DIGITAL DEVELOPMENT DEBATES

Crisis Management:
Understanding the Real Impact of ICTs, Social Media and Crisis Mapping
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The idea of trying to better understand the role of information and communication technologies (ICTs) in promoting and building peace emerged, at a policy level, in the context of the World Summit on the Information Society (WSIS). In preparing for the first phase of the Summit, held in Geneva in 2003, it was recognized that the scope of what was considered primarily a technical matter of communications and infrastructure needed to be enlarged to encompass content, development, socio-political goals and emergent fields such as e-health, e-education, and e-government. Information and communication technology has become a societal issue presenting both opportunities and challenges. The WSIS "Geneva Declaration of Principles and Plan of Action" consequently emphasized the central role of ICTs in many areas of economic and social development. The risk of a growing 'digital divide', where ICTs could reinforce rather than reduce inequalities was acknowledged, and recommendations were made in order to turn the digital divide into a digital opportunity for all.

However, development and prosperity can only be achieved if the global, regional and local situation is peaceful and stable. Peace is a necessary prerequisite for social and economic development. Throughout the world, many regions experiencing violent conflict are cut off from equitable, sustainable development opportunities. Also, in recent years, we have witnessed decades of excellent development work done by countries and international organisations destroyed through conflict in a matter of weeks. The return on investment in conflict prevention is immeasurably larger than the investments required to reconstruct countries and build peace post-conflict. The recent World Bank Development Report 2011: "Conflict, Security and Development" also highlighted many of these relationships[1]. Although the idea of exploring the use of ICTs in promoting peace was mentioned by a few in the lead-up to the WSIS, the topic was forgotten in the focus on development, financing, security and internet governance.

To fill that gap, the ICT4Peace project was launched at the end of 2003 with the commissioning of a study to answer the question of whether ICTs have a special role to play in promoting peace. The examples of ICT use in warfare are well-known: propaganda, intelligence, communications and ICT-enabled weapons systems. But can ICTs be used in other ways - by other actors to diffuse a situation leading to conflict, to help end a conflict, or to allow the stabilisation of a post-conflict situation? The report published by ICT4Peace with the help of senior experts, such as Paul Currion, on the practice and theory of ICT in the conflict cycle and peace-building[2] led to the approval of Section 36 of the Tunis Commitment of the World Summit on the Information Society in 2005[3]. Subsequently the ICT4Peace Foundation was established to raise awareness about the WSIS Tunis Commitment and promote its practical realization in all stages of crisis management[4].

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[1] http://wdr2011.worldbank.org/sites/default/files/pdfs/WDR2011_Full_Text.pdf

[2] Information and Communication Technology for Peace: The Role of ICT in Preventing, Responding to and Recovering from Conflict (http://old.ict4peace.org/articles/ict4peace_ebook1.pdf).

[3] "We value the potential of ICTs to promote peace and to prevent conflict which, inter alia, negatively affects achieving development goals. ICTs can be used for identifying conflict situations through early warning systems preventing conflicts, promoting their peaceful resolution, supporting humanitarian action, including protection of civilians in armed conflicts, facilitating peacekeeping missions, and assisting post conflict peace-building and reconstruction."

[4] The ICT4Peace Foundation (www.ict4peace.org) aims to enhance the performance of the international community in crisis management through the use of ICTs that facilitate effective communication between peoples, communities and stakeholders involved in crisis management, humanitarian aid and peace-building. In its work, the Foundation focuses on original research and policy development, outreach, advocacy and advisory services and training.

Today we are witnessing a tectonic shift in the use of ICT in crisis response, peace-keeping, conflict resolution and state-building. Moving from a rigid traditional top-down hierarchical approach, the humanitarian community and the military are increasingly relying on mobile, inclusive and interactive tools, building on a wealth of information gathered from locals and those outside traditional humanitarian communities. This transformative switch to a more bottom-up and waterfront approach, focusing on the individuals in crisis areas, means encouraging communities and individuals to be prepared, self-sufficient and reliant in times of crisis and conflict.

The massive earthquake that struck Haiti on January 12, 2010 shattered the foundations of the entire country. Just hours after the earthquake struck, there were signs of a global effort to leverage existing web, internet and mobile technologies, including social networking platforms, to help aid and relief work. Ushahidi (a platform first used in Kenya that allows anyone to gather distributed data via SMS, email or the web and visualize it on a map or timeline) was the first to deploy its platform to ascertain the urgent needs of victims and other relief requirements on the ground. Sahana (a Sri Lankan engineered web based collaboration tool designed to address common coordination problems amongst actors involved in relief work) was also quick to deploy its platform in Haiti. Sahana helped, for example, in plotting the location of medical infrastructure by asking volunteers around the world to help in discerning their precise coordinates from raw data. Commonly called crowdsourcing, this was a key feature of Ushahidi as well, which used an army of volunteers based in the US to sift through thousands of text messages from the ground in order to prioritize and categorize incoming information. The US-based non-profit media outfits Internews and Thomson Reuters Foundation's Emergency Information Service (EIS), developed by InSTEDD, helped humanitarian agencies communicate directly with those affected through a local network of radio stations and text messaging. The UN, through its OneResponse platform, managed by the Office for the Coordination of Humanitarian Affairs (OCHA), also served as a vital portal for important and regular situation reports, updated contact information and mapped data. Almost all relief agencies, UN agencies and military actors, including the US Southern Command, embraced Twitter, Facebook, wikis, websites and mobiles in their work, using them to coordinate, collaborate and act upon information generated by victims on the ground. The ICT4Peace Foundation's own wiki (http://bit.ly/haitiwiki), established a day after the earthquake, ultimately linked 120 sources of vital information and in some cases, rendered the critical data locked inside closed databases and proprietary formats more easily accessible[5].

Clearly, significant advances in web, internet and mobile technologies underpinned the Haitian relief effort – from the generation of funds to the coordination of humanitarian action and collaboration between aid workers. In the US alone, an unprecedented number of donations via SMS to the Red Cross for Haiti exceeded 31 million dollars. CrisisCommons, itself a volunteer-driven web-based initiative, created the most comprehensive and up-to-date maps of the country within days through a site called OpenStreetMap. Thousands of volunteers from around the world contributed to the rapid creation of these maps, using sources as diverse as situation reports, proprietary databases and satellite imagery. What ultimately came to be known as Project 4636 - a single SMS number to which Haitians could SMS their location and urgent needs - required an incredibly complex and unprecedented mobile telecommunications back-end in Haiti that was engineered and deployed in a matter of days, with multiple local and international actors including the US military. Global volunteer efforts, primarily through Ushahidi, but also through other Ning-based social networks, emails, Skype and even ham radio, disseminated and worked on vital information generated by Haitians on the ground regarding their urgent needs.

Despite this progress, a number of critical challenges remain. However innovative they are, ICTs that

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[5] This and subsequent paragraphs have been reproduced from the report "Haiti and Beyond: Getting it Right in Crisis Information Management" by Sanjana Hattotuwa and Daniel Stauffacher, April 2010, ICT4Peace Foundation, (http://ict4peace.org/publications/haiti-and-beyond-getting-it-right-in-crisis-information-management-4)

operate as islands and silos can impede relief efforts and cost lives. Early on in the Haiti relief effort for example, there were multiple web sites and systems for registering and locating missing persons set up by international media, web-based social networks and UN agencies. Until a standards-based repository was established based on the PFIF (People Finder) format, each system was an island of information, leading to unnecessary duplication, fragmentation and significant frustration. Even after Google established a standards-based repository, some international media and UN agencies refused to share information with it or use it. Based on the experience of curating the ICT4Peace Foundation's wiki on Haiti, the myriad of data sources and proprietary formats from which information was captured suggests an increase in data fragmentation and lock-in.

Haiti is seen by many as a turning point in the use of ICTs in disaster response, and rightfully so. However, vital lessons for humanitarian aid and first response clearly identified in the Asian Boxing Day tsunami response remain unheeded. Despite the increase in information from victims on the ground, disaster-affected communities remain largely passive recipients of information, having to deal with, amidst significant trauma, competing information on aid delivery and services.

Beyond the hype, the majority of those affected by the Haitian earthquake were off the radar of ICTs. Compounding this, as early as April 2010, Haiti was already receding from international media and global attention, yet significant humanitarian challenges on the ground persist. It is unclear how the ICTs first deployed in the country will be sustained over the long term, in particular international crowd-sourced platforms relying on volunteers. Beyond the UN, significant concerns were raised over the coordination and collaboration between civil and military actors and the international community as a whole.

Much more can and must be done to strengthen disaster preparedness and crisis information management. There are no more excuses for ill-preparedness or haphazard aid response. We already know much of what needs to be done and going forward requires requisite funding coupled with the political will of the UN system and international community. Some key ideas and suggestions in this regard are reiterated here, because they remain enduring concerns requiring critical engagement and meaningful reflection:

− The accelerated development and population of easily accessible datasets with essential information shared across UN and other aid agencies, to help identify, prepare for and mitigate disasters.

− The development of ICTs that work better and are more resilient in austere, traumatic environments.

− The improvement of interoperability across all systems between UN agencies and other key platforms outside, including UN OneResponse, Ushahidi, Sahana and InSTEDD's Emergency Information Service.

− Help communities develop their own capacities and capabilities for disaster early warning, prevention and resilience through the use of endogenous technologies.

− Encourage greater cooperation between governments and NGOs based on standard operating procedures governing information-sharing to help aid work.

− Ensure that global and local business are partners in crisis information management (as we have seen in Haiti, business has a key role to play in generating and sustaining financial inflows and strengthening aid).

− The development of a comprehensive crisis information management preparedness and assessment tool box, including appraisal mechanisms, especially in and for disaster prone regions and countries.

In order to realise these goals, the ICT4Peace Foundation has been actively supporting the Chief In-

formation Technology Officer of the UN Secretariat in New York and leading actors, including key UN agencies and departments in Rome, New York and Geneva, and developing the UN Secretary General's Crisis Information Management Strategy (CiMS)[6].

In summary, approaching humanitarian relief with an increasing emphasis on ICT brings with it hope for a better future, but also significant challenges. It is true that UN agencies and many humanitarian organizations increasingly use web-based social networks and ICTs as an integral part of their operations, including content from Twitter and Facebook. Stressing the need for accountability, many organizations suggest that new tools and mobiles have significantly improved the ability of victims to help themselves and each other after a disaster.

Nevertheless, the challenges remain formidable. How can the humanitarian community and other actors physically assess the mountains of data that come in? There is very little time in crisis situations and even less time for reading thousands of emails and text messages. What steps do the humanitarian community need to take in order to manage this process? How can the accuracy of the information coming into a given platform be validated, in particular in conflict situations where misinformation is often used as a weapon? How can individuals in conflict situations who provide valuable information be protected?

What responsibility do technology platform providers have? What happens when collected information cannot be acted on? How can the links between the information gathering and implementation be improved? How can responders ensure that new systems uphold the "do no harm" principle of the humanitarian community? What criteria exist, or should exist, for ICT providers (including crisis mappers and social media) to determine which crises they should address or "map"?

Who actually owns and has access to ICTs that could be of use post-disaster as well as for disaster preparedness?

The question of accountability and the responsibility to asses new ICT tools and platforms from the perspective of the disaster-affected community is still a very important issue. This requires humility and the eschewing of what is a tendency amongst actors in relief work to take credit when things go right, and disavow responsibility when expectations are either not met, go unheeded, or, in some cases, even threaten lives.

Does mapping increase risk? Some contest the assumption that more information in the public domain is good, arguing that "less can be more" in some instances. What is often missing is the community's involvement in determining the nature of and the extent to which, information that concerns them is gathered, used and disseminated. There is a concern that new media could be playing a parasitical role in some instances - taking information from victims with no discernible improvement to aid flows and relief work overall.

Real time or post-facto analytical tools are embryonic at best. Without analysis of correlation and causality, it is impossible to measure if and exactly how ICTs and social media impact crisis management. For such an assessment, reliable baseline data are needed – which are not available most of the time.

It is gratifying to observe that senior management in governments, the UN and in humanitarian organizations is picking up the ball with regards to new ICTs and social media. Ironically, in 2008 the ICT4Peace Foundation was struggling to raise awareness of the role of new media. Now its greatest

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[6] http://ict4peace.org/updates/report-of-the-un-secretary-general-underscores-crisis-information-management-strategy

challenge is to hold agencies to a more robust understanding and reflection of its use, applications, potential for abuse and limitations.

This article raises many important issues relating to the real impact of ICTs, social media and crisis mapping in crisis response, conflict resolution and peace-building. These issues require rigorous analysis and further study from all stakeholders, including the academic community, in order to ensure that we do not stray from humanitarian principles and goals due to information overload and hype about new technologies. At the end of the day, the question remains: Will we be able to use improved ICT so that it significantly improves the situation for victims of crises? Do increased ICT capabilities and their uses really constitute progress and help reduce the loss of life?