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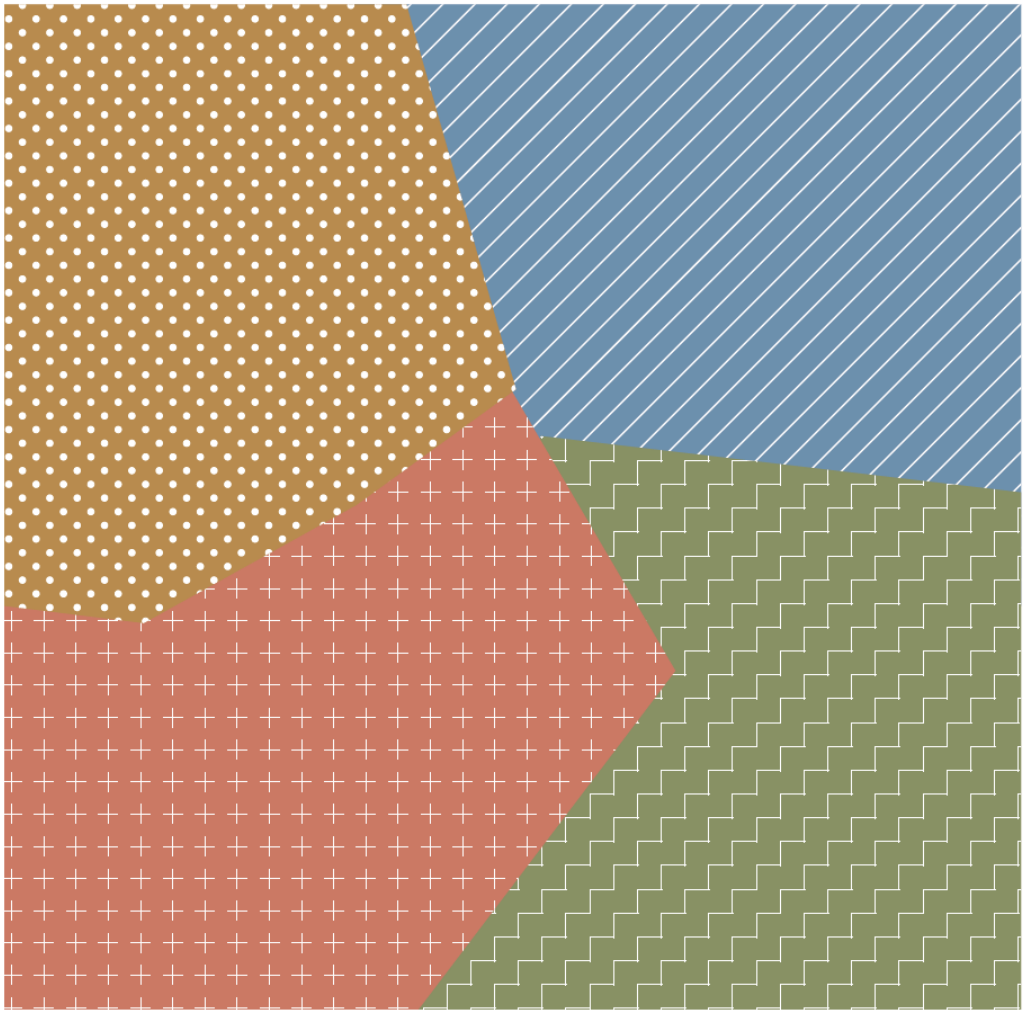

Uses of Information and Communication Technologies (ICTs) for EU Conflict Prevention and Peacebuilding

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USES OF INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTs) FOR EU CONFLICT PREVENTION AND PEACEBUILDING

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Whole of Society Conflict Prevention and Peacebuilding

This scoping study was produced as part of the project "Whole of Society Conflict Prevention and Peacebuilding", which aims to enhance the EU's peacebuilding and conflict prevention capabilities.

This paper is part of the first series of orientation papers that were intended to indicate lines of inquiry and propose research questions, as a basis for discussion and input for the project's Theoretical and Methodological Framework. They seek to provide an overview of scholarly knowledge about the EU's capabilities and means for conflict prevention and peacebuilding in relation to several cross-cutting themes and clusters that the project focuses on. More information at www.woscap.eu

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Executive summary

The unprecedented global adoption rates of information and communication technologies (ICTs) are rapidly changing the way people are communicating. For several years now, the role of ICTs has been a topic of discussion in various contexts such as conflict, development, humanitarian and socio-political movements. But to date little research has been undertaken into the part they might play in peacebuilding. In scoping out the possibilities for ICTs within EU conflict prevention and peacebuilding, this paper summarises the current role of ICTs in the context of peacebuilding scholarly knowledge, policy and practice with the aim of identifying further research questions and key methodological considerations.

A first challenge for a topic that remains under-researched and under-conceptualised stems from the difficulty in categorising practices. Indeed while little research has been undertaken, peacebuilding projects that use ICTs have proliferated over the past few years in disparate and wide ranging ways. Commentary initially focused on ICT tools, such as mobile phones or social media. Subsequently, authors attempted to provide a more holistic view by adopting a functional approach based on the attributes of ICTs used in peacebuilding contexts. We extend this perspective to include the agency dimension of various peacebuilding actors. We develop a socio-technical conceptual framework of leveraged 'affordances'- or functions- by these different actors. Based on emerging empirical work, we use four affordances of technology which have generally been used in peacebuilding contexts: data, communication, networking and mobilisation. We will then review existing practice by actors based on an international to local spectrum: the EU and other international governmental organisations, local and grassroots actors and the state. Using the concept of 'affordances' has two implications for our approach to this study: first it recognises that with ICTs, all the above affordances are simultaneously possible, but different actors might choose or have to leverage different ones in different contexts; secondly that this leveraging is a dynamic process which is hard to predict in practice. More specifically, we show emerging empirical evidence that although all actors leverage a wide range of ICT functions, there appears to be differences in those uses. And we suggest that more research is needed to uncover evidence of how the leveraging processes play out in peacebuilding contexts.

We further show that while the EU does not expressly have a policy on the uses of ICTs for peacebuilding, it recognises their transformative potential for society as part of its 'Digital Agenda for Europe', thus opening institutional avenues for their inclusion in its peacebuilding activities. With few examples of EU uses of ICTs, the bulk of our review focuses on other peacebuilding actors, showcasing the wide range of uses for different purposes: conflict prevention through early warning system; or rebuilding broken social ties through communication and the creation of safe spaces for contact and networking across divided communities.

These uses are generally underpinned by a positive bias in favour of the transformative potential of ICTs, but we highlight a series of operational and ethical challenges that could limit this potential. Access for example is far from homogenous, geographically, demographically and in terms of literacy. ICTs, as illustrated by the various state uses we present, can be used for or against peace; and they have also been observed to lead to simultaneous, often unintended, contradictory sets of consequences. For example, technologies used to spread messages of

peace in volatile environments can also be used to spread inflammatory rumours. In order to have meaningful impact when introduced through external support, ICTs need to be both appropriate and sustainable in a given context. Finally, current practice has not yet provided much evidence on the impact of these initiatives on political processes in conflict affected areas, a pertinent consideration for an actor such as the EU whose practices run across the multi-track diplomacy spectrum. Ethically we outline concerns specific to the technology in peacebuilding contexts: security of both users and infrastructures, ownership of systems, data and processes and collaboration with the private sector are all important considerations.

Finally we point out areas of overlap with the review agenda for EU conflict prevention and peacebuilding capabilities, as represented by activity clusters such as governance, multi-track diplomacy, security sector reform, and by cross-cutting normative issues such as local ownership, inclusivity (particularly gender) and coherence.

As empirical evidence remains very limited we build on questions raised by practitioners (Chungong 2015, Welch 2015) and academic literature (Puig Larrauri & Khal, 2013; Welch et al., 2014; Tellidis & Kappler, 2015) on inclusion, empowerment and impact, and identify the following key questions relevant to the potential uses of ICTs by the EU in its peacebuilding activities, but which remain unanswered at present:

- Has there been democratisation of technology uses in conflict affected areas? If so, what kind of democratisation has arisen? Does using ICTs in peacebuilding processes make these processes more inclusive?
- Have ICT uses led to more empowerment – and if so, whose?
- What is the nature of the dissonance between policy ideals and programming constraints?
- Can international actors empower local or grassroots actors by leveraging ICTs and can this process be sustainably locally owned?
- How can international actors support emergent, grassroots uses of ICTs for peacebuilding?
- Can technologies that are used by military and civilian peacebuilding practitioners contribute to building peace – and if so under what conditions?
- What consequences do (1), (2) and (3) have for the EU as an actor directly engaged in multi-track diplomacy?

This represents an undeniable opportunity for the EU to ground its approaches in more relevant empirical work adopting a socio-technical perspective which recognises the contingent effects of ICT uses in socio-political contexts and takes into account its many operational and ethical challenges.

1. Introduction

The world is witnessing an unprecedented growth in new information and communication technologies (ICTs). According to the International Telecommunications Union (ITU, 2015), by the end of 2015, "there [will be] more than 7 billion mobile cellular subscriptions, corresponding to a penetration rate of 97%, up from 738 million in 2000" with 2 billion from developing countries (ITU, 2015). ICTs are generally described as including a wide range of technologies used to access, generate and share information: from traditional broadcasting media such as television and radio to newer kinds of technologies such as computers, mobile phones, and networked communication systems. Taking into account a rapidly changing technological landscape, we define ICTs as including the different types of hardware, software or systems that enable people to access, generate and share information. This extends traditional definitions to include technologies such as video games that provide new spaces to share information and communicate, or even unmanned aerial vehicles (UAVs) that provide new ways to collect information remotely, moving beyond a focus on equipment to the way in which people use technologies.

The role of these technologies in political contexts has so far focused on socio-political movements (Earl & Kimport, 2011; Shirky, 2011) and conflict (Wolfsfeld et al., 2013), and research on the uses of ICTs in peacebuilding contexts remains at an embryonic stage. The EU External Action Service has yet to produce a statement or policy on ICTs in peacebuilding contexts, and there is at the time of writing no empirical research on EU practice in this domain. More broadly the overwhelming focus of enquiry has been on tools and uses - what ICTs have or can be used to help build peace (Kahl & Puig Larrauri, 2013). In this paper we focus on uses and suggest considering the additional dimension of the actors who use them, from international to local, with the understanding that such categorisations may prove hard to capture empirically (Mac Ginty & Richmond 2013; Mac Ginty 2011; Richmond *forthcoming*).

We first outline the current state of ICTs within peacebuilding scholarly knowledge, policy and practice with the aim of identifying further research questions and key methodological considerations. In section 2 we ground our approach in existing theory on technology and social change, which shifts our analytical focus from ICT tools to evolving practices and how they are located in complex information and political systems. This provides a more comprehensive analysis for a currently emerging field, and the operational and ethical challenges it (potentially) faces, which we discuss in section 3. In the absence of EU policy on this topic, we review practice from a range of international, state and local actors. After pointing out areas of overlap with the review agenda for EU peacebuilding capabilities in section 4, we conclude by highlighting avenues of further research in order to evaluate and strengthen EU capabilities in civilian peacebuilding.

2. Literature and practice review

While ICTs have been used in peacebuilding contexts for more than a decade, it has only recently become a concerted focus of practitioners and researchers. In 2013, Stability Journal launched a special collection on 'New Technologies for Peace and Development',[1] with earlier academic work focusing on the role of so-called "digital diasporas" (Brinkerhoff, 2011; Turner, 2008). Moving beyond diasporas, Kahl and Puig Larrauri (2013) argue that ICTs can connect people and give them a voice, thus allowing for new forms of engagement in peacebuilding contexts. They propose a four-fold framework of the functions technology can have in peacebuilding and its place within peacebuilding programmes: data processing, communication, gaming and engagement; they explore early warning, promoting peaceful attitudes, fostering collaboration and influencing policy, respectively (Kahl & Puig Larrauri 2013). Building on early practical assessments (Mancini & Reilly, 2013), Welch et. al (2014) identify five key ways ICTs have been conceptualised in governance building contexts: as a way to generate data; share information; as a management tool; an alternative space and, finally, as an empowerment tool.

As mentioned above early empirical work focused on specific tools, such as the Voix des Kivus project for example, which was a "crowd-seeding system in Eastern Congo that uses cell phones" (Van der Windt & Humphreys, 2014). Little empirical work has been conducted which provides a more comprehensive approach to inform policy direction and practice. This is perhaps due to the wide variety of examples in practice which creates difficulties regarding how to classify and categorise ICTs in peacebuilding. In the next section we identify some relevant entry points for categorisation.

2.1 Concepts and theories

The relationship between technology and its social effects has been the focus of a long standing debate in the field of Science and Technology Studies (STS) (Winner, 1996), which largely evolved as a critique of 'technological determinism'. The latter claims "that a given technology will produce predictable outcomes" (Halford et al., 2010, 2). In contrast to the perspective of technological determinism, 'social constructivists' such as Pinch and Bijker (1984), for example, showed how technological artefacts are interpreted by "relevant social groups". This is echoed in the social psychological literature. Social Representation theory (Moscovici, 2008) describes the sense making processes that communities engage in when confronted with something new. Lahlou (2008) further developed 'Installation Theory' to differentiate between institutional, physical and representational levels of adaptation and sense making. The argument is that something new will be made sense of within the physical affordances of the object – or "the possibilities offered for action" (Gibson, 1979, p.127; Hutchby, 2001) (physical) – as well as what individuals decide can be done with the given object (representational). Finally, the institutional level focuses on how the 'norms' of a community affect what the individuals within it may do with the new technology, highlighting

[1] See http://www.stabilityjournal.org/collections/special/new-technologies-peace-development/

the interplay between the physically possible, the individually imaginable and the socially acceptable.

More specifically in this study we focus on 'information systems' as methods and techniques by which people systematically organise and manage information rather than specific ICTs (Headrick, 2000, 4). Different ICT tools can form parts of the wider information systems, in combination with the face-to-face interactions through which information is communicated, gathered, and stored. Although this evidently expands our analysis of ICTs to include numerous different functions and categories, it is a useful way of exploring the interaction of individuals and networks with a range of ICT tools in an evolving information environment, and to see how ICTs' various affordances coexist within a larger information system. Re-contextualising these considerations for peacebuilding and taking into account the existence of its complex power dynamics and differing levels of agency (Richmond, *forthcoming*), we present the remainder of this review by focusing on technology's *functionality* as well as the specific *actors* who use these technologies.

2.2. Actors and practices

Evidence of the proliferation of projects using ICTs for peacebuilding is currently being collected in the 'Build Peace Database', the only dataset of peacebuilding projects using technology.[2] At the time of writing the Database contained 147 projects implemented in 42 different countries. It highlights four functions of technology – or, adopting our own terminology outlined earlier, 'affordances' of ICTs- for peacebuilding: data, communication, networking and mobilisation. It also classifies the different types of organisations implementing the projects or supporting their implementation. Using the concept of affordances has two implications for our approach to this study: first it recognises that with ICTs, all the above affordances are simultaneously possible, but different actors might choose or have to leverage different ones in different contexts; secondly, that this leveraging is a dynamic process which is hard to predict when contextualised in practice. We focus on actors which are implementing ICTs because the intended goal of this study, which is to draw some research parameters to evaluate the role of ICTs in EU capabilities in conflict prevention and peacebuilding, requires us to identify the specific opportunities, risks and constraints faced by the EU as an international governmental organisation.

From the data currently available, there does not seem to be a great discrepancy among the various actors in the purposes of the tech-enabled projects included in the Database. However, analysis of the peacebuilding projects in the Database show that international governmental organisations seem over twice as likely to be using technology to gather, aggregate or visualise data than local NGOs. From the same data, local NGOs seem five times more likely to be using technology for communication purposes, to include more voices, share information or provide alternative narratives in the peacebuilding context. Overall, as mentioned earlier, the function of technology most featured across the Database projects is

[2] For more information see http://www.buildpeacedatabase.org/

mobilisation (engagement), present in 50% of the projects, followed by communication (40%) and networking (30%). Although this data set is limited, these preliminary findings help contextualise the practices we outline in our review.

2.2.1 EU

The EU does not expressly have a policy on the uses of ICTs for peacebuilding. Its work on ICTs and innovation as part of its 'Digital Agenda for Europe' notes that "digital technologies have enormous potential to benefit our everyday lives and tackle social challenges". One of the Agenda's pillars includes "ICT-enabled benefits for EU societies" and notes how ICT capability can deliver better public services; the UNDP, for example, is already exploring this in its governance building programmes (UNDP 2013). Although this is not explicitly linked to the EU's peacebuilding work, the recognition of ICTs' transformative potential opens up institutional avenues for their inclusion therein.

The main body responsible for peacebuilding within the EU is the European External Action Service (EEAS) through the Instruments Contributing to Stability and Peace (IcSP). in the absence of explicit EU policy on the role of ICTs for peacebuilding, the priorities of the EEAS fall into several categories which inform how we have organised our review of practice: directly through EU missions and programmes on conflict prevention, mediation and dialogue, human rights and security (civilian or military), and indirectly as a major donor supporting peacebuilding projects and programmes across the world and close partner to the United Nations. "On the ground, the implementation of IcSP action is typically devolved to EU Delegations located in the concerned third countries… Implementing partners for IcSP actions include NGOs, the UN and other international organisations, EU Member State agencies and regional and sub-regional organisations" (EU 2015). Under the IcSP, the EU Peacebuilding Partnership was established to "strengthen civilian expertise for peace-building activities".

As part of an IcSP-funded project with Peace Direct, the latter has produced a map to visualise EU activities under this instrument.[3] Of the 292 projects featured, twelve have an ICT component. These are implemented in nine different countries across four continents. Most projects focus on media in general and also radio, with only one specifically referencing ICTs- 'Monitoring elections in Burkina Faso through ICTs' – showing an example of ICTs' data function. What this map does not show, however, are other projects funded under larger umbrella grants designed to be used at the Delegations' discretion for an overall objective or under a funding stream different to IcSP. For example 'Border Lives', a project using videos shared online to tell stories of people living in the border region of Northern Ireland and the Republic of Ireland, was part of EU funding for the peace process in Northern Ireland. In Georgia, 'Elva's Peace Park', a digital game aimed to foster dialogue and communication between divided communities, was also funded as a joint EU/UNDP project under the large umbrella 'Confidence Building Early Response Mechanism' (COBERM) funding. The latter two examples show the EU supporting local organisations in leveraging ICTs' communication and networking functions. Still it seems that examples of EU practice are currently too scarce to

[3] See http://www.insightonconflict.org/icsp/

draw any further conclusions aside from the existence of an emerging practice, apparently without the inclusion of ICTs as a policy consideration.

2.2.2 Other international governmental actors

Unlike the EU, the United Nations was one of the first international organisation to publish a statement on the potential uses of ICTs for peacebuilding, noting that events related to the Arab Spring "have demonstrated the relevance and impact of Information and Communication Technologies (ICTs) on governance and conflict transformation processes" (UNDP, 2013). The United States Agency for International Development (USAID) has also integrated the strategic application of "science, technology and innovation" as one of its operational principles within its policy framework (USAID, 2011). It has developed Principles for Digital Development[4] and created a specific platform ('The Exchange') to foster innovative and tech-enabled projects in development and peacebuilding. These organisations have implemented or funded a large number of different projects that use ICTs in a variety of ways.

In terms of data, the UNDP has supported the development of early warning systems like the Uwiano Peace platform in Kenya (Musila, 2013). Uwiano used a toll-free SMS service that allowed people to report perceived threats to security. These SMS were conveyed to a national situation room where they were analysed and verified, and then responses were initiated through partnerships between local civil society groups and the police. Other examples include the 'Elva' platform in Georgia or the 'Cuidamos el Voto' project in Mexico to enable government and civic organisations to collect, process and analyse electoral processes.

Based on information systems similar to those above and through the collection of data, UNDP Sudan's 'Crisis and Recovery Mapping and Analysis' (CRMA)[5] helped to foster open dialogue among ethnic/kinship groups who had been in conflict with each other for decades, and felt alienated from the peacebuilding process. In this example technology is used to communicate and mobilise the local population to help build peace by facilitating interaction and networking between groups previously shut out of processes. Another example of these functions is their 'Mahallae', a digital platform for civic engagement which aimed to foster inter-communal dialogue and innovation across the island, which was funded by USAID and the UNDP Action for Collaboration and Trust programme. Another example of the communication function is USAID's support of the 'Panzagar' project in Myanmar aiming to counter hate speech online (mainly on Facebook) through a variety of online and offline activities.

One final area relevant for the (potential) role of ICTs in EU peacebuilding and conflict prevention is the UN's Department of Peacekeeping Operations' uses of new technologies such as Unarmed Unmanned Aerial Vehicles (UUAVs) for surveillance purposes as part of their 'force for the future'. Since they were first used in the Democratic Republic of the Congo in

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[4] See http://digitalprinciples.org/

[5] See http://www.ss.undp.org/content/south_sudan/en/home/presscenter/articles/2012/11/16/how-conflict-rsik-mapping-analysis-advances-peace-and-development-in-south-sudan.html

2006, UUAVs have been used successfully on several occasions, for example in both Sudan and Mali, resulting in a 2014 UN expert panel strongly recommending their expanded usage.[6] This is an information system that uses UUAVs to gather data, but its resemblance to similar technology used by the military poses a set of ethical and operational challenges for their implementation and potential impacts in peacekeeping contexts (Puig Larrauri & Meier, 2015).

While these examples are not exhaustive, they showcase the range of technology functions used by international governmental organisations. They also show that these are rarely leveraged discreetly. Rather, the connectivity of ICTs seems to afford peacebuilding practitioners the possibility to implement technologies in a variety of functions within a given context.

2.2.3. Local and grassroots actors

We explored earlier the fact that the EU's institutional structure is set up to support local and grassroots actors through its IcSP and EU Peacebuilding Partnership. Besides their 'local' quality, there is little information on the demographics of these actors. From the Build Peace Database we find that 35% of stakeholders involved or benefitting from tech-enabled projects are "young people" and 7% are women, but the majority (62%) are "local populations".

In terms of communication, local peacebuilders use tools for collaborative media creation and dissemination (social media, blogs, wikis, citizen journalism and participatory maps) to bring new voices to the public domain. In Israel, for example, the 'Peace Factory' runs viral campaigns on Facebook that encourage people to post messages of love and friendship across conflict barriers in the Middle East. Peacebuilders use ICTs to counter negative campaigns by mobilising collective expressions of positive messaging. Kenyan NGO Sisi Ni Amani runs the PeaceTXT programme, which aims to contact people in at-risk areas in order to propose a moment of reflection when calls to violence are spreading. In terms of networking and mobilisation, Games for Peace in Israel uses Minecraft (an online game) as a medium for Arab and Jewish Israeli teenagers to meet. Peacebuilders use social media or mobile chatrooms and dedicated networking platforms to nurture exchanges between groups that are divided by conflict lines. Soliya's Connect Programme is an online cross-cultural education programme targeting young people in the West and in 'predominantly Muslim societies'. Finally in terms of data, Human rights defenders (HRD) document violations by state actors, their proxies, and other non-state actors. HRDs mobilise information systems to gather, store, communicate, and transform information about violations. Similarly, 'HarassMap' is an SMS reporting system for women experiencing sexual harassment in Egypt. It is helping women reclaim spaces and counteract sexist messages that spread easily on social media. The systems used by HRDs are not always coherent, stable and consistent. They are often fragmented and transient, using both 'high-tech' such as satellite internet technology or mobile apps that guarantee verifiable

[6] 'Performance Peacekeeping: Final Report of the Expert Panel on Technology and Innovation in Peacekeeping.' 22 December, 2014.

media such as ‘InformaCam’, as well as 'low-tech' such as landline telephones and face-to-face interviews.

2.2.4. State actors

As a peacebuilding actor, the ‘state’ is a problematic concept. Peacebuilding contexts almost always entail contested notions of what a legitimate state entity is. This section refers to the main authoritative body in the peacebuilding context under consideration, from transitional government 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).

One example of a governmental initiative is Colombia’s government unit for the victims (Unidad para las victimas) and their use of ‘Vitmalz’, an online game to educate women about the law regarding their rights as victims of the conflict. By providing local communities with legal information, this leverages mainly the communication function of ICTs.

The security sector, which is under state responsibility, represents an important element of peacebuilding and an EU priority, through its military and civilian missions. Importantly, there is also emerging practice among police forces of using new technologies and data streams, with a long history of how technological developments have changed the way policing is delivered (Banton, 1964; Holdaway, 1983; Manning, 2008). ICT is currently being used across a range of different areas of policing. These include, but are not limited to: as a tool to reach out to the public (crime maps, use of social media etc.); as an evidence gathering and processing device (e.g. to collect new forms of evidence such as video recordings, or to collect evidence in digital rather than physical format, as well as depositories and databases that this information is fed into for sharing, retrieving and analysis); and as an operational oversight planning and management instrument (e.g. the use of digital radios for personnel coordination, automated dispatch systems to allocate police units, GPS systems to locate police units, analysis of crime patterns and police resource allocation in efforts with unclear success to establish predictive policing), such as the CopCast app piloted in South Africa and Brazil (Siqueira & Muggah, 2015). We must also not overlook the informal use of privately owned ICT devices (mainly smart phones) by officers on the ground used for any of the above purposes (Rieken, 2014).

The state also mobilises information systems, in particular data through surveillance technologies, to counter actors whom it perceives challenge its power and its legitimising narratives. HRDs learn of surveillance techniques and deploy evasive and defensive manoeuvres. In turn the state modifies its own architecture of oppression accordingly. The information systems form part of a wider environment of resistance and oppression, a hunter and prey scenario with grave consequences for human rights defenders or activists.

3. Ethical and operational challenges

In parallel to the practical developments mentioned so far, reflections and discussions are beginning to take place within the 'Build Peace' community, an emerging community of practice around the uses of technology for peacebuilding.[7] These provide insights on key questions and a variety of operational and ethical challenges related to the uses of ICTs in peacebuilding contexts in terms of both process and outcomes (Chungong, 2015). The overarching narratives within the 'Build Peace' community often focus on the empowering and inclusive potential of ICT uses (Kahl & Puig Larrauri 2013, 1). Some operational challenges have been identified however, that could limit this potential.

Some of the challenges pertain to ICT uses generally, such as the question of *access*. In conflict affected areas, access to technologies is often uneven in terms of geography, with poor infrastructure that can be limited to urban centres and demography, where women and marginalised groups in society are often perceived to have less access than younger, urban men for example (Musila, 2013; Kahl & Puig Larrauri, 2013; Mancini, 2013). This relates to the issue of *literacy* – even when physical access is possible, the knowledge and abilities to effectively use ICTs might not be, which inherently limits the empowerment potential of these new technologies. This affects the representativeness of findings based on digital data, whose voices and narratives can be heard in terms of communication, and risks perpetuating the conflict lines from the offline to the online in terms of networking and mobilisation, by reinforcing geographical and demographic access and literacy power discrepancies.

A second common operational challenge is that of *unintended consequences*. In addition to the recognition above that ICTs and other technologies can be used for or against peace (Kahl & Puig Larrauri, 2013; Brown, 2014), many have highlighted that ICTs may have simultaneous, unexpected and contradictory effects. Different studies highlight the potential of the mobile phone to serve as an aid to armed groups to overcome collective action problems, making violence more likely (Pierskalla & Hollenbach 2013), as well as the ways in which these devices may enable the population to share information with counterinsurgents, making violence less likely (Shapiro and Weidman 2011). For example, in South Sudan, a radio station broadcasting messages intended to protect the population from the Lord's Resistance Army, appears to have contributed to a rise in popularity of a local civilian militia (Rigterink & Schomerus 2015).

Two operational challenges, which largely face international actors introducing certain technologies in peacebuilding contexts, relate to issues of *appropriateness* and *sustainability* (Mancini 2013). Musila comments that "most ICT tools have been introduced into conflict early-warning mechanisms with the support of donor funding (e.g. USAID, UNDP, Oxfam GB). The drawback of this approach lies in its questionable sustainability, especially when ICTs are not maintained and fall into disrepair" (Musila, 2013).

One key question that remains unanswered thus far is the level of impact on political processes of ICT uses in peacebuilding contexts. Indeed our review seems to indicate that the

[7] For more information see http://howtobuildpeace.org/

bulk of ICT uses in peacebuilding is geared towards conflict prevention, through leveraging digital data in early warning systems, or towards rebuilding broken social ties through communication and the creation of safe spaces for contact and networking across divided communities. However Helena Puig Larrauri (2015) proposed that new technologies could also be used to reinvent Track 1 formal negotiations. This is particularly pertinent for an actor such as the EU whose peacebuilding practices run across the multi-track diplomacy spectrum.

The ethical dimensions of using ICTs in peacebuilding align with those highlighted by scholars in relation to peacebuilding interventions more generally. However, the technological dimension adds a number of specific considerations. An important ethical tension in peacebuilding technology uses is *security*. For some individuals, engaging in digital activity comes with great personal risk. This question extends to the various understandings of privacy and consent certain populations might have of digital activities (Welch et al. 2014).

Infrastructure security is also a concern in the latter cases, particularly in fragile contexts where governance (and governments) can shift rapidly between various actors (Welch et al. 2014) and as such raises the important question of *ownership* – of infrastructure, data and processes. Letouzé et al. (2013) highlight the critical tension between 'empowering' local populations by allowing them to provide their own data in early warning systems, while these systems remain owned by external implementing organisations which have greater capabilities to analyse and make use of the information gathered. A final aspect is the tension between private sector organisations and the normative purposes of peacebuilding. So far, according to the Build Peace Database, 49% of the projects use existing software, mainly existing 'social media' platforms. This raises serious ethical questions. Private companies impose severe restrictions on data sharing and proprietary algorithms. Moreover, the need for these companies to generate profit, combined with their accountability to shareholders rather than local populations, is problematic at best; exploring potential collaborations with the private sector thus requires a careful consideration of these issues.

4. Between technology and the review agenda for EU peacebuilding capabilities

The discussion so far has highlighted many connections and overlaps with other fundamental issues for the EU's civilian capabilities as represented by activity clusters such as governance, multi-track diplomacy, security sector reform, and by cross-cutting normative issues such as local ownership, inclusivity (particularly gender) and coherence.

As mentioned in some empirical examples, ICTs are being used in *governance* programmes and projects (Welch et al., 2014). The main issues here are the tension between increased efficiency and the list of operational and ethical challenges mentioned above. Indeed the potential for participation can be limited by issues of access, security and ownership, as well as the legitimacy gap that externally introduced technologies can create in governance contexts, as Welch et al. (2014) argue in their review.

Moreover, there is burgeoning evidence that peacebuilding actors have different abilities to leverage different affordances of ICTs, an important consideration for the EU's focus on *locally owned* peacebuilding capabilities. In a related point on the widened participation promise of ICTs, women and other marginalised groups' ability to use ICTs often appears limited. On the other hand platforms like HarassMap are examples of how ICTs can address some of those issues around gender and social marginalisation. These considerations are essential in light of the EU's commitment to a 'whole of society' approach to peacebuilding.

The question of any peacebuilding intervention also overlaps with concerns over coherence among actors, specifically between civilians and the military. This is perhaps even more important with regards to ICTs when the uses of ICTs for peacebuilding (e.g. surveillance and monitoring) overlap with potentially violent uses (even in efforts to maintain stability or peace), which could impact the trust capital needed to translate online networking into actions for social change. In the context of this paper's parameters, the only reported example of the use of technology to leverage military action is the previously mentioned use of UUAVs (Puig Larrauri & Meier 2015). More research is needed here to better understand this relationship and its impact on the operational and ethical dilemmas mentioned above.

5. Conclusion

In this paper we have outlined the current state of ICTs in peacebuilding scholarly knowledge, policy and practice and identified key operational and ethical tensions, as well as overlaps and connections, relevant to the review agenda for EU peacebuilding capabilities. As a result we propose a socio-technical conceptual framework of leveraged 'affordances' by various peacebuilding actors. Based on emerging empirical work, we have used four 'affordances' – or functions of technology – which are: data, communication, networking and mobilisation. This approach seems the most appropriate to gain a comprehensive understanding of the role ICTs can play for EU civilian peacebuilding from a whole-of-society perspective. Indeed, it represents a move away from technological determinism and acknowledges the importance of the wider societal context in both the uses and outcomes of ICTs. This approach also acknowledges the underlying power dynamics of peacebuilding which can enable or constrain various actors in their uses of ICTs for peacebuilding, and also offers a comparative framework to generate empirical data and evaluate practices in a rapidly evolving technological field.

This approach has allowed us to explore key questions relevant to the potential uses of ICTs by the EU in its peacebuilding activities, which have thus far received little dedicated scholarship:

- Has there been democratisation of technology uses in conflict affected areas? If so, what kind? Does using ICTs in peacebuilding processes make these processes more inclusive?
- Have ICT uses led to more empowerment – and if so, whose?
- What is the nature of the dissonance between policy ideals and programming constraints?
- Can international actors empower local or grassroots actors by leveraging ICTs and can this process be sustainably locally owned?
- How can international actors support emergent, grassroots uses of ICTs for peacebuilding?
- Can technologies that are used by military and civilian peacebuilding practitioners contribute to building peace – and if so under what conditions?
- What consequences do (1), (2) and (3) have for the EU as an actor directly engaged in multi-track diplomacy?

5.1. Implications for research methods

The adoption of a socio-technical framework also has consequences for our research methods. Firstly, and depending on the required level of analysis, it demands that we explore the various affordances of the technologies under consideration. As outlined, this implies a combination of technical and contextual insights and is best suited to an interdisciplinary approach. Secondly, grounded, observational fieldwork is hugely important to capture empirical data on the use of ICT by actors working for peace. Expertise is situated (Suchman, 1987) and distributed (Hutchins, 1995) amongst a body of professionals and their working environment, not solely contained within an individual. The aim here is to identify those context-dependent everyday practices of a community (in our case that of peacebuilders) that create social reality and render it meaningful (Garfinkel, 1991). To this end, ethnography provides a useful method because it allows the development of an intricate understanding of social practices and knowledge held by a community (Atkinson & Hammersely, 1983). The scarcity of empirical data – both qualitative and quantitative– in this field represents an obvious challenge to further research. In order to evaluate the role of ICTs in EU civilian peacebuilding, the priority areas could be co-designed with representatives of the EU in order to facilitate the generation of useful data. As we have shown in this paper, ICTs are being used in a wide variety of geo-political peacebuilding contexts for a diverse range of purposes. The EU has yet to embrace these practices in a more coherent and systematic way. However, there exists an undeniable opportunity for the EU to ground its approaches in more relevant empirical work adopting a socio-technical perspective which recognises the contingent effects of ICT uses in socio-political contexts and takes into account its many operational and ethical challenges.

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