforts is one of the most significant innovations and opportunities created by new technologies. (Kahl and Puig Larrauri, 2013, p.1)

I have shown throughout this thesis that this and the many similar statements made about the transformative potentials of ICTs for peacebuilding rest on a simplistic view of the relationship between technology and social change. Indeed technological determinism, the idea that a technology can have predictable impacts on society (Halford et al., 2010), has been discredited in its ability to account for the interplay between technological innovations and social change. A first imperative for this thesis was therefore to develop a conceptual framing able to integrate a more nuanced view of this relationship. Another challenge, related to this underlying technological determinism, was that the emerging literature on ICTs for peacebuilding seemed rather vague on how ICTs were actually used to enhance empowerment and participation in peacebuilding. This is an issue that characterises peacebuilding literature more broadly – where debates around the liberal peace for example often failed to incorporate how peacebuilding actually takes place in the field. I therefore grounded my conceptual framework in the tradition of STS on the one hand, and practice theory on the other. The former to better account for the interplay between technologies and social change, and the latter to move beyond unhelpful dichotomies and conceptual debates that have characterised the peacebuilding literature. The latter allows me to move away from the implicit technological determinism of early peacetech commentary and propose the concept of affordances to examine what possibilities they offer peacebuilding, and the processes of leveraging them, which I consider as the practices of peacetech. I focused on participation and empowerment as crosscutting themes because both concepts have been presented in the literature as the best hopes for peacetech to rescue peacebuilding from the crisis of legitimacy it has struggled with. As such both concepts provide a bridge between the peacetech and peacebuilding traditions, which had so far remained implicit. Conceptually and methodologically then, this framing allows for a much more nuanced analysis, shifting

the focus to the performative unfolding of the affordances of ICTs and their emergent properties in peacebuilding contexts. As Earl and Kimport state:

> '[w]ith complex technologies, what a technology affords may be one of the hardest questions to definitively answer, since among other issues, not everyone notices all affordances, not everyone knows how to leverage all affordances, not everyone chooses to leverage all affordances, and not everyone succeeds in well leveraging all affordances of complex technologies' (Earl and Kimport, 2011, p.33).

Looking at the processes of leveraging of these affordances means looking to the practice of using ICTs for peacebuilding. This, I show in this thesis, is located in the emerging practice of peacetech. This conceptual framework results in moving away from exploring the role of ICTs for peacebuilding – a technologically deterministic question that might too easily result in technologically deterministic answers. Instead I set out to answer the following research questions:

(i) What are peacetech practices and what claims are currently made about their potentials for participation and empowerment?

(ii) How are ICTs adopted and their affordances leveraged in peacetech practices and with what consequences?

(iii) How can peacetech practices support or hinder the empowering and participatory potential ICTs could afford peacebuilders?

I have conceptualised a practice in line with Shove et al. (2012) as made up of three kinds of elements: materials, including infrastructures, bodies and technologies for instance; competence, including elements of shared practical and general understandings in Schatzki's interpretation (Schatzki, 2005); and meanings, which include motivations and the symbolic representation of participation (Shove et al. 2012). Methodologically then, this thesis was concerned with exploring the elements of peacetech practice, with a particular focus on the technological affordances of ICTs in peacebuilding contexts. And 'by paying attention to the trajectories of elements, and to the making and breaking of links between them, it is, we suggest, possible to describe and analyse change and stability without prioritising either agency or practice' (Shove et al., 2012, p.22). I therefore examined the elements of practice – through discourse (Chapter 4) and implementation (Chapter 5), with a focus on the Build Peace community of practice. I then explored the trajectories of these elements – how they were brought together and came into being - through the case study of CENAP's work in the Build Peace Fellowship and the piloting (Chapter 6) and development (Chapter 7) of a participatory analysis platform for their peacebuilding work in Burundi.

In the rest of this Chapter I draw together the insights that I have presented throughout to discuss what peacetech practices are, and what they mean for ICTs in peacebuilding now and in the future.

8.1 Peacetech practices

To answer my first research question I have used a range of empirical data that include both discursive and material practices and the elements they consist of, or what Shove et al. refer to as practices-as-entities, as well as dynamic accounts of practices-as-performance. Evidence shows there is a range of different discourses regarding the motivations for enacting peacetech practice. Those motivations are based on the perceived transformative potentials of ICTs to empower local populations to build and therefore own their own peace; to enable broader and deeper participation – more people as well as those groups that are often marginalised – to participate in peacebuilding processes; to enable peacebuilding to operate at scale and more efficiently.

In Chapter 4 I offered the following definition of peacetech practice:

> Peacetech is a practice that uses ICTs in data, communication, mobilisation or networking projects and programmes in order to empower local populations and peacebuilding practitioners; to foster greater participation and reach; and to achieve larger scales of operation more efficiently. This is made possible by the ubiquitous and easy to use nature of ICTs and should rest on 'good' peacebuilding project design principles such as Do No Harm.

Indeed the analysis of discourse showed an ambiguity around who the peacetech practitioner is, or could be. For some of the empowerment discourses to be coherent, there was a sense that the ultimate practitioner needed to be local, equating ICTs ubiquity and ease of use with an ability to leverage them in peacebuilding contexts. In this sense the ultimate perceived potential of ICTs would seem to be the ability to transcend the traditional model of peacebuilding based on external intervention.

From the analysis of project data in Chapter 5 however, peacetech could be constructed as follows:

> Peacetech is a practice that leverages the data affordance of ICTs in the largest number of cases and the affordance of mobilisation most often. Whereas local populations are key stakeholders in most projects, the latter are mainly designed and implemented or supported by international peacebuilding organisations. Digital Principles offer guidance on 'best practices' such as user-centred design,

ethical and sustainability considerations for designing peacetech projects endorsed by a large number of peacebuilding organisations. As such peacetech practice tends to reproduce, rather than transcend peacebuilding's traditional model of intervention.

Conceptually, this ambiguity over the identity of the peacetech practitioner stems from the technological determinism of peacetech's emerging literature and discourses. Indeed this determinism makes a construction of the practitioner irrelevant, as technology is both the object and the subject of practice in this view. This underscores the importance of the conceptual framework developed in this thesis and its practical relevance. The analyses of peacetech practice-as-performance conducted in Chapters 6 and 7 confirm this view and offer another explanation for the gap between discursive aspirations and practical implementation. Indeed Chapter 6, concerned with the piloting – i.e. the implementation of a peacetech practice – illustrates how ICTs' affordances were leveraged to create not only greater participation, but CENAP's ability to manage that inclusion in their peacebuilding work. Considering this however only forms part of the 'trajectory' of the constitutive elements of this practice. Chapter 7 shows that in this case the development of the affordances of the participatory analysis platform and its future implementation rely on external support in terms of expertise and funding. Ownership of the platform was located mostly with CENAP (in the form of an indefinite licence from ELVA), but not ownership in the competences required to bring all the elements of peacetech together in this case. These findings are extremely important for peacetech and its future. First the linear, deterministic view that the ubiquitous availability and ease of use of ICTs results in peacetech practices hides a wide range of processes that are essential to the purposes of peacetech and peacebuilding. Conceptually this would enable to peacetech community to shift from the somewhat stale debate around the potentials and risks of ICTs for peacebuilding to the need to focus on different affordances of new technologies, and perhaps more importantly on the processes of leveraging them. Practically this also has wide ranging implications, as policy objectives need to go beyond ensuring the development of infrastructures or the introduction of ICTs in peacebuilding contexts. These objectives need to include a focus on the different affordances, which includes questions of infrastructure and availability of ICTs, but they also need to emphasise and their leveraging in practice. I consider these in more details in the next section.

8.2 Leveraging affordances in peacetech

In response to the technologically determinist assumptions prevalent in peacetech I have developed a performative approach to the materiality of new ICTs in which I used the concept of affordance, defined as the 'possibilities offered for action' (Hutchby, 2001). This approach, I have discussed in the previous section, accounts for both the potentials of ICTs for peacebuilding and how they are actualised – or not – in reality.

Focusing on the main affordances of data, communication, networking and mobilisation, I have shown that they represent a valuable organising framework to describe peacetech practice. It enabled to show that despite the empowerment discourses of peacetech, data was the affordance most leveraged, in 80% of peacetech projects, where local populations were the stakeholder most represented yet implementers were mostly external organisations using data about those populations. This supports the argument about the replication of a traditional model of peacebuilding practice. Indeed it highlights that the vast majority of peacetech practices involve leveraging of ICTs' affordances by external organisations as an intervention on a peacebuilding context and its population. Empowerment seems to be accessible to the transnational community of external interveners, and participation is synonymous with the intervention. However mobilisation and communication projects seem more likely to transcend this model. Whereas my exploratory Bayesian statistical analysis showed no correlation between the various affordances, peacebuilding objectives, stakeholders, etc. it did show that international organisations have a greater tendency to implement data projects, while local NGOs communications projects. The analysis of Build Peace Database projects showed that communication – bringing more voices and alternative narratives to peacebuilding processes – was leveraged most often by local NGOs. The only example provided that did not rest on a traditional peacebuilding model of intervention was Girifna, a youth social movement in Sudan, which leveraged the affordance of networking – organising a movement in the alternative, digital space, and effectively mobilising youth for political resistance in a highly repressive political context (Haj-Omar, 2015).

This shows that there is an undeniable potential for ICTs to afford empowerment and participation through peacetech. My analysis of CENAP's experience in piloting their PA platform in Chapter 6 highlighted that participation was both broadened and deepened in the project, with potential implications for peacebuilding more generally. It also showed that this could not have been achieved without the technology itself. Indeed the platform afforded users the ability to become part of a process of analysis traditionally reserved to those able to access – and with the skills to use – complex, expensive proprietary

software in order to provide their interpretations and meanings on the analysis of data traditionally undertaken by researchers. This illustrates that the potential for technology to support more inclusive and participatory peacebuilding processes is demonstrable. However unlike the claims made in peacetech discourse and literature, it is not, as my analysis of the design process illustrates, through the affordances of low barriers to entry and democratisation of use of ICTs, but through a combination of various affordances unfolding within a managed, facilitated process by trusted actors already engaged in peacebuilding at the local level. These leveraging processes are therefore more complex and uncertain than anticipated in peacetech literature and discourse.

In fact my analysis of CENAP's experience shows that while the perception of the technology among CENAP team members was that it could be empowering in many ways, in-house skills were lacking and there were serious fears and doubts about bringing in a new technology and the impact it may have on the programme and the organisation. Indeed the perceived costs of innovation seemed too high for CENAP to undertake this leap on their own, but rather relied on a peacetech project constructed as a traditional peacebuilding practice of external intervention. Chapters 6 and 7 show that this was not automatically de-legitimising or disempowering. In reality in this case, all actors involved had different, sometimes complementary and sometimes competing agencies that came together to produce negotiated outcomes.

Their experience also illustrates another point. The competences of peacetech practice, are still, to use Firchow et al.'s (2017) terminology, in a state of liminality consistent with the emergent nature of the field. The case of CENAP highlighted not only a gap in skills but also in practical and general understandings, which mean both shared understandings of the way things are done in, and what it means to be doing, peacetech. It could be argued that CENAP became a peacetech practitioner only through the Build Peace Fellowship. However the team had been using audio-visual technologies in their work for years. Would CENAP feel an active part of the Build Peace community when they collectively expressed such lack of understandings, misunderstandings over the processes, objectives and terminologies employed in the Fellowship as shown in Chapter 7? This seems to matter, because what a practice is and means also relies on shared understandings and ideas of the symbolic representation of participation in it (Shove et al. 2012, Nicolini 2012). Currently data from the Build Peace Database which shows that for projects where technology is created especially, there is a discrepancy between where the projects are implemented and where the implementing organisations are located, with the former being in the Global South and the latter in the Global North. This would seem to support the idea that often technology is designed and developed in the Global North

for use in/on the Global South (Stray, 2016), echoing peacebuilding scholars' critiques of the external interventionary model of (liberal) peacebuilding (Mac Ginty 2011, p. 60). Even when it is not, external support is needed. The only example where that was not the case was Girifna in Sudan. Even locally driven initiatives eventually enter a more traditional peacebuilding model and rely on external support, as with the case of the Cypriot projects presented in Chapter 5. Another example is Panzagar, a dangerous speech project initiated by local organisation Mido in Myanmar to combat hate speech on Facebook. Ethan Zuckerman used the example in his closing address at the Build Peace conference in 2014, heralding it as a local example of peacetech. However Panzagar is funded by USAID, and has received many peacebuilding awards for its achievements, notably from Peace Direct.

This again demonstrates that despite discourses that see peacetech practice as a democratising force with the potentials to transcend traditional intervention in peacebuilding, this is not currently actualised. The processes of leveraging the affordances of ICTs remain dependant on that model, with very few exceptions.

The insights discussed in this section present an important contribution to the emerging field of peacetech as they shed light on the importance of focusing on the processes of leveraging ICTs' affordances, and some of the considerations that this entails. They show that there is newness to peacetech – ICTs bring about affordances to peacebuilders that did not exist before. The ability to develop an inclusive, participatory process to analyse quantitative data for CENAP for example. Or the ability of the Hands on Famagusta team in Cyprus to explore imaginary futures visually with their users. However the way that these are currently leveraged remains within a traditional peacebuilding frame. The conceptual framework adopted in this thesis does not construct peacetech as necessarily interventionist however, and as such allows the explore what elements or practices are more or less supporting of the empowerment and participatory potentials of ICTs in peacebuilding. I develop this point in more depth, highlighting why this is so important in the following section.

8.3 Peacetech, participation and empowerment

This thesis provided insights on how peacetech practices support or hinder the empowering and participatory potential ICTs could afford peacebuilders, my third research question. I have shown how strong and persistent these themes are in peacetech discourses as rationales for implementation. A first answer to this question is in their ability to lead to the design or adaptation of technologies with relevant affordances to

support wider participation. In the case of CENAP for example, ICTs visualisation and interactive affordances were designed into the participatory analysis platform. The Hands on Famagusta project relied in similar affordances to broaden the conversation on the city's future through an online collaborative platform. This seems most successful when the demand for participation exists independently from the technology of project. The example of the CRMA for instance illustrates the idea that even though a technologically functional platform can be created does not necessarily result in it being used. This echoes Murphy's (2015) comments at the Build Peace conference in 2015 regarding the need to identify relevant incentives for participation. The example of CENAP moreover emphasises that after the relevant affordances are designed, the processes of involving stakeholders as users remains delicate and requires careful management. There is nothing automatic about peacebuilding, and so it is rather unsurprising that there should be anything automatic about peacetech. Finally the case of CENAP also shows that the definition of what constitutes 'relevant' affordances is more effective when developed within the peacebuilding context under consideration.

In terms of the empowerment potentials of technologies in peacetech, despite empowerment being presented as a key driving rationale for using ICTs in peacebuilding contexts in peacetech discourse, evidence shows that the primary objectives of peacetech projects are often more focused on enhancing traditional peacebuilding practices, with capacity building and activities designed to reach marginalised groups such as women representing only a minority of projects. The emergent nature of peacetech practice and its early recognition that projects often fail to achieve their objectives has led some members of the Build Peace community to develop or endorse 'principles' for 'good' digital development that include user-centred design, adapting to existing contexts, and sustainability. In light of the discussions so far, ideas of 'adapting to existing contexts' and 'sustainability' to a lesser extent imply a conceptualisation of peacetech as interventionary. It illustrates a view highlighted in peacetech discourse that sees the potential of ICTs as primarily a way to enhance existing peacebuilding practices. The empowered peacetech practitioner in this case is what Autesserre (2014) would refer to as a 'Peacelander', a member of the transnational community of peacebuilding interveners. Performing peacetech in this way however does not necessarily lead to the empowerment of local populations or to more successful peacebuilding as decades of peacebuilding scholarship show. Conceptually by masking existing agencies with technological determinism, peacetech discourse has obscured the reinforcement of these dynamics emphasised in the peacebuilding literature as hindering empowerment processes peacebuilding is supposed to enhance.

Furthermore the case of CENAP shows that even when those principles are applied, there are still risks of creating new dependencies that hinder the meaningful empowerment of peacetech practitioners. Indeed on the one hand CENAP, as an implementer of the participatory analysis process and owner of the platform, acquired the potential to become the convener and holder of processes that are seen as valuable, inclusive and potentially impactful. On the other hand the narrow focus of the user-centred design, the fact that the organisation does not own the platform's code, which is not an open source design, means that broader scale implementation and future developments depend on further funding and external expertise, thus limiting CENAP's empowerment in this case. Therefore reframing the practices of capacity building and user-centred design to account for the requirements of local implementing organisations beyond the life of a project is key to support empowerment in peacetech. This is also illustrative of similar arguments in peacebuilding about the constraints of short cycles of funding models.

These findings are important because they show that much of the elements or practices associated with peacetech that makes it empowering and/or more participatory are currently hidden or tend to be neglected in current literature and discourses. At this early stage in the emergence of the field, the latter would therefore greatly benefit from including these perspectives for further discussions and research. In addition I examine what this means for the future of peacetech in the next two sections.

8.4 Further research and limitations

The analysis presented in this thesis provides important contributions to the field of peacetech conceptually and empirically. It also has important implications for practitioners and policy makers. Before turning to those in the following section however, it is useful to identify some of the questions this work has raised rather than answered, the areas where more research is needed and the limitations of my findings.

A first relates to the conceptualisation of a practice. Defining a practice necessarily entails identifying some boundaries. In this thesis I have used the approach practice theorists often suggest, which is to define it as the way practitioners of that practice do (Nicolini, 2012; Shove et al., 2012). By focusing on the Build Peace community of practice, I did just that. However, a question this raises is whether this risks excluding different forms of practices that use ICTs for peacebuilding. Is it possible that local examples of peacetech practices for instance are not represented in that community? This is important to consider and keep in mind. The focus on projects, which is how discursive practices construct peacetech activities might exclude the work of individuals or organisations

operating in less structured ways. Several arguments mitigate this risk however. Girifna, the local youth movement that organised and operated online and managed to influence the political agenda in the highly repressive regime of Sudan was invited to speak at the Build Peace conference. Other examples mentioned throughout show that when an initiative shows promise, as in the case of Panzagar in Myanmar, and receives external funding, it essentially becomes a peacebuilding or peacetech project. Another example is the work of Natakallam, an organisation pairing displaced Syrians with people who want to learn Arabic on Skype. Featured in the international press it has received support from a range of external partners.[44] These also feature in the Build Peace Database and are often the basis for the aspirational discourse of peacetech.

A second consideration relates to the nature of technological affordances. Those presented in this thesis and used as an organising framework for much of the empirical data have been largely determined by the work of Kahl and Larrauri (2013) and myself (Welch et al., 2014, 2015). But there can be different levels of analysis relevant to different stakeholders. In the case study of CENAP's work I outline a far more specific set of affordances of the participatory analysis platform. Where this may be acceptable at this stage of research in a field in the process of emerging, conceptually the framework of affordances and the leveraging processes that I have argued need to be considered would benefit from some mechanism that justifies adopting different levels of affordances, and the degree of granularity required for different types of research. A better understanding of how practitioners view those affordances might contribute to the development of this mechanism, which might in turn lead to better ways of linking and comparing peacetech practices across both time and space.

This means that in terms of further research, the concept of affordances needs to be tested with practitioners. Current affordances of data, communication, networking and mobilisation seemed to have worked well as descriptive categorisations. I would moreover argue that there is operational potential in light of questions of designed and latent affordances that have remained outside the scope of this study. More detailed work to uncover affordances at more granular level would consist in a useful first step. Ethnographic observation of CENAP's work developing and piloting a participatory analysis platform proved invaluable in uncovering key tensions that other data sources would not have. Therefore further ethnographic observation of peacetech as it happens would help broaden the relevance of the findings and perhaps specify conditions or types of organisations that might behave differently. Such research would thus benefit from a

[44] For further details see https://natakallam.com/about/ and https://natakallam.com/

comparative case study approach in the future. Another key issue that needs immediate attention regards the competences and skillsets necessary for peacetech. As highlighted throughout this thesis, peacetech requires a balanced blend of political management, peacebuilding understandings and technical knowledge. As such the peacetech practitioner needs skills to cross over a range of existing practices that have not traditionally been connected in this way. Another question that merits attention in peacetech research concerns what incentives for innovation and participation are found in different contexts. As shown in Chapter 7, this could start with gaining better understandings of the objectives and requirements of local organisations in the long term, beyond projects. It could also include insights on different perceptions around the costs of innovation among local peacebuilding organisations, where more information is needed in order to develop adequate technological innovation models for such organisations. Finally this research agenda would benefit from some form of knowledge sharing on existing development with technological innovation models that limit the creation of additional dependencies, both technical and financial.

Finally while any research of this scope invariable raises more questions than it answers, this thesis has shown the benefits of adopting a sociotechnical, practice-based approach to studying the emergence of peacetech and the transformative potentials of ICTs for peacebuilding to move beyond existing debates in peacetech and provide a much richer account of its requirements, potentials and limitations for peacebuilding and for peace. This has a range of practical implications for practitioners and policy-makers that I address in the next and final section.

8.5 Intervention and beyond: wider implications for peacetech

It would be useful to find ways of operationalizing non-linear approaches that are not technologically deterministic in peacetech practice. As shown in this thesis, the ability to use ICTs such as the web, Internet, mobile phones or smartphones does not automatically translate into the ability to implement peacetech. This should not be surprising, as many organisations of the Global North operating across sectors require the use of external services in order to develop and implement technology solution. A furniture manufacturer in the United Kingdom is not going to be expected to necessarily know how to build an online ordering system. Different organisations specialise in building websites to support these kinds of activities. Admittedly this is not always possible in all peacebuilding contexts where war or violence have severely hampered key sectors such as education, infrastructure or the economy. However there should be some awareness of the issues that arise when those skills are located with or managed by external peacebuilding or

other practitioners. Having said that there is an undeniable potential for ICTs and peacebuilding to support new forms of engagement and participation, and as such to support new power dynamics in peacebuilding. Simultaneously the evolution of web technologies means that low cost and relatively low skill options are available. As Shove et al. (2012) argue, policy-makers and practitioners can impact the elements of practice and their trajectories to make changes to them. So in order to enact practices that support, rather than hinder the potentials of ICTs for participation and empowerment, I propose the following five recommendations.

A first recommendation is to locate the drivers for innovation locally within peacebuilding contexts. This requires better understandings of local incentives for innovating, and the long-term concerns of local organisations beyond their construction as a local partner through projects and programmes. This would mean for example the need to reframe use-centred design, and other peacetech best practices to include the organisation leading the innovation and ensure re- or multi-purposing and greater sustainability. This of course introduces a number of questions relating to existing power dynamics in peacebuilding contexts, such as who gets a say in defining those incentives and drivers? The example of CENAP shows that considerations beyond a peacebuilding focus drive any organisation operating in a competitive environment. CENAP for example leveraged the affordances offered by their participatory analysis platform with the aim of standing out from other research organisations in Burundi. Are the most successful local organisations necessarily the best positioned to define the needs for innovation – and the kind of innovations most relevant to any given context? There is a sense in which more is needed to enable a larger number of parties to contribute to this conversation.

Therefore a second recommendation would be to focus funding for peacetech on competences as well as materials by developing the skillsets needed to innovate, develop and implement peacetech in practice. It would ensure greater ownership of all the processes involved in bringing the elements of peacetech practices together. It would also serve to decrease the new sets of dependencies that can be created when peacetech affordances are designed and developed in a context external to the peacebuilding one. Finally it would reduce the perceived and real costs of innovating. This would entail a longer-term approach than the current focus on the lifetime of a project, but would be consistent with peacebuilding programme cycles and as such seems like a possible option in the short term.

At the same time as a third recommendation the international peacebuilding community should consider appropriating peacetech funding to taking on the costs of innovation by supporting pioneering work in partnership with local actors and investing in locally driven

research in peacetech to have greater chances of identifying what affordances are most relevant and address the needs of potential stakeholders and how they can be leveraged without giving rise to new forms of dependencies.

A fourth recommendation would be to facilitate the exchange of knowledge on successes and failures, and findings from ethnographic observations of the practices that support or hinder empowerment and participation. It would contribute to shared practical and general understandings of peacetech and as the example of CENAP shows would further mitigate the costs of innovating for local peacebuilding actors.

A final recommendation therefore is to move away from technologically deterministic assumptions and discourses emphasising technology diffusion and the development of infrastructure as a pre-requisite for peacetech implementation and focus instead on the processes associated with the ability to both develop and implement peacetech initiatives. If we want to rely on new technologies to change the way that we do peacebuilding, then we need to change the way we conceptualise and construct the transformative potentials of these technologies.

List of References

Alvesson, M. & Karreman, D. (2000) Varieties of Discourse: On the Study of Organizations through Discourse Analysis. *Human Relations*. [Online] 53 (9), 1125–1149. [online]. Available from: http://journals.sagepub.com/doi/10.1177/0018726700539002 (Accessed 21 February 2017).

Arendt, H. (1958) *The Human Condition*. Chicago: University of Chicago Press.

Autesserre, S. (2014) *Peaceland : conflict resolution and the everyday politics of international intervention*. Cambridge: Cambridge University Press.

Barakat, S. et al. (2012) Karzai's curse – legitimacy as stability in Afghanistan and other post-conflict environments. *Policy Studies*. [Online] 33 (5), 439–454. [online]. Available from: http://www.tandfonline.com/doi/abs/10.1080/01442872.2012.705644 (Accessed 19 August 2013).

Barbara, J. (2008) Rethinking neo-liberal state building: building post-conflict development states. *Development in Practice*. [Online] 18 (3), 307–318. [online]. Available from: http://www.tandfonline.com/doi/abs/10.1080/09614520802030318 (Accessed 19 August 2013).

Barnett, M. et al. (2007) Peacebuilding: What Is in a Name? *Global Governance*. 13 (2007), 35–58.

BBC (2017) *Burundi country profile - BBC News*. [online]. Available from: http://www.bbc.co.uk/news/world-africa-13085064 (Accessed 5 April 2018).

Beer, D. (2009) Power through the algorithm? Participatory web cultures and the technological unconscious. *New Media & Society*. 11 (6), 985–1002.

Boege, V. et al. (2009) Building Peace and Political Community in Hybrid Political Orders. *International Peacekeeping*. [Online] 16 (5), 599–615. [online]. Available from: http://www.tandfonline.com/doi/abs/10.1080/13533310903303248 (Accessed 19 August 2013).

Boyd, D. et al. (2015) *Una Hakika: mapping and countering the flow of misinformation in Kenya's Tana Delta*. [online]. Available from: https://thesentinelproject.org/wp-content/uploads/2015/12/UHPublicReport_Final.pdf (Accessed 10 March 2016). [online]. Available from: https://thesentinelproject.org/wp-

content/uploads/2015/12/UHPublicReport_Final.pdf (Accessed 10 March 2016).

Brewer, J. D. (2010) *Peace Processes: A Sociological Approach*. Cambridge: Polity Press.

Brinkerhoff, J. M. (2007) 'Contributions of the digital diasporas to governance reconstruction in fragile states: potential and promise', in Derrick W. Brinkerhoff (ed.) *Governance in Post-Conflict Societies: Rebuilding fragile states*. Abingdon, Oxon: Routledge. p.

Brinkerhoff, J. M. (2011) Diasporas and conflict societies: conflict entrepreneurs, competing interests or contributors to stability and development? *Conflict, Security & Development*. [Online] 11 (02), 115–143. [online]. Available from: http://www.tandfonline.com/doi/abs/10.1080/14678802.2011.572453 (Accessed 3 June 2013).

Brown, R. (2014) *WHITE PAPER Designing Peacebuilding Projects that Utilize Technology*. [online]. Available from: https://drive.google.com/file/d/0B1UWE4jwXgb_dTdrcjVJc2F2UE0/edit. (March 2014). [online]. Available from: https://drive.google.com/file/d/0B1UWE4jwXgb_dTdrcjVJc2F2UE0/edit.

Campbell, S. et al. (eds.) (2011a) *A Liberal Peace? The Problems and Practices of Peacebuilding*. London: Zed Books.

Campbell, S. et al. (2014) *Independent External Evaluation UN Peacebuilding Fund Project Portfolio in Burundi Written by About the Evaluation Team*. 1–87.

Campbell, S. et al. (2011b) 'Introduction: The Politics of Liberal Peace', in Susanna Campbell et al. (eds.) *A Liberal Peace? The Problems and Practices of Peacebuilding*. London: Zed Books. p.

Campbell, S. P. et al. (2014) *WHITE PAPER Technology and Peacebuilding Learning and Evaluation*.

Castells, M. (2009) *Communication Power*. Oxford: Oxford University Press.

Castells, M. (2010) *The Rise of the Network Society*. 2nd edition. Oxford: Wiley-Blackwell.

CENAP (2008) *Défis à la Paix Durable: Autoportrait du Burundi*.

Chandler, D. (2014) Democracy unbound? Non-linear politics and the politicization of everyday life. *European Journal of Social Theory*. [Online] 17 (1), 42–59. [online]. Available from: http://est.sagepub.com/cgi/doi/10.1177/1368431013491817

(Accessed 30 January 2014).

Chandler, D. (2013) 'Human-Centred' Development? Rethinking 'Freedom' and 'Agency' in Discourses of International Development. *Millennium - Journal of International Studies*. [Online] 42 (1), 3–23. [online]. Available from: http://mil.sagepub.com/cgi/doi/10.1177/0305829813492184 (Accessed 27 January 2014).

Chandler, D. (2013a) International Statebuilding and the Ideology of Resilience. *Politics*. [Online] 33 (4), 276–286. [online]. Available from: http://doi.wiley.com/10.1111/1467-9256.12009 (Accessed 23 January 2014).

Chandler, D. (2013b) Peacebuilding and the politics of non-linearity: rethinking 'hidden' agency and 'resistance'. *Peacebuilding*. [Online] 1 (1), 17–32. [online]. Available from: http://www.tandfonline.com/doi/abs/10.1080/21647259.2013.756256 (Accessed 12 November 2013).

Chandler, D. (2011) 'The Uncritical Critique of "Liberal Peace"', in Susanna Campbell et al. (eds.) *A Liberal Peace? The Problems and Practices of Peacebuilding*. London: Zed Books. p.

Chetail, V. (2009) *Post-Conflict Peacebuilding: A lexicon*. Oxford: Oxford University Press.

Chetail, V. & Jütersonke, O. (2015) 'Peacebuilding : A Review of the Academic Literature', in Geneva Peacebuilding Platform (ed.) *White Paper Series*. Geneva: GPP. pp. 1–14.

Chigas, D. (2016) *Build Peace 2016 dialogue: Diana Chigas & Bruno Siqueira*

Chungong, C. (2015a) *Build Peace 2015 Panel: Introducing Tech to Traditional Peacebuilding Programs*

Chungong, C. (2015b) *Introducing Technology to Traditional Peacebuilding Programs* [online]. Available from: http://howtobuildpeace.org/blog/cindy-chungong1/ (Accessed 25 March 2015).

Dajer, D. (2016) *Build Peace 2016 Dialogue: Jonathan Stray & Diana Dajer* [online]. Available from: https://www.youtube.com/watch?v=l9N6avxefEI&list=PLvXH56nHFZ8OXkGB4_3qw4bQAwpNZc0ED&index=7 (Accessed 5 February 2017).

Dencik, L. (2013) Alternative news sites and the complexities of 'space'. *New Media & Society*. [Online] 15 (8), 1207–1223. [online]. Available from: http://nms.sagepub.com/cgi/doi/10.1177/1461444812471812 (Accessed 26

February 2014).

Diamond, L. & McDonald, J. W. (1996) *Multi-Track Diplomacy: A Systems Approach to Peace*. West Hartford, CT: Kumarian Press.

Dunbrack, A. (2015) *Build Peace 2015 Panel: Introducing Tech to Traditional Peacebuilding Programs*

Earl, J. & Kimport, K. (2011) *Digitally Enabled Social Change : Activism in the Internet Age*. Cambridge, MA: MIT Press.

Enloe, C. H. (2004) *The curious feminist : searching for women in a new age of empire*. University of California Press. [online]. Available from: https://books.google.co.uk/books?id=Uy4lDQAAQBAJ&pg=PA22&lpg=PA22&dq=%27For+an+explanation+to+be+useful,+a+great+deal+of+human+dignity+is+left+on+the+cutting+room+floor%27&source=bl&ots=CCNxl_XleQ&sig=mRoFzvDwnegsHqrYhPOlfdad8sM&hl=en&sa=X&ved=0ahUKEwjZzKPQ4fLXAhVqCcAKHdvyBxcQ6AEILDAC#v=onepage&q='For an explanation to be useful%2C a great deal of human dignity is left on the cutting room floor'&f=false (Accessed 5 December 2017).

Fals Borda, O. (2000) 'Participatory (Action) Research in Social Theory: Origins and Challenges', in Peter Reason & Hilary Bradbury (eds.) *Handbook of action research*. London: Sage Publications. pp. 27–37.

Firchow, P. et al. (2017) PeaceTech: The Liminal Spaces of Digital Technology in Peacebuilding. *International Studies Perspectives*. [Online] 18 (1), 4–42. [online]. Available from: https://academic.oup.com/isp/article-lookup/doi/10.1093/isp/ekw007 (Accessed 14 November 2017).

Flanagin, a. J. et al. (2010) Technical code and the social construction of the internet. *New Media & Society*. [Online] 12 (2), 179–196.

Galtung, J. (1975) *War and Defence: Essays in Peace Research, Vol. 1*. Copenhagen: Christian Ejlers.

Gaskell, J. R. et al. (n.d.) *Uses of Information and Communication Technologies (ICTs) for EU Conflict Prevention and Peacebuilding*. [online]. Available from: http://www.woscap.eu/documents/131298403/131382878/WOSCAP+-+ICTs+-+ScopingStudy-30Nov2015-LSE.pdf/66a358ce-d961-471a-99c7-9166e62275d0. [online]. Available from: http://www.woscap.eu/documents/131298403/131382878/WOSCAP+-+ICTs+-+ScopingStudy-30Nov2015-LSE.pdf/66a358ce-d961-471a-99c7-9166e62275d0.

Gee, J. P. & Handford, M. (eds.) (2012) *The Routledge Handbook of Discourse Analysis*. London & New York: Routledge. [online]. Available from: http://english.iaukhomein.ac.ir/Files/26/Content/(Routledge handbooks in applied linguistics) James Paul Gee_ Michael Handford-The Routledge handbook of discourse analysis-Routledge (2012)_2.pdf#page=36 (Accessed 9 October 2017).

Gibson, J. J. (1979) *The Ecological Approach to Perception*. London: Houghton Mifflin.

Mac Ginty, R. (2011) *International Peacebuilding and Local Resistance: Hybrid Forms of Peace*. [Online]. Basingstoke: Palgrave Macmillan. [online]. Available from: http://www.palgraveconnect.com/doifinder/10.1057/9780230307032 (Accessed 18 November 2013).

Mac Ginty, R. (2013) *Routledge Handbook of Peacebuilding*. Roger Mac Ginty (ed.). Abingdon, Oxon: Routledge.

Mac Ginty, R. (2015) Where is the local? Critical localism and peacebuilding. *Third World Quarterly*. [Online] 36 (5), 840–856. [online]. Available from: http://www.tandfonline.com/doi/full/10.1080/01436597.2015.1045482.

Mac Ginty, R. & Richmond, O. P. (2013) The local turn in peace building: a critical agenda for peace. *Third World Quarterly*. [Online] 34 (5), 763–783. [online]. Available from: http://ezproxy.massey.ac.nz/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=88395967&site=eds-live&scope=site.

Goldsmith, A. A. (2007) ‘’Does Nation Building Work? Reviewing the record’, in Dreick W. Brinkerhoff (ed.) *Governance in Post-Conflict Societies: Rebuilding fragile states*. Oxon: Routledge. pp. 25–44.

Grint, K. & Woolgar, S. (1997) *The Machine at Work*. Cambridge: Polity.

Gustavsen, B. (2000) ‘Theory and Practice: the Mediating Discourse’, in Peter Reason & Hilary Bradbury (eds.) *Handbook of Action Research*. London: Sage Publications. pp. 17–26.

Hackett, E. J. et al. (eds.) (2008) *The Handbook of Science and Technology Studies*. 3rd edition. Cambridge, MA: MIT Press.

Haj-Omar, D. (2015) *Build Peace 2015 Keynote: Dalia Haj-Omar*

Halford, S. et al. (2010) ‘A Manifesto for Web Science?’, in *Proceedings of the WebSci10: Extending the Frontiers of Society On-Line*. 2010 Raleigh: ACM Press. pp. 1–6. [online]. Available from: http://eprints.soton.ac.uk/271033/1/manifestoACM.pdf.

Handschin, S. et al. (2016) *Conflict Sensitivity: Taking it to the Next Level*. [online]. Available from: http://www.swisspeace.ch/fileadmin/user_upload/Media/Publications/Working_Paper_2_2016.pdf (Accessed 18 September 2017). [online]. Available from: http://www.swisspeace.ch/fileadmin/user_upload/Media/Publications/Working_Paper_2_2016.pdf (Accessed 18 September 2017).

Haraway, D. J. (1991) *Simians, cyborgs and women : the reinvention of nature*. London: Free Association.

Hasler, B. S. et al. (2014) Virtual peacemakers: mimicry increases empathy in simulated contact with virtual outgroup members. *Cyberpsychology, behavior and social networking*. [Online] 17 (12), 766–771. [online]. Available from: http://online.liebertpub.com/doi/abs/10.1089/cyber.2014.0213 (Accessed 27 November 2015).

Hattotuwa, S. (2013) Big Data and Peacebuilding. *Stability: International Journal of Security & Development*. 2 (3), 1–3.

Hattotuwa, S. (2015) *Build Peace 2015 Panel: Power Dynamics of Technology for Peacebuilding* [online]. Available from: https://youtu.be/wRL1mQlAnk8?list=PLvXH56nHFZ8N1cc8SXarHXhGRcgNfWrHb (Accessed 25 September 2015).

Hattotuwa, S. (2014) *ICT4Peace: future conflict and its transformation* [online]. Available from: https://www.youtube.com/watch?v=boYC4ESVzTw&index=18&list=PLvXH56nHFZ8OzD1ic15k_bv5ysZbqnO2b (Accessed 15 October 2014).

Hattotuwa, S. (2016) *Sanjana Hattotuwa - opening remarks at Build Peace 2016*

Hattotuwa, S. (2004) Untying the Gordian Knot: ICT for Conflict Transformation and Peacebuilding. *Dialogue*. 2 (2), 39–68. [online]. Available from: http://www.polsis.uq.edu.au/dialogue/vol-2-2-3.pdf.

Heathershaw, J. (2013) Towards better theories of peacebuilding: beyond the liberal peace debate. *Peacebuilding*. [Online] 1 (2), 275–282. [online]. Available from: http://www.tandfonline.com/doi/abs/10.1080/21647259.2013.783260 (Accessed 11 January 2014).

Helbing, D. (2016) *Host Address at Build Peace 2016: Dirk Helbing*

Hersi, M. (2015) *Build Peace 2015 Panel: Changing Behaviours Through Technology*

Himelfarb, S. (2015) *Build Peace 2015 Keynote: Sheldon Himelfarb*

Himelfarb, S. (2009) Media and peacebuilding: the new army stability doctrine and media sector development. *Media, War & Conflict*. [online]. Available from: http://mwc.sagepub.com/content/2/1/7.short (Accessed 30 November 2015).

Hoffmann, J. (2014) Conceptualising 'communication for peace'. Peacebuilding [online]. Available from: http://www.tandfonline.com/doi/abs/10.1080/21647259.2013.866461 (Accessed 14 February 2014). 2 (1) p.100–117. [online]. Available from: http://www.tandfonline.com/doi/abs/10.1080/21647259.2013.866461 (Accessed 14 February 2014).

Howard, P. N. & Parks, M. R. (2012) Social Media and Political Change: Capacity, Constraint, and Consequence. *Journal of Communication*. [Online] 62 (2), 359–362. [online]. Available from: http://doi.wiley.com/10.1111/j.1460-2466.2012.01626.x (Accessed 23 May 2013).

Howard, R. (2002) *An operational framework for media and peacebuilding*. [online]. Available from: http://www.konfliktbearbeitung.net/downloads/file916.pdf (Accessed 30 November 2015).

Hutchby, I. (2001) Technologies, Texts and Affordances. *Sociology*. [Online] 35 (2), 441–456. [online]. Available from: http://soc.sagepub.com/cgi/doi/10.1177/S0038038501000219 (Accessed 18 July 2014).

Ioannou, A. et al. (2015) USING TABLETOPS TO REDUCE INTERGROUP CONFLICT IN A SCHOOL CONTEXT. INTED2015 Proceedings [online]. Available from: http://library.iated.org/view/IOANNOU2015USI (Accessed 27 November 2015). p.6798–6807. [online]. Available from: http://library.iated.org/view/IOANNOU2015USI (Accessed 27 November 2015).

Jabri, V. (2013) Peacebuilding, the local and the international: a colonial or a postcolonial rationality? *Peacebuilding*. [Online] 1 (1), 3–16. [online]. Available from: http://www.tandfonline.com/doi/abs/10.1080/21647259.2013.756253 (Accessed 18 November 2013).

Johnson, R. B. & Onwuegbuzie, A. J. (2004) Mixed Methods Research: A Research Paradigm Whose Time Has Come. *Educational Researcher*. [Online] 33 (7), 14–26.

[online]. Available from: http://journals.sagepub.com/doi/10.3102/0013189X033007014 (Accessed 4 April 2018).

Kahl, A. & Puig Larrauri, H. (2013) Technology for Peacebuilding. *Stability: International Journal of Security & Development*. 2 (3), 1–15.

Kaldor, M. (1999) *New and Old Wars: Organised Violence in a Global Era*. Cambridge: Polity Press.

Kappler, S. (2013) Coping with research: local tactics of resistance against (mis-)representation in academia. *Peacebuilding*. [Online] 1 (1), 125–140. [online]. Available from: http://www.tandfonline.com/doi/abs/10.1080/21647259.2013.756279 (Accessed 18 November 2013).

Kappler, S. (2015) The dynamic local: delocalisation and (re-)localisation in the search for peacebuilding identity. *Third World Quarterly*. [Online] 36 (5), 875–889. [online]. Available from: http://www.tandfonline.com/doi/full/10.1080/01436597.2015.1025740.

Kent, G. (2006) Organised diaspora networks and homeland peacebuilding: the Bosnian world diaspora network as a potential development actor. *Conflict, Security & Development*. [Online] 6 (3), 449–469. [online]. Available from: http://www.tandfonline.com/doi/abs/10.1080/14678800600933639 (Accessed 20 May 2014).

Kesby, M. et al. (2007) 'Participation as a form of power: retheorising empowerment and spatialising Participatory Action Research', in Sara Kindon et al. (eds.) *Participatory Action Research Approaches and Methods: Connecting people, participation and place*. London: Routledge. p.

Khondker, H. H. (2011) Role of the New Media in the Arab Spring. *Globalizations*. [Online] 8 (5), 675–679. [online]. Available from: http://www.tandfonline.com/doi/abs/10.1080/14747731.2011.621287 (Accessed 26 May 2014).

Kindon, S. et al. (2007a) 'Introduction: connecting people, participation and place', in Sara Kindon et al. (eds.) *Participatory Action Research Approaches and Methods: Connecting people, participation and place*. London: Routledge. p.

Kindon, S. et al. (2007b) 'Participatory Action Research: origins, approaches and

methods', in Sara Kindon et al. (eds.) *Participatory Action Research Approaches and Methods: Connecting people, participation and place*. London: Routledge. p.

Klein, N. (2007) *The Shock Doctrine: The Rise of Disaster Capitalism*. London: Penguin.

Krause, K. & Jutersonke, O. (2005) Peace, Security and Development in Post-Conflict Environments. *Security Dialogue*. [Online] 36 (4), 447–462. [online]. Available from: http://sdi.sagepub.com/cgi/doi/10.1177/0967010605060449 (Accessed 3 June 2013).

Krause, M. (2014) *The good project : humanitarian relief NGOs and the fragmentation of reason*. Chicago: Chicago University Press.

Larrauri, H. P. et al. (2015) 'New Technologies : The Future of Alternative Infrastructures for Peace', in Geneva Peacebuilding Platform (ed.) *White Paper Series*. Geneva: GPP. p. [online]. Available from: http://www.gpplatform.ch/sites/default/files/WPS 20 - New Technologies - Puig Larrauri - Davies - Ledesma - Welch.pdf.

Lederach, J. P. (1997) *Building Peace: Sustainable Reconciliation in Divided Societies*. Washington, DC: United States Institute of Peace Press.

Leonardsson, H. & Rudd, G. (2015) The 'local turn' in peacebuilding: a literature review of effective and emancipatory local peacebuilding. *Third World Quarterly*. [Online] 36 (5), 825–839. [online]. Available from: http://www.tandfonline.com/doi/full/10.1080/01436597.2015.1029905.

Letouze, E., Meier, P., et al. (2013) 'Big Data for Conflict Prevention: New Oil and Old Fires', in Francesco Mancini (ed.) *New Technology and the Prevention of Violence and Conflict*. New York: IPI & UNDP. p.

Letouze, E., Vinck, P., et al. (2013) 'Big Data for Conflict Prevention: New Oil and Old Fires', in Francesco Mancini (ed.) *New Technology and the Prevention of Violence and Conflict*. New York: International Peace Institute. p. [online]. Available from: http://www.ipinst.org/media/pdf/publications/ipi_epub_new_technology_final.pdf.

Lunch, C. (2016) *Build Peace 2016 Short Talks: Chris Lunch*

MacKenzie, D. A. & Wajcman, J. (eds.) (1999) *The Social Shaping of Technology*. 2nd edition. Buckingham: Open University Press.

Mancini, F. (2013) *New Technology and the Prevention of Violence and Conflict*. (April).

Mancini, F. & Perry, C. (2014) *WHITE PAPER Use of Technology for Conflict Analysis*.

[online]. Available from: https://drive.google.com/file/d/0B_pVVNdOGq6eN3pHc29wNm4yZGs/edit. (April 2014). [online]. Available from: https://drive.google.com/file/d/0B_pVVNdOGq6eN3pHc29wNm4yZGs/edit.

Mancini, F. & Reilly, M. O. (2013) *New Technology and the Prevention of Violence and Conflict*. 2 (3), 1–9.

Mani, R. & Krause, J. (2009) 'Democratic Governance', in *Post-Conflict Peacebuilding: A Lexicon*. pp. 105–122.

Mattingly, D. J. & Falconer-Al-Hindi, K. (1995) Should Women Count? A Context for the Debate*. *The Professional Geographer*. [Online] 47 (4), 427–435. [online]. Available from: http://www.blackwell-synergy.com/links/doi/10.1111%2Fj.0033-0124.1995.00427.x (Accessed 6 December 2017).

Matveeva, A. (2013) ''Conflict Cure or Curse? Information and Communication Technologies in Kyrgyzstan', in Francesco Mancini (ed.) *New Technology and the Prevention of Violence and Conflict*. New York: International Peace Institute. p. [online]. Available from: http://www.ipinst.org/media/pdf/publications/ipi_epub_new_technology_final.pdf.

McFetridge, P. (2016) *Build Peace 2016 Short Talks: Paula McFetridge*

McNiff, J. & Whitehead, J. (2011) *All You Need to Know about Action Research*. 2nd edition. London: Sage Publications.

Meier, P. (2015) *Build Peace 2015 Keynote: Patrick Meier - YouTube* [online]. Available from: https://www.youtube.com/watch?v=rgdlnbpC74Y&list=PLvXH56nHFZ8N1cc8SXarHXhGRcgNfWrHb&index=4&t=233s (Accessed 21 September 2016).

Menocal, A. R. (2010) *"State-Building For Peace" – A New Paradigm For International Engagement in Post-Conflict Fragile States?*

Muggah, R. (2009) 'Disarmament, Demobilization, and Reintegration', in *Post-Conflict Peacebuilding: A Lexicon2*. pp. 123–137.

Muggah, R. & Diniz, G. (2013) 'Using Information and Communication Technologies for Violence Prevention in Latin America', in Francesco Mancini (ed.) *New Technology and the Prevention of Violence and Conflict*. New York: International Peace Institute. p. [online]. Available from:

http://www.ipinst.org/media/pdf/publications/ipi_epub_new_technology_final.pdf.

Murphy, O. (2015) *Build Peace 2015 Panel: Power Dynamics of Technology for Peacebuilding* [online]. Available from: https://www.youtube.com/watch?v=wRL1mQlAnk8&list=PLvXH56nHFZ8N1cc8SXarHXhGRcgNfWrHb&t=1594s&index=15 (Accessed 25 September 2016).

Musila, G. M. (2013) 'Early Warning and the Role of New Technologies in Kenya', in Francesci Mancini (ed.) *New Technology and the Prevention of Violence and Conflict*. New York: International Peace Institute. p. [online]. Available from: http://www.ipinst.org/media/pdf/publications/ipi_epub_new_technology_final.pdf.

Neumann, P. R. (2009) *Old & New Terrorism*. Cambridge: Polity Press.

Newman, E. (2013) The violence of statebuilding in historical perspective: implications for peacebuilding. *Peacebuilding*. [Online] 1 (1), 141–157. [online]. Available from: http://www.tandfonline.com/doi/abs/10.1080/21647259.2013.756281 (Accessed 13 November 2013).

Nicolini, D. (2012) *Practice theory, work, and organization : an introduction*. Oxford University Press. [online]. Available from: https://global.oup.com/ukhe/product/practice-theory-work-and-organization-9780199231591?cc=gb&lang=en& (Accessed 28 March 2018).

Nussbaum, T. et al. (2012) A new deal for engagement in Fragile States. *Conflict, Security & Development*. 12 (May 2013), 37–41.

OECD-DAC (2012) *Guidance on Evaluating Peacebuilding Activities in Settings of Conflict and Fragility - Improving learning for results*. 33.

Oliphant, V. (2015) *Build Peace 2015 Panel: Changing Behaviours Through Technology* [online]. Available from: https://www.youtube.com/watch?v=8fAp2mRVMmI (Accessed 22 September 2016).

Ortner, S. B. (1984) Theory in Anthroplogy since the Sixties. *Comparative Studies in Soceity and History*. 26 (1), 126–166. [online]. Available from: http://mysite.du.edu/~lavita/anth-3135-feasting-13f/_docs/ortner_theory_in_anthropology.pdf (Accessed 2 April 2018).

Paffenholz, T. (2010) 'Civil Society and Peacebuilding', in Thania Paffenholz (ed.) *Civil Society & Peacebuilding: A Critical Assessment*. Boulder: Lynne Rienner Publishers. p.

Paffenholz, T. (2011) 'Civil Society Beyond the Liberal Peace and its Critique', in Susanna

Campbell et al. (eds.) *A Liberal Peace? The Problems and Practices of Peacebuilding*. London: Zed Books. p.

Paffenholz, T. (2014) International peacebuilding goes local: analysing Lederach's conflict transformation theory and its ambivalent encounter with 20 years of practice. Peacebuilding [online]. Available from: http://www.tandfonline.com/doi/abs/10.1080/21647259.2013.783257 (Accessed 14 February 2014). 2 (1) p.11–27. [online]. Available from: http://www.tandfonline.com/doi/abs/10.1080/21647259.2013.783257 (Accessed 14 February 2014).

Paffenholz, T. (2015) Unpacking the local turn in peacebuilding: a critical assessment towards an agenda for future research. *Third World Quarterly*. [Online] 36 (5), 857–874. [online]. Available from: http://www.tandfonline.com/doi/full/10.1080/01436597.2015.1029908.

Paris, R. (2011a) 'Alternatives to Liberal Peace?', in Susanna Campbell et al. (eds.) *A Liberal Peace? The Problems and Practices of Peacebuilding*. London: Zed Books. p.

Paris, R. (2004) *At War's End: Building Peace After Civil Conflict*. Cambridge: Cambridge University Press.

Paris, R. (2011b) 'Critiques of the Liberal Peace', in Susanna Campbell et al. (eds.) *A Liberal Peace? The Problems and Practices of Peacebuilding*. London: Zed Books. p.

Paris, R. (2010) Saving liberal peacebuilding. *Review of International Studies*. [Online] 36 (02), 337. [online]. Available from: http://www.journals.cambridge.org/abstract_S0260210510000057 (Accessed 20 January 2014).

Paris, R. & Sisk, T. D. (eds.) (2009) *The Dilemmas of Statebuilding: Confronting the Contradictions of Postwar Peace Operations*. Oxon: Routledge.

Pickering, A. (1993) The Mangle of Practice: Agency and Emergence in the Sociology of Science. *Source: American Journal of Sociology*. 99 (3), 559–589. [online]. Available from: http://www.jstor.org/stable/2781283 (Accessed 31 March 2018).

Pinch, T. J. & Bijker, W. E. (1984) The Social Construction of Facts and Artefacts: or How the Sociology of Science and the Sociology of Technology might Benefit Each Other. *Social Studies of Science*. 14399–441.

Popplewell, R. (2018) Civil society, hybridity and peacebuilding in Burundi: questioning

authenticity. *Third World Quarterly*. [Online] 1–18. [online]. Available from: https://www.tandfonline.com/doi/full/10.1080/01436597.2018.1432347 (Accessed 5 April 2018).

Pugh, M. (2013) 'The problem-solving and critical paradigms', in Roger Mac Ginty (ed.) *Routledge Handbook of Peacebuilding*. Abingdon, Oxon: Routledge. p.

Puig Larrauri, H. (2013) 'New Technologies and Conflict Prevention in Sudan and South Sudan', in Francesco Mancini (ed.) *New Technology and the Prevention of Violence and Conflict*. New York: International Peace Institute. p. [online]. Available from: http://www.ipinst.org/media/pdf/publications/ipi_epub_new_technology_final.pdf.

Reason, P. & Bradbury, H. (2000) 'Introduction: Inquiry & participation in search of a world worthy of human aspiration', in *Handbook of action research*. London: Sage Publications. pp. 1–14.

Richmond, O. P. (2009) A post-liberal peace: Eirenism and the everyday. *Review of International Studies*. [Online] 35 (03), 557. [online]. Available from: http://www.journals.cambridge.org/abstract_S0260210509008651 (Accessed 30 May 2014).

Richmond, O. P. et al. (2015) The 'Field' in the Age of Intervention: Power, Legitimacy, and Authority Versus the 'Local'. *Millennium - Journal of International Studies*. [Online] [online]. Available from: http://mil.sagepub.com/cgi/doi/10.1177/0305829815594871.

Richmond, O. P. (n.d.) The Paradox of Peace and Power: Contamination of Enablement. *International Politics*.

Richmond, O. P. & Mac Ginty, R. (2013) Editors' introduction. *Peacebuilding*. [Online] 1 (1), 1–2. [online]. Available from: http://www.tandfonline.com/doi/abs/10.1080/21647259.2013.756252 (Accessed 18 November 2013).

Rose, G. (1997) Situating knowledges: positionality, reflexivities and other tactics. *Progress in Human Geography*. 21 (3), 305–320. [online]. Available from: https://www.sussex.ac.uk/webteam/gateway/file.php?name=situating-knowledges-rose.pdf&site=41 (Accessed 4 December 2017).

Ryan, S. (2013) 'The evolution of peacebuilding', in Roger Mac Ginty (ed.) *Routledge Handbook of Peacebuilding*. Abingdon, Oxon: Routledge. p.

Saad, S. (2015) *Build Peace 2015 Panel: Power Dynamics of Technology for Peacebuilding* [online]. Available from: https://www.youtube.com/watch?v=wRL1mQlAnk8&list=PLvXH56nHFZ8N1cc8SXarHXhGRcgNfWrHb&t=1594s&index=15 (Accessed 25 September 2016).

Sabaratnam, M. (2011) 'The Liberal Peace? An Intellectual History of International Conflict Management, 1990-2010', in Susanna Campbell et al. (eds.) *A Liberal Peace? The Problems and Practices of Peacebuilding*. London: Zed Books. p.

Schatzki, T. R. (2005) Peripheral Vision. *Organization Studies*. [Online] 26 (3), 465–484. [online]. Available from: http://journals.sagepub.com/doi/10.1177/0170840605050876 (Accessed 27 March 2018).

Schatzki, T. R. (2001) 'Practice Mind-ed Orders', in Theodore R. Schatzki et al. (eds.) *The Practice Turn in Contemporary Theory*. Oxon: Routledge. pp. 42–55.

Schatzki, T. R. (2017) 'Sayings, Texts and Discursive Formations', in Allison Hui et al. (eds.) *The nexus of practices: connections, constellations, practitioners*. Oxon: Routledge. pp. 126–140.

Schatzki, T. R. et al. (eds.) (2001) *The practice turn in contemporary theory*. Routledge.

Secretary-General, U. (1992) *An Agenda for Peace Preventive diplomacy , peacemaking and peace-keeping*. (June).

Sending, O. J. (2011) 'The Effects of Peacebuilding: Sovereignty, Patronage and Power', in Susanna Campbell et al. (eds.) *A Liberal Peace? The Problems and Practices of Peacebuilding*. London: Zed Books. p.

Shah, S. & Brown, R. (2014) *Programming for Peace: Sisi Ni Amani Kenya and the 2013 Elections*. [online]. Available from: http://www.global.asc.upenn.edu/app/uploads/2014/12/SisiNiAmaniReport.pdf (Accessed 13 March 2016). [online]. Available from: http://www.global.asc.upenn.edu/app/uploads/2014/12/SisiNiAmaniReport.pdf (Accessed 13 March 2016).

Shneyer, A. (2015) *Build Peace 2015 Panel: Introducing Tech to Traditional Peacebuilding Programs* [online]. Available from: https://www.youtube.com/watch?v=J9abLHdmOAY&list=PLvXH56nHFZ8N1cc8SXarHXhGRcgNfWrHb&index=17 (Accessed 30 September 2016).

Shove, E. et al. (2012) *The dynamics of social practice : everyday life and how it changes*. SAGE. [online]. Available from: https://books.google.co.uk/books/about/The_Dynamics_of_Social_Practice.html?id=_RjrJ-6BNyMC&source=kp_cover&redir_esc=y (Accessed 28 November 2017).

Siqueira, B. (2016) *Build Peace 2016 dialogue: Diana Chigas & Bruno Siqueira* [online]. Available from: https://www.youtube.com/watch?v=teEvyA8Rx3U&list=PLvXH56nHFZ8OXkGB4_3qw4bQAwpNZc0ED&index=4 (Accessed 3 February 2017).

Sismondo, S. (2004) *An Introduction to Science and Technology Studies*. Malden: Blackwell Publishing Ltd.

Sörensen, J. S. (2012) The Failure of State- building – Changing Biopolitics and the Splintering of Societies. *Development Dialogue*. 49–65.

Staeheli, L. A. & Lawson, V. A. (2010) Feminism, Praxis, and Human Geography. *Geographical Analysis*. [Online] 27 (4), 321–338. [online]. Available from: http://doi.wiley.com/10.1111/j.1538-4632.1995.tb00914.x (Accessed 6 December 2017).

Stoker, G. (1998) *Governance as theory: five propositions*. [Online] [online]. Available from: http://dx.doi.org/10.1111/1468-2451.00106.

Stratis, S. & Akbil, E. (2017) Reclaiming Political Urbanism in Peace Building Processes: The Hands-on Famagusta project, Cyprus. *FOOTPRINT*. [Online] 10 (2), 157–162. [online]. Available from: http://footprint.tudelft.nl/index.php/footprint/article/view/1503 (Accessed 13 March 2017).

Stratis, S. & Can Akbil, E. (2015) *Build Peace 2015 Keynote: Socrates Stratis & Esra Can Akbil*

Stray, J. (2016) *Build Peace 2016 Dialogue: Jonathan Stray & Diana Dajer*

Suchman, L. A. (1987) *Plans and situated actions: the problem of human-machine communication*. Cambridge: Cambridge University Press.

Symonds, P. (2014) *UNDP Crisis and Recovery Mapping and Analysis Project. Partial Final Review*. [online]. Available from: https://info.undp.org/docs/pdc/Documents/SDN/CRMA Partial Final Evalution (final version 12 Aug 2014).pdf (Accessed 11 March 2016). [online]. Available from:

https://info.undp.org/docs/pdc/Documents/SDN/CRMA Partial Final Evalution (final version 12 Aug 2014).pdf (Accessed 11 March 2016).

Tellidis, I. (2015) *Build Peace 2015 Panel: Introducing Tech to Traditional Peacebuilding Programs* [online]. Available from: https://www.youtube.com/watch?v=J9abLHdmOAY&list=PLvXH56nHFZ8N1cc8SXarHXhGRcgNfWrHb&index=17 (Accessed 30 September 2016).

Tellidis, I. & Kappler, S. (2015) Information and communication technologies in peacebuilding: Implications, opportunities and challenges. *Cooperation and Conflict*. [Online] 0010836715603752-. [online]. Available from: http://cac.sagepub.com/content/early/2015/09/23/0010836715603752.abstract (Accessed 25 October 2015).

Tellidis, I. & Kappler, S. (2014) Peacebuilding v2.0? *Pax in Nuce*. [online]. Available from: http://paxinnuce.com/2014/03/03/peacebuilding-v2-0/.

Thomas, P. (2015) *Build Peace 2015 Panel: Power Dynamics of Technology for Peacebuilding* [online]. Available from: https://www.youtube.com/watch?v=wRL1mQlAnk8&list=PLvXH56nHFZ8N1cc8SXarHXhGRcgNfWrHb&t=1594s&index=15 (Accessed 25 September 2016).

Turk, V. (2009) 'Capacity-building', in *Post-Conflict Peacebuilding: A Lexicon*. pp. 34–47.

Turner, S. (2008) Cyberwars of Words: Expressing the Unspeakable in Burundi's Diaspora. *Journal of Ethnic Migration Studies*. [Online] 34 (7), 1161–1180. [online]. Available from: http://proxygw.wrlc.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=aph&AN=33522536&site=ehost-live (Accessed 3 June 2013).

UNDP (2014) *Assessment of South Sudan's Crisis and Recovery Mapping and Analysis*. [online]. Available from: https://erc.undp.org/evaluation/documents/download/8650. [online]. Available from: https://erc.undp.org/evaluation/documents/download/8650.

UNDP (2013) *Issue Brief: Mobile Technology for Conflict Prevention (July 2013)*. (July).

United Nations (2000) *Report of the Panel on UN Peace Operations*. 59470 (August).

United Nations (2010) *Review of the United Nations Peacebuiding Architecture*.

Varela, M. (2016) *Build Peace 2016 Short Talks: Miguel Varela*

Weimann, G. (2006) *Terror on the Internet: the new arena, the new challenges*. Washington, DC: United States Institute of Peace Press.

Welch, J. R. et al. (2014) Conceptualising the web for post-conflict governance building. *Peacebuilding*. [Online] (November 2014), 37–41.

Welch, J. R. et al. (2015) 'Information and Communication Technologies (ICTs) and Peacebuilding', in *Proceedings of the ACM Web Science Conference - WebSci '15*. [Online]. 2015 New York, New York, USA: ACM Press. pp. 1–9. [online]. Available from: http://dl.acm.org/citation.cfm?doid=2786451.2786479 (Accessed 26 April 2018).

Wennmann, A. (2009) 'Conflict Economies', in *Post-Conflict Peacebuilding: A Lexicon*. pp. 74–77.

Van Der Windt, P. (2014) 'From Crowdsourcing to Crowdseeding', in Steven Livingstone & Gregor Walter-Drop (eds.) *Bits and Atoms: Information and Communication Technology in Areas of Limited Statehood*. Oxford: Oxford University Press. pp. 144–156.

Van der Windt, P. & Humphreys, M. (2014) Crowdseeding in Eastern Congo Using Cell Phones to Collect Conflict Events Data in Real Time. *Journal of Conflict Resolution*. [online]. Available from: http://jcr.sagepub.com/content/early/2014/11/04/0022002714553104.abstract (Accessed 25 October 2015).

Winner, L. (1999) 'Do artefacts have politics?', in Donald A. MacKenzie & Judy Wajcman (eds.) *The Social Shaping of Technology*. 2nd edition Buckingham: Open University Press. p.

Winner, L. (1996) The Gloves Come off: Shattered Alliances in Science and Technology Studies. *Social Text*. 46–47 (Spring-Summer), 81–91.

Wolfsfeld, G. et al. (2013) Social Media and the Arab Spring: Politics Comes First. *The International Journal of Press/Politics*. [Online] 18 (2), 115–137. [online]. Available from: http://hij.sagepub.com/cgi/doi/10.1177/1940161212471716 (Accessed 6 June 2014).

Wood, P. (2013) Face-to-face with Abu Sakkar, Syria's 'heart-eating cannibal'. *BBC News*. 5 July. [online]. Available from: http://www.bbc.co.uk/news/magazine-23190533.

Wyatt, S. (2008) 'Technological Determinism Is Dead; Long Live Technological

Determinism', in Edward J. Hacket et al. (eds.) *The Handbook of Science and Technology Studies*. 3rd edition Cambridge, MA: MIT Press. pp. 165–180.

Zalewski, M. (1997) ''All these theories yet the bodies keep piling up': theory, theorists, theorising', in Steve Smith et al. (eds.) *International theory: positivism and beyond*. Cambridge: Cambridge University Press. p.

Zuckerman, E. (2014) *Closing keynote at Build Peace 2014*

Zuckerman, E. & Leujeune, L. (eds.) (2014) *Global Dimensions of Digital Activism*. Cambridge, MA: MIT Center for Civic Media. [online]. Available from: http://book.globaldigitalactivism.org/.