

Information and Communication Technology for Peace

The Role of ICT in Preventing, Responding to and Recovering from Conflict

Preface by
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Foreword by
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United Nations



United Nations
**Information
and
Communication
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Published by
The United Nations Information and Communication Technologies Task Force
One United Nations Plaza
New York, NY 10017
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ACKNOWLEDGEMENTS

The ICT4Peace project is indebted to many individuals and institutions. We would like to express our gratitude to former Finnish President Martti Ahtisaari, Kristiina Rinkineva, and the Crisis Management Initiative, Ambassadors Thomas Greminger, Yrjö Länsipuro, Peter Maurer and Teddy Winkler, Christian Catrina, Maurice Strong, Michael Moller, Georg Stein, Claude Bruderlein, Mathias Stiefel and Bodgan Lungulescu and WSPInternational, Heinz Kruppenacher, Anja Ebnöther, Chris Pallaris, Juan Rada, Andreas Wenger, Alain Modoux, Linton Wells, Brian Fila, Markus Reisle, Tim Kelly, Rene Francis, Joutiar Saleh, Jean-Pierre Gontard, the Geneva Center for Humanitarian Dialogue, Denis and Bernard Barut of Startforyou, Johann Terretaz of Twice2 for designing the logo, and to the International Telecommunications Union and the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) for the kind permission to reprint the *Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations* and OCHA and Reliefweb for the kind permission to reprint the OCHA 2002 Symposium *Final Statement on Best Practices in Humanitarian Information Management and Exchange* as annexes. We would like to express our sincere appreciation to all those who made this publication possible, the staff of the United Nations Task Force Secretariat, located in the Department of Economic and Social Affairs of the United Nations, who devoted many hours to proofreading the text, especially Enrica Murrura, and her collaborators Edoardo Zucchelli and Cheryl Stafford, and the Graphic Design Unit of the United Nations Department of Public Information. Our recognition also goes to Sarbuland Khan and Sergei Kambalov for opening the United Nations ICT Task Force Series to our endeavour. The ICT4Peace project also wished to thank our sponsors: first and foremost the Swiss Federal Department of Foreign Affairs and the Swiss Federal Department of Defense, Civil Protection and Sport, and also WiseKey, the OISTE foundation, the Corymbo Foundation, and l'Agence Intergouvernementale de la Francophonie.

This report is a preliminary overview: despite our efforts, we are sure that we have overlooked important initiatives. The online version of this report, which can be found at <http://www.ict4peace.org/> will be kept “alive” and updated. To assist us in this process, please email info@ict4peace.org with your comments, feedback and information about ICT4Peace activities.

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PREFACE

Kofi A. Annan

Secretary-General, United Nations

We are all becoming more familiar with the extraordinary power of information and communication technologies. From trade to telemedicine, from education to environmental protection, ICTs give us potential to improve standards of living throughout the world. Our challenge is to harness that potential for the benefit of all people.

Less well known than the role of ICTs in efforts to achieve the Millennium Development Goals is the contributions they make in our work to promote peace and help the victims of humanitarian emergencies.

As the underpinning for early warning systems, ICTs are crucial in weather-forecasting and in building resilient communities better able to respond to humanitarian emergencies. When disaster does strike, ICTs are helping us to better coordinate complex relief missions. This role has taken on even greater significance in the past year, following the Indian Ocean tsunami, hurricane-related flooding in Central America and a devastating earthquake in Pakistan.

ICTs are also critical tools in peacekeeping operations, including in logistics. Moreover, ICTs can help address the root causes of violent conflict. By promoting access to knowledge, they can promote mutual understanding, an essential factor in conflict prevention and post-conflict reconciliation. ICTs also offers ways to reveal human rights abuses, promote transparent governance, and give people living under repressive regimes access to uncensored information and an outlet to air their grievances and appeal for help.

The technology by itself is no panacea or magic formula. Political will is required to respond to information, to share it widely and equitably, and to ensure global dissemination of ICTs. In that context, I strongly welcome the initiative taken by the Government of Switzerland to study the role of science and technology in advancing our work for peace. This report showcases many instances of actors coming together to use technology to prevent, stop and remedy man-made disasters. It also offers valuable policy recommendations covering such key issues as trust, security, inter-agency coordination, best practices and common standards. I commend the information and analysis contained here to a wide global audience.

FOREWORD

Micheline Calmy-Rey
Federal Councillor
Swiss Federal Department of Foreign Affairs

In many countries today, armed forces, militia units and rebel groups are fighting for power, terrain and natural resources. They rob, rape, torture and kill, and people are being driven from their homes. Over the past ten years, some two million children have been killed and approximately six million have been injured. Millions never recover from the psychological damage they suffer. We must not tolerate their suffering. As fellow human beings, we have a clear duty to help them.

Swiss foreign policy is active in many areas to promote human security. The promotion of human rights worldwide and the protection of the civilian population in armed conflicts, the fight against anti-personnel landmines, as well as the promotion of peace through conflict management and transformation: these are all part of my department's work.

In past years, Information and Communication Technologies (ICTs) have helped to improve the well being of individuals and communities at risk. They have given a new meaning to human rights, in particular the freedom of expression and information. They have allowed the creation of better communication and coordination mechanisms, the establishment of early warning systems as well as the development of other tools in the service of the humanitarian, human rights and peace communities.

While every technology can be used for good or evil, and no technology is a magic remedy for human problems, understanding the potential and proper use of technologies can allow us to work more effectively and in ways that would not otherwise be possible. I am firmly convinced that ICTs in the service of peace and human rights, as well as social and economic development, deserve to be pursued further. In this context, my department as well as the Federal Department of Defence, Civil Protection and Sports supported the research which resulted in this report. It is a significant and welcome contribution to understanding how ICTs can be used to prevent, respond to, and recover from conflict.

INTRODUCTION

Ambassador Daniel Stauffacher

Former Delegate of the Swiss Federal Council for the World Summit on the Information Society

The idea of trying to understand the role of information and communication technologies (ICTs) in promoting and building peace came out of my involvement with the World Summit on the Information Society (WSIS). As a chief representative of Switzerland, the host country of the first phase of the Summit, which was held in 2003 in Geneva, I saw the scope of what was considered a mostly technical matter of communications and infrastructure be enlarged to encompass content and goals, in emergent fields such as e-health, e-education, and e-government. Information and communication technology has become a societal issue with opportunities and challenges.

As the outcome of the WSIS Phase 1, the Geneva Declaration of Principles and Plan of Action were adopted. These documents emphasize the central role of ICTs in many areas of 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 local situation is peaceful and stable. Peace is a necessary prerequisite to social and economic development. Throughout the world, many regions experiencing conflicts are cut off from development opportunities. Also, in recent years, we have witnessed decades-worth of excellent development work by countries and international organisations destroyed by conflict in a matter of weeks. The return on investing in conflict prevention, or in building lasting peace is indefinitely larger than the investments that are required to reconstruct countries and build peace after conflict.

Although the idea of considering the use of ICTs in promoting peace was mentioned by some in the lead-up to WSIS 1, in particular by Maurice Strong, Senior Advisor to United Nations Secretary General Kofi Annan, and by La Francophonie in their 2003 Rabat Declaration Contribution to the WSIS, the topic was forgotten in the focus on development, financing, security, and internet governance.

This report aims to answer the following question: do ICTs have a special role 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, help end a conflict, or allow the stabilisation of a post-conflict situation? These were the questions to be answered, at least partially, before the second phase of the Summit. In May 2004, humanitarian consultant Paul Currión and myself developed the framework for the ICT4Peace project, drawing on his experience for guidance. With the support of the Swiss Federal Department of Foreign Affairs and Department of Defense, Civil Protection and Sport, and the interest of the former Finnish President Martti Ahtisaari and Maurice Strong, I initiated the ICT4Peace project in 2004.

At first, we held consultation meetings with actors in the field, usually as sub-meetings of larger existing conferences. These were as part of the 6th International Security Forum in Montreux in October 2004, at the IT for Crisis Management Conference in Nice in December 2004, at the WSIS PrepCom2 in Geneva, and with the Geneva Centre for Humanitarian Dialogue in early 2005. Moreover, a valuable workshop with field practitioners was jointly organized with WSP International in Geneva in December 2004. Out of these meetings and consultations emerged the sense that there is interest in ICT4Peace, it is a topic in need of analysis and research from both a practitioner and an academic perspective. It also became apparent that the many disparate actors (international agencies, NGOs, governments, military, business, media) would benefit from a topic survey from a neutral standpoint. The ICT4Peace project commissioned this research report, at the same time as we started a networking effort aimed at practitioners and interested parties, through the website ICT4Peace.org.

Finland's former President Ahtisaari encouraged me to pursue out the ICT4Peace project. His organisation, the Crisis Management Initiative, has conducted research and consultations on ICT4Peace issues. Swiss Ambassadors Peter Maurer and Thomas Greminger, and the director of the Program on Humanitarian Policy and Conflict Research at Harvard University, Claude Bruderlein, were also very supportive of the project. Dr. William Drake was the lead researcher. Paul Currión, a knowledgeable and resourceful consultant, advised the project from the beginning, ran outreach and the website, and also contributed considerably to the research and writing the report. Kristiina Rinkineva, CMI's Director for Conflict Prevention and Crisis Response, was also a consultant and imparted insightful and practical advice. Dr. Julia Steinberger joined the team as my assistant in May, and has contributed to the various parts of the project as well. I also wish to thank Georg Stein from the Political Division IV of the Swiss Federal Department of Foreign Affairs for his perspicacity and involvement. To these and to others who offered encouragement and interest along the way, I give my

sincere gratitude. I sincerely hope that this effort can lead to more thoughtful and holistic consideration of ICT use and impact before, during, and after violent conflict, and perhaps to ways of better understanding among people, a true hope for peace.

I. BACKGROUND

1. Peace Issues in the First Phase of the WSIS

In September 2000, the General Assembly of the United Nations adopted the UN Millennium Declaration as a reaffirmation of their faith in the United Nations Organization and the United Nations Charter as foundations for “a more peaceful, prosperous and just world.” The Millennium Declaration emphasized the need for “a fully coordinated approach to the problems of peace and development”, while the eight Millennium Development Goals (MDGs) agreed at the same time formed a blueprint to meet the needs of the worlds poorest.

Three years later, the First Phase of the World Summit on the Information Society (WSIS) issued the Geneva Declaration of Principles and a Plan of Action that emphasized the potential of ICTs to help achieve the MDGs. The text of the Millennium Declaration distinguished clearly between “peace, security and disarmament” (section II) and “development and poverty eradication” (section III) – yet, while the concept of ICT for Development (ICT4D) has become commonly accepted, the relationship between ICTs and peace remained undefined. The WSIS Plan of Action called on nations to “[take steps to promote respect for peace,”¹ although without giving any indication on how the information society, or more specifically ICTs, might play a role in promoting peace.

The WSIS Declaration of Principles went slightly further, stating that particular attention should be paid to a number of special needs and explaining that:

“Our challenge is to harness the potential of information and communication technology to promote...the attainment of a more peaceful, just and prosperous world...We continue to pay special attention to...countries recovering from conflict and countries and regions with special needs as well as to conditions that pose severe threats to development, such as natural disasters.... We support the activities of the United Nations to prevent the potential use of ICTs for purposes that are inconsistent with the objectives of maintaining international stability and security ...The Information Society should respect peace...”²

¹ World Summit on the Information Society, *Plan of Action*, 2003, p. 11.

² World Summit on the Information Society, *Declaration of Principles*, 2003, pp. 3, 5,

At the same time, a Declaration to the Geneva Summit that was unanimously adopted by hundreds of Civil Society organizations included an entire section on the use of information and ICT in armed conflicts that was more detailed:

“We recognise that the use of media can be both positive and negative in conflict situations, including post-conflict peace building. We therefore insist that the rights of journalists and of all people to gather and communicate information, using any media, be especially respected during conflicts. These rights should be inviolate at all times but are crucial during war, violent conflict, and non-violent protest. We are particularly concerned about the deployment of "information warfare" technologies and techniques, including the purposeful jamming, blocking, or destruction of civilian communication systems during conflict situations; the use of 'embedded' journalists coupled with the targeting of non-embedded journalists; the use of media and communication systems to promote hatred and genocide; by military, police, or other security forces, be they governmental, privately owned, or non-state actors, during conflict situations both international and domestic. Information intervention in conflict situations should be bound by international law, and the WSIS should encourage work on a future convention against information warfare to address these concerns. At the same time, the WSIS should not only limit information warfare and the control of media in conflict situations, but also actively promote media and communications for peace. To that end, we encourage governments to decrease public subsidy for military communications technology, and instead spend money directly on developing peaceful communications tools and applications.”³

All of these references show that the concern at WSIS Phase 1 was “to prevent the potential use of ICTs for purposes that are inconsistent with the objectives of maintaining international stability and security.” No reference is made to the positive role that ICTs might play in promoting peace, and no detailed discussion was held as to how specific technologies could support this aim.

This lack of discussion of the potential positive role of ICTs in promoting peace is somewhat understandable. A large part of the development focus of

and 8.

³ *Shaping Information Societies for Human Needs: Civil Society Declaration to the World Summit on the Information Society*, 8 December 2003 [www.itu.int/wsis/docs/geneva/civil-society-declaration.pdf], p.8.

the WSIS was on building ICT infrastructure and reaching those currently without ICT access. Areas suffering from conflict are seen as out of reach by traditional development actors.

The Organisation Internationale de la Francophonie, in the 2003 Rabat Declaration, a preliminary contribution to the WSIS first phase, described the potential of ICTs in promoting peace:

“We consider that appropriate use of information and communication technologies should contribute to better management of crisis and conflict. It should also strengthen means of monitoring and prevention in order to consolidate peace. Moreover, it should be a vector and catalyser of national reconciliation and reunification.”⁴

Indeed, issues of peace and conflict are intimately connected to the entire WSIS endeavour and, as such, should be examined more closely. The digital divide is often nowhere greater than in countries affected by conflict, and peace-related issues – or, more accurately, conflict-related issues – have a negative impact on the capacity of those countries and communities to achieve the MDGs. The threat, occurrence and consequences of armed conflict all undermine progress towards the MDGs, and as such should be dealt with as an important and separate cross-cutting sector.

2. The Challenge to Peace in the Twenty-first Century

Globally the number of armed conflicts has increased massively since the end of the Cold War – particularly low-intensity conflicts within states. In 2003 there were 19 major armed conflicts in 18 locations worldwide⁵; however, to get a clearer picture of the cost of conflict, a wider view must be taken. From 1989 to 2000, there were more than 100 intrastate (but only seven interstate) armed conflicts around the world. They primarily occurred in developing and transitional countries, with up to 90% of victims being civilians.⁶ As well as the loss of life, such conflicts are accompanied by the destruction of economic

⁴Organisation Internationale de la Francophonie *Contribution of the International Organisation of Francophonie to the World Summit on the Information Society (Rabat Declaration)* (Agence Intergouvernementale de la Francophonie, 2003) [http://smsi.francophonie.org/IMG/pdf/declaration_rabat_ang.pdf]

⁵SIPRI Yearbook 2004: Armaments, Disarmament and International Security (Oxford: Oxford University Press, 2004) [<http://editors.sipri.se/pubs/yb04/aboutyb.html>]

⁶Figures cited in Andreas Wenger and Daniel Möckli, *Conflict Prevention: The Untapped Potential of the Business Sector* (Boulder, CO and London: Lynne Rienner Publishers, 2003).

capacity and public infrastructure, undermining of public, private and civil society organizations, and subsequent difficulty in attracting new domestic and foreign investment. All of these substantially set back the national development trajectories of the countries affected.

Preventing armed conflict makes sense in both human and financial terms but – assuming that such conflicts will continue to arise – managing those conflicts and their consequences more effectively is also of prime importance. The rise in the number of conflicts has been matched by a rise in the number of international missions, and particularly in peace building and reconstruction operations managed by the United Nations. The increase in the number of missions has also been matched by an increase in the complexity of those operations.⁷ The size and mandate of some UN missions such as Kosovo or East Timor would have been inconceivable ten years ago.

These missions cost billions of dollars in humanitarian relief, disaster assistance and the tools necessary to promote stability and reconstruction - unfortunately the resources necessary to support them have not always been forthcoming. There have been increasing calls for the reform of the UN, as well as questions about the capacity of other intergovernmental organizations to engage in large-scale reconstruction operations.

At the same time, the rapid growth in the size and scope of civil society⁸ has seen responsibility for implementation increasingly shift toward non-governmental actors – both public and private sector – and increasing pressure on governments and international organizations to become more effective and accountable. New technology – especially the internet – has been an important factor in increasing the coverage and influence of these NGOs and other civil society organizations.⁹

Although the international community has struggled to respond to these developments, it is generally agreed that existing mechanisms are not

⁷ Espen Barth Eide, Anja Therese Kaspersen, Randolph Kent and Karin von Hippel *Report on Integrated Missions: Practical Perspectives and Recommendations* (OCHA, May 2005) pp. 10-12.

⁸ According to the Union of International Associations, there are now more than 20,000 internationally-oriented NGOs. *Yearbook of International Organisations: Statistics, Visualizations and Patterns, Volume 5* (Brussels: UIA, 2005/2006) [<http://www.uia.org/organizations/home.php>].

⁹ Craig Warkentin, *Reshaping World Politics: NGOs, the Internet, and Global Civil Society* (Lanham: Rowman and Littlefield Publishers, 2001); and, Steven Hick, Edward F. Halpin and Eric Hoskins, *Human Rights and the Internet* (New York: St. Martin's Press, 2000).

adequate. The result has been an increasing need for effective management of conflict, and for those organizations involved in such activities to work more effectively. New technologies offer new ways for such organizations to work, improving the speed of communication, opening new channels for dialogue, enabling swifter mobilization of resources, enabling organizations and individuals to share knowledge more easily, and a range of other benefits.

Awareness of the importance of ICTs in complex emergencies is growing, as evidenced by the International Federation of Red Cross and Red Crescent Societies' World Disasters Report 2005 entitled "Focus on information in disasters", which includes illuminating and detailed examples of the role of ICT before, during and after disasters: "Information and Communication Technology must be recognized as a form of aid in itself."¹⁰

3. Defining ICT For Peace in the Second Phase of WSIS

The concept of ICT for Development (ICT4D) is now widely accepted; it includes all the diverse issues, actors, and activities involved in the promotion of ICT-enabled development. However this concept does not generally take into account the impact that conflict has on development, with the result (as we saw above) that the issue of conflict was given little attention during WSIS Phase 1.

As a result, and in contrast with ICT4D, there is no coherent approach to conflict-related issues. This situation is unfortunate because, in the absence of a community that can be recognized both by those inside it and those outside, it is difficult to raise awareness of, build support for, and take forward these critical activities. The absence of a community means that there is little policy dialogue, shared knowledge or good practices – in short, an absence of a community of actors. Despite this, ICT is utilized by a wide range of organizations involved in these activities, and these organizations face many common issues.

In addition, the use of ICT to promote conflict has received far more attention than ICT used to promote peace. As noted above, the Civil Society Declaration to the Geneva Summit recognized that ICT can be used as a propaganda tool with the aim of controlling civilian populations – the example of Radio-Télévision Libre des Mille Collines in promoting the genocide in Rwanda is one of the best-known examples of this. The

¹⁰ International Federation of Red Cross and Red Crescent Societies *World Disasters Report 2005 – Focus on Information* (Eurospan, London 2005) p. 33
[<http://www.ifrc.org/publicat/wdr2005/>]

manipulation of the media is well-documented¹¹ and has been a cause of increasing concern to many involved in the media, although a counterbalancing force has emerged through the internet. The internet has to some extent enabled the democratization of information, allowing individuals to share their own information through tools such as blogs (online web journals), discuss issues in open or closed forums such as bulletin boards, and in some cases to develop alternative, 'independent' news platforms¹². However, access to these tools are not guaranteed; many governments can and do prevent their citizens from free access to information regarded as potentially damaging to society.

More than just controlling public information, however, a great deal has been written about the use of ICT in modern warfare at every level, from the use of smart weapons by the modern military, to the adoption of satellite communications by rebel groups in remote areas, to the ease of obtaining recipes for explosives on the internet, to the use of mobile phones as a means of triggering bombs. Militaries rely on communications technology to coordinate their forces, and on computers to control advanced weapons systems; ICT is essential for all aspects of modern warfare

To balance this, communication is also essential for ending conflict and building lasting peace, and ICT has a key role to play in improving communication, facilitating negotiations, increasing transparency, and building trust. The consequences of conflict must also be dealt with, and ICT plays an increasingly important role in humanitarian response, peace operations and reconstruction processes. ICT is often one of the most crucial tools used by those carrying out vital work. In the WSIS context, ICT used in this way merits more consideration by the international community.

This report therefore proposes that this is a clearly identifiable area of activity that can be labeled ICT for Peace, or ICT4Peace. ICT4Peace activities are very broadly defined at present, and rightfully so; it is up to the actors themselves to further develop the definitions involved. For the purposes of this report, ICT4Peace encompasses the varying types of activity that are carried out in relation to armed conflict, including conflict prevention and management, peace operations, humanitarian relief and disaster assistance, and post-conflict peace building and reconstruction.

¹¹ Philip Knightley *The First Casualty: The War Correspondent as Hero, Propagandist, and Myth-maker from the Crimea to the Gulf War II* (Andre Deutsch Ltd 2003).

¹² Such as www.indymedia.org.

4. The ICT4Peace Project

a. *Objectives and Process*

To ensure that the issue of ICT4Peace received more attention in Phase 2, Switzerland (the host country of Phase 1), in consultation with Tunisia (the host country of Phase 2) and the Chairman of WSIS PrepCom, proposed a project that would bring together key actors in this community.

Supported by the Government of Switzerland, the ICT4Peace project is led by Ambassador Daniel Stauffacher, former Delegate of the Swiss Federal Council for the World Summit on the Information Society. This support reflects Switzerland's long-standing commitment to conflict prevention and management, humanitarian relief, and post-conflict peace building activities, both individually and in collaboration with governments, international organizations, nongovernmental organizations (NGOs), and research institutions.¹³

The project aims to highlight the use of ICTs to promote peace (as defined broadly above), with the objectives of identifying a clear framework and elaborating good practice for developing and implementing ICT4Peace initiatives. The project targeted projects that use ICT to support the activities described above, looking at both the political and technical aspects of this type of work.

The project is based on the conviction that the best way to develop such a good practice approach is to build on the experience of those actors already working on these issues in the sector. In order to do this, the first activities of the project were a series of consultation meetings with these stakeholders, in order to identify the key issues they faced and to begin the process of articulating the lessons that have been learned.

These meetings then formed the basis for networking on the part of the project, starting the formation of a community of actors around these issues. As well as the face-to-face meetings, a website for ICT4Peace (<http://www.ict4peace.org/>) was established and participants were encouraged to register their projects online. As support builds for the project, this website

¹³ On the Swiss approach to these issues, see the Swiss Federal Department of Foreign Affairs *Bill to Parliament concerning a credit facility for measures relating to conflict transformation and the promotion of human rights (2004–2007)* (Bern, EDA, April 2004) [<http://www.eda.admin.ch/eda/e/home/foreign/humsec.html>]

will become a valuable community resource, and should act as a record of the progress of the ICT4Peace community as a whole.

b. The ICT4Peace Report

This report is the result of the processes described in the previous section, and has been prepared for release at the WSIS in Tunis, 16-18 November 2005. The aim of the report is to raise awareness of the topic, to profile a range of the ongoing activities, to identify the key issues and to make recommendations for next steps. The Tunis Summit is a promising venue in which to call attention to the issues and initiatives involved, and to suggest that ICT4Peace should be mainstreamed into broader discussions regarding the information society. In turn, the WSIS could contribute to the development of ICT4Peace as recognized and critically important area of activity that merits analysis, support and continuing development.

With these considerations in mind, this report proposes that the use of ICT in conflict prevention and management, humanitarian relief, and post-conflict peace building and reconstruction constitute a coherent area of activity that we call ICT for Peace (ICT4Peace). The report provides an overview of selected ICT4Peace issues and initiatives, describing some of the leading organizations and programs in the sector; it then offers some recommendations for moving forward. The intention is not to exhaustively catalogue work in ICT4Peace, but to illustrate who is doing what, and to explore what might happen next to promote this important area of work.

II. ICT4PEACE IN ACTION: SELECTED EXAMPLES

Due to its relatively recent development, there does not yet exist a clear analytical framework for ICT4Peace. One framework is that of the conflict cycle, with the key question being, how is ICT used before, during and immediately after a conflict? These “phases” of a conflict have historically been seen as a chronological sequence, in a similar way as post-conflict transitions were seen as a progression from (immediate) relief to (short-term) rehabilitation to (long-term) development. More recently, however, commentators have called for a more integrated approach¹⁴, acknowledging that conflicts do not follow a linear path.

Conflict stages are best understood not as a continuum – a linear development – but as a “continuum,” where multiple stages in a given process may occur simultaneously. As an example, if post-conflict peace processes begin to break down, it may prefigure the re-emergence of the conflict itself; the response will have to take into account both the ongoing peace process and the emergent conflict patterns. Many uses of ICT are relevant at multiple stages of a conflict, and so the framework of the conflict cycle might not be the most suitable.

Another potential analytic framework could be based on the technology itself: the hardware, software and standards that underpin information systems. This framework also poses problems, however, since most ICT4Peace activities are not based on particular technologies, but draw on whatever is available, appropriate or even just familiar. Alternatively, in keeping with communications theory, one could analyze ICT4Peace activities through focusing on the communities of broadcasters (governmental, international, non-governmental or private actors) and audiences, as well as the kind of information transmitted.

This report approaches ICT4Peace by categorizing existing activities by their intended use. By doing this, we hope to avoid the risk of becoming entangled in discussions about frameworks, rather than the actual functions of ICT4Peace. The review is therefore divided between activities drawn from the conflict cycle (early warning, reconstruction), technology (the web, implementation of standards, and application development), field responses (operations and support) and communications (networking and learning) –

¹⁴ Jeroen de Zeeuw *Building Peace in War-Torn Societies: From Concept to Strategy* (Netherlands Institute of International Relations ‘Clingendael’ Conflict Research Unit, 2001), p. 12, and references therein

bearing in mind that some activities may fit into more than one section. We hope that this offers the most comprehensive approach to the many issues around ICT4Peace – but we also hope that the report may form the basis for further development of a more rigorous framework.

1. The Impact of the Internet

Two “revolutions” allowed the creation of an information space that is global in scope. First, a communications revolution made possible mass media that could reach around the world; now, the information revolution, based around the internet, has provided a medium (or rather, a range of media) through which a limitless number of individuals and organizations can have direct access to a global audience, subject to social and economic constraints.

Unsurprisingly, many international organizations responding to conflict – and a growing number of national organizations operating at the local level within conflict zones – have established their own websites. Organizational use of public websites has had two major impacts on our capacity to collectively follow and understand developments in countries or regions of concern: it has allowed vastly more effective information dissemination outside the organizations, and has enhanced capacity for networking and learning within or between organizations.

a. Information Dissemination

The first impact has been to vastly increase the amount of accessible information about these developments, and hence increase the visibility of potential and actual conflicts. Until recently, conflict – particularly in remote locations – could go unreported for some time and, when information did get out to the wider world, it was in the form of scattered press reports, which would neither fully inform the public nor serve as the basis for public pressure for the international community to respond.

The advent of global news networks made the arrival of such news faster and more comprehensive, but is still defined by resource constraints, the appeal of the story, and on the biases of news editors and whether they feel a story merits prominent position and ongoing coverage relative to other events. New York Times columnist Nicholas Kristof pointed out in June 2005 that the American news networks collectively aired 55 times as many stories about Michael Jackson as they did about Darfur¹⁵. While the “CNN effect” may

¹⁵ Nicholas D. Kristof *All Ears for Tom Cruise, All Eyes on Brad Pitt* (New York Times, July 26 2005)

increase pressure on the international community to respond to a crisis, it also promotes on a very transitory approach to such crises; once the crisis ceases to be news, it ceases to require a response – the phrase “forgotten emergencies” is commonly used by NGOs such as MSF and Oxfam.

The internet can also be used to rapidly disseminate false or inflammatory information, offer a global platform for causes that would otherwise not receive so much attention (whether legitimate or not) and act as a recruiting office for extremist groups. The interactivity of the internet sometimes allows a response to rumors. However, in a crisis situation, who can be seen by the different factions as a neutral, trusted party, to counter, verify or contextualize a possibly explosive piece of information? The internet itself is neutral and offers no assistance in guaranteeing the accuracy of any given message, or in identifying the intent of those using it. For those who know how to use it, however, the internet offers ways of raising the profile of forgotten emergencies, countering the misuse of the internet for promoting conflict, and many other activities besides.

This is precisely because the web gives a potentially limitless number of individuals and organizations the ability to broadcast news without being filtered through the commercial and financial limitations of news networks. In addition, the information provided is not as transitory as the mass media; a website remains online for as long as the site administrator wants, can be shifted or mirrored on other sites, links to related information on other websites, and helps to build collective knowledge that becomes more detailed and accurate over time.

As the humanitarian and peace operations community has expanded – both in terms of size and complexity – organizations have used the web to reach a potential audience of millions with whom to have this dialogue, both to inform – through discussing the issues on which they work and reporting on their own activities – and to solicit support – both in terms publicity and financial contributions. In the case of the latter requirement, in the last two years there has been a marked shift in patterns of fundraising; in the UK, the Disasters Emergency Committee (or DEC, a consortium of the major UK and Irish NGOs) has raised more money through contributions via the net than through traditional telephone-based contributions.

The extent to which these twin objectives of sharing information and soliciting support are achieved varies, but for organizations seeking a public mandate, the web has proven invaluable. Most of these organizations, however, employ a fairly standard approach to their websites. They principally use their sites to describe themselves and their activities, to convey

basic information about developments in the places where they work and to appeal for support. These are important functions, but they do not make full use of the web's potential; for example, while they offer substantial amounts of information, it is often not presented in a manner that is easy to search or store.

In this context, while it is interesting to note the massive increase in the number of web sites operating in this sector, it is more important to note those organizations and projects that are making innovative use of the web in their work. For all the changes already wrought by the arrival of the web, we are only at the beginning of an upward curve. Increases in computing power and expansion of broadband access will make it increasingly easy to more rapidly disseminate a richer array of information, e.g. live audio and video, multimedia and mapping images, and so on. In such circumstances, the problem of information overload becomes more pressing; the new frontier is a crowded place, and the difficulty for the web user is how to identify useful information and filter out the rest.

Websites offering this type of filtering are referred to as portals, and in the fragmented ICT4Peace community, they can make significant contributions to development of a culture of information sharing and development of an ICT4Peace community. Here the term 'portal' implies that the information is not created by the organization itself, but that the website collates information from other sources in order to act as a filter for the vast amount of information available on the web.¹⁶

ReliefWeb [<http://www.reliefweb.int/>], a service of the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) [<http://ochaonline.un.org/>]¹⁷, is the hub for humanitarian information,

¹⁶ It is worth noting that some organisations present their website as portals as well as sources of their own information resources.

¹⁷ In the UN system, OCHA plays a leading role in ensuring system-wide coordination. In 1991 the General Assembly established the position of Emergency Relief Coordinator (ERC) to oversee both complex emergencies and natural disasters, chairing the newly-created Inter-Agency Standing Committee (IASC). Soon after, the Secretary-General established the Department of Humanitarian Affairs (DHA) and assigned the ERC the status of Under-Secretary-General (USG) for Humanitarian Affairs. In 1998 DHA was reorganized into OCHA, and its mandate was expanded to include the coordination of humanitarian response, policy development and humanitarian advocacy. OCHA carries out its coordination functions primarily through the IASC, which is tasked with ensuring inter-agency decision-making in response to complex emergencies. These responses include needs assessments, consolidated appeals, field coordination arrangements and the development of

receiving approximately 1 million hits a day in 2004 – and 3 million hits a day following the South Asia Tsunami. Over 70,000 people subscribe to its e-mail services, the site offers a "web feed" service to deliver customized content to partners' web sites, and users can create password-protected profiles to manage material of particular interest to them. ReliefWeb has offices in three time zones to ensure that its news items are updated around the clock, and posts some 150 maps and documents daily from over 2,000 sources. These are then categorized and kept in a searchable database containing nearly 300,000 items dating back to 1981. In addition to these and other resources pertaining to countries and crises, the site includes a guide to humanitarian web sites, a search engine, direct links to news sites, and professional tools. The latter include directories of employment and training opportunities, thematic listings of "communities of practice" in different areas of specialization, and a contact directory of humanitarian organizations.

OCHA also manages the *Integrated Regional Information Network (IRIN)* [<http://www.irinnews.org/>], an independent news service reporting on humanitarian crises. IRIN produces updates, analysis and alerts on developments in 46 countries in Africa and eight in Central Asia. The information is drawn from (and provided to) a network of UN agencies, NGOs and international organizations, national authorities, donors, human rights organizations, political parties, regional institutions, churches, academia, businesses and the media. In addition to producing its own daily, weekly and special reports, IRIN distributes publications from its partners. Some 100,000 people worldwide read IRIN reports daily via e-mail with customizable preferences, and IRIN also operates a web radio service with content geared toward particular countries and region in crisis.

Alertnet [<http://www.alertnet.org/>] is a project of the Reuters Foundation that focuses on rapidly developing humanitarian emergencies and on early warning of future emergencies. It draws on the Reuters news agency's unparalleled 24-hour news feed to provide up to the minute coverage of breaking events concerning natural disasters and complex emergencies, and provides a wealth of country profiles, satellite images, interactive maps, and databases. The site attracts upwards of three million users a year and contributes to network development by providing links to 374 member organizations in 87 countries, a weekly email is received by more than 10,000 readers, and a password-protected Professional Zone where members can post information and contacts of use to other humanitarian professionals.

More recently, some projects have begun to offer more geographically specific portals for information. Apart from the Humanitarian Information Centres (see section on Field-Based Responses, below), websites such as the OCHA *Website in the Russian Federation* [<http://www.ocha.ru>], *AzerWeb* [<http://www.azerweb.com/>] and *Save the Children's Assistance Georgia* [<http://www.assistancegeorgia.org.ge/>] have a perspective firmly based in the field. These sites offer an essential complement to centralized information resources such as ReliefWeb and Alertnet.

Some organizations go beyond “flat” displays of information by providing interactive tools. Searchable databases, maps and Geographic Information Systems (GIS) and electronic forums are featured on a number of these sites. For example, the *Center for Research on the Epidemiology of Disasters* [<http://www.cred.be/>] offers the International Disasters Database; *Development Gateway* [<http://home.developmentgateway.org/>] has databases relating to conflict and post-conflict reconstruction, as well as online discussion forums. The *International Committee of the Red Cross* [www.icrc.org], the oldest and probably the largest humanitarian organization, offers access to databases of treaties and related instruments. The *Norwegian Refugee Council's Global IDP Project* [www.idpproject.org] monitors the movement of people who have been displaced within their own country by conflict or because of human rights violations, maintains a Global IDP database and related maps, and uses this information to promote the safe return or resettlement and reintegration of the displaced.

Specific area resources are also available. The Geneva-based *International Documentation Network on the Great African Lakes Region* [<http://www.grandslacs.net/>] is an international, inter-university program that collects, edits, and provides access to documents on recent events in Burundi, Rwanda and their regional context (Kenya, Uganda, Tanzania and the Democratic Republic of Congo). The network's goal is to make the largest possible range of documents available to decision-makers, academics, and NGOs in those countries and around the world. In order to develop a trusted resource and to foster a culture of critical reading of information, the Network only accepts complete and verified documents (to avoid mis-quotes or false attributions that often fuel strife in the Great Lakes region). Documents include reports and technical materials on development from various sources, letters, statements and studies by public personalities, and communications from within civil society. These documents, which number in the thousands and often exist only in hard copy form, are scanned or re-typed and made available via a searchable Internet database and CD-ROMs. Depending on the original documents, the project makes available resources in English, French, Kinyarwanda, and Kirundi.

Another Swiss-supported Program, on *Humanitarian Policy and Conflict Research (HPCR) at the Harvard University School of Public Health* [<http://www.hpcr.org/>] runs a Portal Development Unit, which gives policymakers and practitioners easy access to information on human security and conflict prevention and allows users to create virtual networks with counterparts to share common concerns. Its Indonesia portal [<http://www.preventconflict.org/portal/main>] has become a trusted source for reports and other documents reflecting many points of view. Another type of portal related to conflict issues supported by HPCR is the *International Humanitarian Law Research Initiative (IHLRI)* [<http://www.ihlresearch.org/ihl/>], allowing access to news articles and resources on the topic of international humanitarian law relevant to situations in ongoing conflicts.

b. Networking and Learning

The second impact has been the contribution of the web in weaving together these different organizations into something that can begin to be described as a sector – whether one labels that sector humanitarian response, peace operations, conflict management, or post-conflict reconstruction, or anything else. While our emphasis in this section is on the World Wide Web, it should be noted that the Internet also provides the basis for other applications for information sharing, e.g. e-mail, newsgroups, file sharing and so on, some of which will be discussed later in the report.

There have been suggestions that an opportunity to build coherent communities of practice is being missed; as one analyst summarized:

“The World Wide Web is at present undoubtedly the most widely used information platform for the humanitarian community. Humanitarian organizations regularly visit each other’s web sites. These sites hardly reflect this reality: the public part of the web sites of most humanitarian organizations is aimed at a vast, anonymous audience, while the restricted part is reserved for staff. Apart from information on the owner of the site and links to related organizations, the sites seldom provide IT services to visitors....More often than not, the web sites of humanitarian organizations are cut off from the rest of the organizations’ information system: most sites are managed as stand-alone tools, often connected to the organizations’ e-mail-systems, but remaining under the strict and constant control of a single webmaster. The unrestricted part of these sites is conceived as

a number of static pages aimed at a vast, anonymous audience. This situation is at present a major obstacle to the integration of the information that is available throughout the humanitarian community: the barriers around some of the information on the local networks have been raised so high, that any sharing of information demands additional work.”¹⁸

In part, this missed opportunity can be attributed to a lack of understanding within the community of the potential of the web, combined with the facts that widespread web access is a relatively recent phenomenon and that many of these organizations work in countries on the other side of the digital divide, where the web has not been a major medium. There is a growing understanding of the power of the web, as the fundraising experience of the DEC mentioned above shows, and networks are starting to discover the different ways that ICT can bring people together.

In the NGO community, the web has made possible wider collaborations between NGOs across the world. The two biggest networks in particular have used technology to improve member relations and advocacy work. The Geneva-based *International Council of Voluntary Agencies* [<http://www.icva.ch/>], a global network of NGOs working on humanitarian relief, human rights, and refugee issues, uses its website to provide members with useful documents and access to policy briefings from the headquarters of relevant agencies such as UNHCR, as well as publishing a regular newsletter that reaches around the world in a way that a printed newsletter could not. The Washington-based *InterAction* [<http://www.interaction.org/ict/>], an alliance of more than 160 NGOs, has gone further and created a headquarters unit specifically to deal with ICT initiatives. This unit reviews access and appropriateness of technology and content for both the NGO and local communities. This work ties in with initiatives mentioned elsewhere in this document, such as NetHope.

The *Global Disaster Information Network (GDIN)* [www.gdin.org] is a coalition of experts from NGOs, governments, international organizations, industry, academia, and donor organizations. Its objectives are to assist in-field disaster managers find information, particularly when other means have failed; to develop unique information sharing procedures that complement extant systems; and to foster the elaboration of technologies for peace as well

¹⁸ Marcel Hummelink, *Evaluation of IT Humanitarian Platforms and Their Possible Utilisation as Coordination Instruments* (paper presented at the ECHO-Partners Annual Conference, Brussels, 14 & 15 October 2002), pp. 1:6 and 2:4-5 [europa.eu.int/comm/echo/pdf_files/2002_partners/information.pdf].

as professional development. A more recent initiative is the *Disaster Resource Network (DRN)* [<http://66.223.23.193/index.html>] of the World Economic Forum, which seeks to build cooperation between businesses and relief organizations during the emergency response and recovery phases of disasters. The DRN seeks to streamline and increase the delivery of industry resources (engineering, technology, transportation and logistics, insurance and others) to the disaster site. Although in its early stages, the DRN could offer a new way to bring together the private and public sectors using the credibility and resources of the World Economic Forum.

The *Center for Security Studies at the Swiss Federal Institute of Technology in Zurich* [http://www.css.ethz.ch/index_EN] provides access to handbooks, studies, working papers, monographs, conference reports and books written from an academic/policy-making orientation. The center is also a focal point for the Swiss *International Relations and Security Network* [<http://www.isn.ethz.ch/>], which links scholars and research institutions at a number of universities that work on international security issues, including conflict prevention and peace operations. The next step is to link these more policy-oriented discussions with field practitioners, to ensure that both sides benefit from each other's knowledge.

A group seeking to do just that is the *Active Learning Network for Accountability and Practice (ALNAP)* [<http://www.alnap.org/>], based in the UK at the *Overseas Development Institute (ODI)* [<http://www.odi.org.uk/>]. Knowledge management – of which communities of practice are an important sub-topic – is still not widely regarded in the ICT4Peace community, although organizations and individuals with military backgrounds (such as UN peacekeeping forces) benefit from the military's focus on lesson learning. ALNAP makes available lessons learned documents drawn from its comprehensive online database of evaluations, as well as hosting discussions forums and meetings that provide a framework for learning in the humanitarian community.

One of the most interesting learning initiatives in the last five years has been the development *Aid Workers Network (AWN)* [<http://www.aidworkers.net/>], a voluntary collaboration between field-based aid workers to share their knowledge and build a broader community of practice. Launched as a pilot project in 2002, it rapidly grew to 6500 members in 163 countries in mid-2004, offering moderated online discussion forums covering every aspect of aid work, from fundraising to programme management, from policy to administration. Until mid-2004, a weekly newsletter (Aid Workers Exchange) was also published, featuring articles written by professional aid workers and question-and-answer sections. This was achieved with almost no

core funding, and shows that the will to develop a community of practice exists in the aid world.

Some organizations offer online training in various fields, notably conflict mediation and resolution. A few examples would include: the *Geneva Humanitarian Forum* [<http://www.genevahumanitarianforum.org/>] which hosts e-dialogues on conflict and peace, including the role of media; and the *Network University* [<http://www.euconflict.org/tnu/index2.html>] and the Geneva-based *UN University of Peace Institute for Media, Peace and Security* [<http://www.mediapeace.org/>] both of which offer online courses. This is a field which has great utility for practitioners, potentially offering distance learning that can be combined with field-based practice and be made accessible to remote participants, including national organizations and staff.

The ODI also runs the *Humanitarian Practice Network (HPN)* [<http://www.odihpn.org/>], making use of a membership-based website and a mailing list facility to reach a far wider audience than would be possible with hard copies of its many publications. These types of basic information resources, although not making full use of the web's potential, still serve an important function in the ICT4Peace community, ensuring wider availability of previously hard-to-access materials, particularly for developing countries. Existing journals available online include *Disasters* [<http://www.blackwellpublishing.com/journal.asp?ref=0361-3666>], the *Journal of Humanitarian Assistance* [<http://www.jha.ac/>], the *Humanitarian Review* [<http://www.humanitarian-review.org/>], and the *International Review of the Red Cross* [<http://www.icrc.org/eng/review>].

2. Early Warning and Conflict Prevention

“Confronting the horrors of war and natural disasters, the United Nations has long argued that prevention is better than cure; that we must address root causes, not merely their symptoms,” urged UN Secretary General Kofi Annan in 1999.¹⁹ Although it is widely agreed that preventive action before a conflict is less costly than intervention during or after a conflict, successful prevention remains elusive. There are many reasons for this, including concerns over issues of sovereignty, lack of political will and constraints on international diplomacy, as well as the problem of drawing attention to conflicts emerging away from the gaze of the world's media. Annan's

¹⁹ Kofi Annan, *Facing the Humanitarian Challenge. Towards a Culture of Prevention*, (Introduction to the Secretary-General's Annual Report on the Work of the Organisation, 1999), p. 1

statement, however, reflects a growing concern to make early warning and conflict prevention a central part of the international community's response.

As a result of this concern, the past fifteen years have seen a growing volume of calls for the development of better early warning systems. Early warning for disasters is not a new idea, but its application in conflict management is fairly new; the challenges involved are qualitatively different and more complex.²⁰ Indeed, the commingling of desires for early warning systems and recognition of the difficulties of making them work has often left experts of two minds on the matter. For example, writing in 1995, one proponent of NGO-supported early warning systems summarized the issue this way:

“A new network specifically devoted to early warnings, and linking local and international NGOs to a central facility, could in theory enhance the timely quality of those signals, legitimate them, and enable the outcries of smaller as well as larger NGOs to be heard in the headquarters of the UN and in Washington, London, Bonn, Paris, and Tokyo. The central facility could evaluate incoming bells of alarm; faint noises would be amplified and transmitted with greater assurances that they would be heard, if not acted upon, down the world's dominant corridors of power. Had a recognizable channel existed in 1994, the Rwandan genocide might have been forestalled. The fears of local NGO leaders might then have been articulated more determinedly and forcefully; the world community might have responded; the UN mandate might have been broadened and preventive diplomacy and preventive interposition might have been possible. But the details of the Rwandan experience, the continuing crisis of Burundi, and the experiences of both Guatemala and Macedonia imply that such a network would be almost impossible to deploy, and that using it would have been and might be much too dangerous for NGOs, especially local ones.”²¹

²⁰ For a brief overview, see Howard Adelman, *Humanitarian and Conflict-Oriented Early Warning: A Historical Background Sketch* (in K. van Walraven, ed., *Early Warning and Conflict Prevention: Limitations and Possibilities*, Netherlands: Kluwer Law International, 1998) pp. 45-49.

²¹ Robert I. Rotberg, *Conclusions: NGOs, Early Warning, Early Action, and Preventive Diplomacy*, in Rotberg, ed., *Vigilance and Vengeance: NGOs Preventing Ethnic Conflict in Divided Societies* (Washington D.C and Cambridge, MA.: The Brookings Institution Press and the World Peace Foundation, 1996), pp. 264-265. For a less ambiguous view, see, Luise Druke, *UNHCR and the Need for “Early Warning”* (UNHCR Refugee Abstracts, 8, December 1989) [http://www.luisedruke.com/luise/unhcr_need_early_warning.htm]

Some experts maintain that early warning is not feasible, for several reasons. Predictions of conflict based on theoretical constructs and formal models cannot capture the unique circumstances on the ground in a given region. It is logistically difficult – and potentially dangerous – for individuals to gather the sensitive information required for early warning in country and transmit it up to the international level. Even if information can be promptly provided to decision makers, they may not know how to respond, and will probably lack the political will to do so if their national security interests are not threatened. Early warning may not translate into early action; for example, in the case of Rwanda, there were relatively unambiguous warning signs, and yet the international community failed to act.²² In the event that the international community does act, any intervention may be ill-considered and might even worsen the problem, e.g. by taking one side without providing sufficient deterrence or incentive to the other to cease hostilities.

While these objections are understandable, they do not constitute a solid case against early warning. The practical objections raised above simply underscore the obstacles that must be overcome with respect to system design. The difficulties of mustering political will and designing effective responses are not arguments against the utility of early warning *per se*, but are rather political-strategic problems endemic to the entire sector. In any case, early warning systems should not be viewed as the sole basis for decision-making; they are an additional contribution to a larger set of capabilities.

Although the central analytical capacity will always be human, ICT can assist in building early warning systems. A number of initiatives have built on this to improve early warning across the international system. Within the UN, OCHA takes the lead role for early warning on complex emergencies. As noted above, OCHA manages ReliefWeb and IRIN, which offer a wealth of well organized and detailed information that can be drawn on in identifying potential hot spots. In addition, the UN General Assembly has tasked the Emergency Relief Coordinator (ERC) with “maintaining an overview of all emergencies through the systematic pooling and analysis of early warning information,” and with providing “consolidated information, including early warning on emergencies, to all interested Governments and concerned authorities.” The OCHA *Early Warning Unit* [<http://ochaonline.un.org/webpage.asp?Page=966>] collaborates with other UN bodies, international NGOs, think tanks, and regional organizations in order to aggregate information and monitor and assess trends and events world-wide that may give rise to humanitarian crises. The Unit monitors developments in

²² See Samantha Power, *A Problem from Hell: America and the Age of Genocide* (New York: Perennial, 2003)

around thirty countries and shares its information with country teams on the ground and its other partners. In addition, the Early Warning Unit has assembled a compendium of case studies that are made available to practitioners world-wide via the *Internet Forum on Crisis Prevention (IFCP)* [<http://ochaonline.un.org/webpage.asp?Page=1327>].

Some UN bodies maintain their own programs. For example, the United Nations Development Programme (UNDP) has established a *Crisis Prevention and Peace Building* area [http://www.undp.org/bcpr/conflict_prevention/index.htm] and is working with selected national governments to establish early warning systems and to build their capacities to foresee potential crises based on in-depth reports and regularly updated information about key indicators. The World Food Programme (WFP) has developed an interesting initiative on behalf of the Inter-Agency Standing Committee (IASC) working group on Preparedness and Contingency Planning. The Humanitarian Early Warning Service (HEWSWeb) [http://www.hewsweb.org/home_page/default.asp] provides a “global multi-hazard watch to support humanitarian preparedness”; at present it covers only natural disasters and not complex emergencies, but it presents an interesting model for aggregating multiple information sources into an easy-to-use format.

Initiatives for ICT-enabled early warning are also being developed outside the UN. In the European Commission, a system called Tariqa has been developed for the external relations department (RELEX), enabling the EC’s 63 delegations around the world to follow global developments relevant to their work through one portal. User needs for the systems were identified through interviews with 40 desk officers over three months; according to those interviewed, the main problem was the absence of a single source for integrated information. The first requirement was therefore to develop an integrated platform through which this information could be made available. Users wanted a system that was demand-driven; a system they could use as needed; and a system resistant to information overload. Tariqa integrates multiple public information sources, automatically filtering news from more than 2,000 print, radio, and television channels and building a customized portal for different geographical desks in the commission. The portal includes news services, specialized press resources, books and articles, maps, and remote sensing resources, as well as information from the commission and its partners. For example, the system allows the user to locate different projects funded by the European Community Humanitarian Office (ECHO), or any other aid agency, in a certain country. Tariqa provides a situational awareness tool that support many functions, not just early warning.

In a more active early warning mode, *SwissPeace* [<http://www.swisspeace.org/>], as well as hosting the KOFF Center for Peacebuilding (to strengthen Switzerland's capacity to address violent conflicts) and the Afghan Civil Society Forum, has also established *Frühanalyse von Spannungen und Tatsachenermittlung (FAST) International* [<http://www.swisspeace.org/fast/>]. FAST was created in 1998 for the Swiss Agency for Development and Cooperation (SDC) as an evolution from earlier early warning systems developed in the wake of the crises in Rwanda and the Balkans. Today, FAST International is also supported by the Austrian, Canadian, Swedish and American governments' respective development organizations. The system is focused on twenty countries or regions in Africa, Europe and Asia.

From a methodological perspective, FAST is widely considered to have been a major advance, employing both qualitative and quantitative methods by blending data analysis with the interpretations of country experts. The precise balance or blend of these approaches is determined on a case-by-case basis according to customer needs. That said, FAST is most known for its quantitative methodology, in which data on conflictive and cooperative events are collected from the organization's own in-country teams and entered into a web-based software tool through a coding scheme called IDEA (Integrated Data for Event Analysis), which is based on the WEIS (World Events Interaction Survey) coding scheme. For each country/region monitored, unique sets of data are collected and analyzed to produce both general and customized information products that include specific policy options for decision makers in government and other sectors. These products include the FAST Updates (including "flash" Special Updates), Analytical Frameworks, the FAST Reporter publication, and Country Risk Profiles.²³

The second project of interest is the *Stockholm International Peace Research Institute's (SIPRI) "Early Warning Indicators for Preventive Policy"* [<http://www.sipri.org/contents/it/ewi.html>]. Launched in 2002, SIPRI's project makes heavy use of the possibilities provided by new technology. As with the FAST system, the project seeks to break new ground by using a sophisticated quantitative methodology that is complemented by expert analysis. The former relies on the statistical analysis of a database comprising more than 1200 structural and event indicators culled from a wide range of different sources, including a monthly expert survey. Trends are graphically

²³ For an assessment of the system, see, Heinz Krummenacher and Susanne Schmeidl, *Practical Challenges in Predicting Violent Conflict FAST: An Example of a Comprehensive Early-Warning Methodology* (October 2001) [http://www.swisspeace.org/publications/wp/working_paper34.pdf]

displayed, a predictive model and ‘crisis index’ are employed, and the results of the current test phase will be made publicly available on the Internet. The geographic focus is on West Africa, and SIPRI has developed a network of experts in the region that not only provide analysis and data, but also participate in the development of the methodology and indicators. SIPRI is also developing an Integrating Fact Databases as part of its International Relations and Security Project, creating a federated system of databases at different geographical locations, accessible through a single user platform.

Finally, the *Rwanda Project of the Center for International Development and Conflict Management, University of Maryland at College Park* [<http://www.cidcm.umd.edu/rwanda/index.htm>]. The project seeks to help advance reconciliation between Hutu and Tutsi; to assist in this effort, the scholars involved are developing an Africa-focused interactive tool to assist development managers, implementers, and architects in integrating ICT into peace building efforts. Building on an index of forty conflict drivers, the tool will provide a web-based multi-layered matrix linking ICT program results and lessons learned to reduce the conflict potential of each driver and identify strategies for conflict sensitive development. After undergoing an extensive period of prototype testing, the tool will be fully operational by the end of 2005.

Early warning systems continue to develop, but it is still unclear what role ICT can play in preventing conflict. The best hope seems to be with promoting better communication between factions, communities and external actors in the hope of altering the dynamics of conflict to allow for a negotiated resolution. For example, in Chiapas, Mexico, the Zapatista’s use of the Internet called international attention to the plight of the indigenous; this attention may have afforded them some protection and prevented a full-scale violent conflict from developing by enabling their participation in a political process. In this context, processes of social reconciliation (see section 5b, below) may offer more hope than higher-level diplomatic initiatives – at least in the context of ICT4Peace.

3. Operations and Support

An enormous variety of actors across a wide range of sectors have become involved in implementation of various aspects of peace operations; high-profile operations such as Kosovo or Afghanistan attract international NGOs numbering in the hundreds. In complex emergencies, with so many organizations on the ground, coordination becomes a priority. Coordination is essential for a number of reasons; to reduce duplication and to fill gaps in assistance, to ensure efficient use of existing supply chains, to build local

knowledge to ensure that assistance is appropriate, and so forth. Coordination should be geared towards one end – ensuring that the needs of beneficiaries are met in an appropriate and timely manner, and to avoid or mitigate unnecessary human suffering. Coordination between civilian and military forces, between the public and private sector, and between different branches of national government is also pressing concerns.

It is worth noting that the traditional concept of coordination has been joined recently by a newer idea; that of integration within a UN mission. In the wake of multi-faceted missions such as Kosovo or East Timor – where the UN may be required to take on a wide range of activities in the same area – there has been extensive discussion about how to ensure that those activities – and the organizations that implement them – can work together more closely towards a perceived common end. Although popular in policy circles, to whom the advantages are obvious, this idea has been contested on the ground, particularly by some humanitarian actors.

The argument put forward by these critics is that the fundamental principles of humanitarianism – impartiality, neutrality, and independence – are not negotiable, that the provision of humanitarian aid should be based on human needs alone, and not influenced by political motivations. Humanitarian organizations fear that their work may be used as a political tool; in more concrete terms, there is also considerable concern that any erosion of ‘humanitarian space’ – the freedom of movement and activity to provide humanitarian assistance, usually on the basis of informal assent from or agreement with belligerent parties – will endanger both their ability to carry out their work – and endanger the security of their staff and assets.²⁴ The advocates of the integrated approach maintain that every action in a conflict zone has political ramifications – even supposedly ‘neutral’ ones – and that it is best to consider these in a holistic manner that takes into account those ramifications and seeks to use all available means to achieve the key political goal of building peace.

These arguments are particularly relevant in the context of the debate over civil-military co-operation.²⁵ Information-sharing between humanitarian workers and the military is a contentious topic. Point Four of the *Code of*

²⁴ Joanna Macrae and Nicholas Leader, *Shifting Sands: the search for ‘coherence’ between political and humanitarian responses to complex emergencies* (Humanitarian Practice Network, London, 2000) [<http://www.odi.org.uk/hpg/papers/hpgreport8.pdf>]

²⁵ Jane Barry and Anna Jefferys, *A Bridge Too Far: aid agencies and the military in humanitarian response* (Humanitarian Practice Network, London, 2002) [<http://www.odihpn.org/documents/networkpaper037.pdf>]

Conduct for the International Red Cross and Red Crescent Movement and NGOs in Disaster Relief (which the majority of international NGOs have now signed up to) states that:

“We will never knowingly – or through negligence – allow ourselves, or our employees, to be used for to gather intelligence of a political, military or economically sensitive nature for governments or other bodies that may serve purposes other than those which are strictly humanitarian, nor will we act as instruments of foreign policy of donor governments.”²⁶

Civil-military relations are an extremely complex and contentious field, and it is not possible to explore them fully here, except to note that there is a clear impact on information-sharing between civil and military agencies in the field. Although the extent and terms of civil-military relations are debated from emergency to emergency, there is agreement that such information-sharing is a prerequisite for coordination.

Amongst civilian agencies, coordination needs to occur both vertically – between organizational headquarters and their staff at different local levels – and horizontally – between the different actors, at both headquarters and field levels. Horizontal (or inter-agency) coordination is usually more difficult, since differences in the mandates, resources and capacities of different organizations can impede cooperation – not to mention competition for funding. All these factors can hinder coordination even in comparatively simple emergency situations such as natural disasters; in complex emergencies, they become even more difficult to manage. Yet this very complexity increases the need for effective coordination. In order to successfully manage such operations, more widespread use of ICT has become essential. Modern humanitarian operations have been made possible by ICTs, and it is now difficult to imagine an operation without that technology.

a. Field-based Projects

Recently many organizations have begun to use technology in the field to support the work of others, both for communications support and information management; both of these have been seen to improve coordination in the field.

²⁶ International Federation of the Red Cross and Red Crescent Societies *Code of Conduct for the International Red Cross and Red Crescent Movement and NGOs in Disaster Relief* (2004)

One widely-known concept are the *Humanitarian Information Centers (HICs)* [<http://www.humanitarianinfo.org/>] operated by the Field Information Support Unit (FIS) within the Advocacy, and Information Management Branch of OCHA (see section 1, above). HICs are open access facilities established in conflict and post-conflict zones to support the humanitarian assistance through the provision of information resources. They are coordinated through OCHA, have been endorsed by the Inter-Agency Standing Committee (IASC), and report to the UN's Humanitarian/Resident Coordinator. They bring together UN, NGO and sometimes governmental actors to support coordination in the field. They create a common meeting point and framework of action for information managers from diverse organizations, most notably international agencies and NGOs, but hopefully also local actors as well; ensure that these organizations have access to the information management tools needed to assess, plan, implement and monitor humanitarian assistance given local conditions; facilitate standardized data collection, analysis and dissemination, as well as individual and joint initiatives; and promote a culture of information-sharing and awareness of good practices. The kinds of information resources they make available can include everything from orientation materials and maps, contacts lists, meetings schedules to project management information, "Who's doing What Where" databases, GIS data, incident reports, research studies and beyond. HICS have established in a number of complex emergency environments: notable examples include the Afghanistan Information Management Service, the Sierra Leone Information Service, and the Humanitarian Information Centre for Iraq [all of which can be accessed through <http://www.humanitarianinfo.org/>].²⁷

More broadly, FIS aims to strengthen and facilitate the use of data and information in order to strengthen the humanitarian community's capacity to carry out field-based information management functions in new and ongoing complex emergencies and natural disasters; enable OCHA and the humanitarian community to deploy information management specialists to the field to support agencies, governments and the UN as a part of a first wave response to new emergencies and disasters; and support the information management efforts of OCHA field offices through the provision of standardized tools and products and technical support. A pilot project is

²⁷ Paul Currion, *Humanitarian Information Centres: Establishing Coherent Approaches to Field-Based Information Management in Emergencies* (a report commissioned by the Field Information Support (FIS) Unit of the Office for the Coordination of Humanitarian Affairs (OCHA), March 2001) <http://www.reliefweb.int/symposium/InfoCenters.htm>

currently underway to strengthen the information management capacity of individual OCHA offices in the field.

OCHA also provides a number of other services that rely on ICT for their operations. The Virtual Operations On-Site Coordination Center (Virtual OSOCC) is an Internet-based facility for the aggregation into databases and exchange of information from relief actors, who also can provide comments on existing information and discuss issues of concern with other stakeholders. The Joint UNEP/OCHA Environment Unit monitors the world's situation and exchanges information through an international network of contacts, and provides an information clearing house that channels information, maps and images from diverse institutions to the relevant authorities in affected countries. A recent report summarizes the Joint Unit's work.²⁸

Also providing system-wide coordination support is the *UN Joint Logistics Centre* [<http://www.unjlc.org/>]. An inter-agency facility operating under the custodianship of World Food Program, the UNJLC reports to the Humanitarian Coordinator in any given crisis, and overall to the IASC. Its mandate is to coordinate and optimize the logistical capabilities of humanitarian organizations in large-scale emergencies. Decisions to deploy a UNJLC can be taken within 24 hours taking into account situation assessments and the scale of the crisis, existing agency capabilities, and the possible use of military and civil defense forces. Once the decision is taken, relevant organizations are informed, rapid assessments detailing operational requirements are undertaken, and recruitment of staff is initiated. To facilitate a swift deployment, various standby capacities are drawn upon, including a special Flyaway Kit containing essential equipment and ICT support. The staff will initially be integrated into the United Nations Disaster Assessment and Coordination (UNDAC) Team, and will provide support in logistics coordination and information management. The UNJLC's main responsibilities normally will include identifying and eliminating logistical bottlenecks to avoid duplication and wasteful competition among organizations; tackling logistics policy issues; coordinating humanitarian movements with military authorities; undertaking assessments of roads, bridges, airports, ports and other logistics infrastructure and recommending actions for repair and reconstruction; serving as a platform for gathering, collating, and analyzing and disseminating information required by agencies, including by using mapping and GIS capabilities. Multiple information dissemination mechanisms are utilized, including inter-agency meetings, bulletins, CD-ROMs and a website.

²⁸ *Joint UNEP/OCHA Environment Unit Overview - Note by the Secretariat* (June 2005) [<http://ochaonline.un.org/GetBin.asp?DocID=3365>]

As the largest UN agency in terms of resources, the *World Food Program (WFP)* [<http://www.wfp.org/>] is perhaps the most advanced user of ICT for its field operations, with five key initiatives:

1. ETNet is WFP's communications backbone, connecting its major operations through a satellite-based system that incorporates communication links with other UN agencies. ETNet provides voice and data communication via phone, fax, e-mail and video-conferencing;
2. The Deep Field Mailing System (DFMS) uses high-frequency short-wave radios to transfer e-mail without using commercial electricity or telephone lines. The system allows users in remote locations to send any data – text, spreadsheets and even images at very low cost. It was first deployed in WFP's Great Lakes operations in Africa, and has since grown to become the aid community's most extensive and independent network, serving 80 WFP offices worldwide;
3. The Commodity Movement Processing and Analysis System (COMPAS) is a database platform that allows food commodities to be tracked from procurement to arrival at WFP distribution points, allowing for oversight of thousands of tons of food supplies, whether in storage, in transit or at point of delivery;
4. Field Communications (FieldComms) are a network of specialists based in Africa and Asia that can be dispatched anywhere in the world within 48 hours with the equipment necessary to get WFP communications running in an emergency;
5. The *Fast IT & Telecommunications Emergency and Support Team (FITTEST)* [<http://www.hiciraq.org/services/FITTEST/index.asp>], based in Dubai, has participated in emergency operations in 89 countries. In Iraq, a 65-person team helped install and maintain the communications network used by 2,000 humanitarians, and they have been central to the Asian tsunami response and other crises.

NGOs are also involved in efforts to improve operational ICT support. *Télécoms sans Frontières (TSF)* [<http://www.tsfi.org/>] builds emergency telecommunications systems in the field to support humanitarian relief operations. TSF has a permanent monitoring center which can deploy specialized teams anywhere in the world in less than 48 hours. Typically, the teams install small but powerful mobile satellite communications to help NGOs and other partners coordinate logistics and related matters. Such satellite systems are especially useful in remote locations where fixed-line telecommunications are unavailable. TSF is expanding its operations in several directions; for example, the organization is developing specialized

operations in sectors like telemedicine and agriculture to bring expertise to remote areas.

UK-based *MapAction* [<http://www.mapaction.org/>] is an NGO that specializes in using satellite earth imaging, data processing done in the UK, and locally deployed mapping teams to assist relief missions to supply up-to-date real-time maps of disaster areas to relief operations. MapAction is also part of a consortium that includes public and private sector organizations, RESPOND [<http://www.respond-int.org/index.htm>]. RESPOND combines the expertise of the geospatial private sector with the needs of the international humanitarian community, committing itself to making geospatial technologies more accessible to the humanitarian community, by improving access to maps, satellite imagery and geographic information. Other NGOs are also looking at GIS application for emergencies, including MapRelief [<http://www.maprelief.org/>] and Global Map Aid [<http://www.globalmapaid.rdvp.org/>]; Médecins Sans Frontières (MSF) has partnered with European firm KeyObs to produce dedicated humanitarian GIS products. The NGO with most experience in this sector, however, is the Vietnam Veterans of America Foundation (VVAFA), whose IMMAP project – while only a small part of VVAFA's work – has been instrumental in supporting both Mine Action initiatives and the HICs operated by OCHA. NGOs offer a different perspective and a different approach to GIS in the field, one that can complement that of international organisations, and it seems certain that these actors will expand their activities in coming years.

NetHope [<http://www.nethope.org/>] is a network of international NGOs that enables its members to deliver information and accelerate responses to developing countries, including those dealing with complex emergencies and natural disasters. The network has three main areas of activity. First, it promotes information and knowledge exchange by providing forums in which member organizations can document and share their field experiences using and deploying ICT. In regularly scheduled teleconference calls, members review existing projects and update each other about the status of various initiatives. These discussions are archived in a database that can be searched for specific information and discussions so as to build a collective knowledge base. NetHope also holds annual meetings which deepen the dialogue and networking among members. Second, it collaborates with NGOs and the private sector to identify best practices in the deployment and use of ICT to support humanitarian relief. And third, NetHope tests and manages the deployment of technology that can give members Internet access from remote sites where humanitarian relief operations are underway. By gathering information about potential deployment sites and then piloting programs to test the feasibility of different solutions, members are able to focus on the

varying implementation needs of various regions. NetHope's support may include obtaining low-cost satellite, wireless and terrestrial communication facilities, including direct subscriber line (DSL) broadband networks and Internet telephony applications, and managing their deployment in countries where the absence of functioning PSTNs constitute obstacles to humanitarian work. One particularly interesting project was the deployment of the NetReliefKit providing portable Internet connectivity, so that local relief groups responding to the December 2004 South Asia tsunami could communicate via laptop computer on wireless local-area networks where conventional PSTNs were absent or destroyed.

The private sector has also been involved in the field, with one notable example being the *Ericsson Response Program* [<http://www.ericsson.com/about/ericssonresponse/>], a special initiative of the telecommunications and electronic company to assist in relief and reconstruction. The program has three major components. First, it undertakes research and product design through the Ericsson Response Technical Reference Group to identify needs and develop applications to improve disaster response. Second, it mobilizes Ericsson Response Units comprising equipment and the people in order to ensure the rapid deployment of communications systems. A volunteer program allows Ericsson employees to participate in these efforts by conducting on the ground assessment, working with relief agencies on site, and installing and operating mobile cellular networks and other technologies. Third, Ericsson participates in global advocacy for disaster response by working with governments, customers, other equipment and service suppliers, NGOs, and agencies like OCHA and UNDP to develop disaster preparedness programs around the world.

Partners in Technology International (PACTEC) [<http://www.pactec.org/>] specializes in the installation of high frequency radio systems, radio e-mail, and satellite telephones in remote or austere environments. On the invitation of NGOs, international agencies and government, the company has worked undertaken projects in Afghanistan, Indonesia (Aceh), Kazakhstan, Mauritania, Morocco, Laos, and Senegal. Beyond installing VSAT systems, Internet cafes, and related facilities, it has offered technical and business training for local populations to help them develop sustainable business models so that they can take over such operations. PACTEC is in the process of spinning off a new non-profit organization to be called the *Disaster Relief And Strategic Telecommunications Infrastructure Company* [<http://www.drasticom.net/>].

b. Operational Support

It is nearly impossible to work in the difficult environment of a complex emergency without support from organizational headquarters. This is true for all large organizations, and no less true for field-based ICT projects such as those described above. A number of initiatives have been created specifically to provide this type of support in terms of expertise and resources, using additional ICT capacities to provide technical support to projects in remote locations, as well as more general ongoing forums for specific areas such as GIS and logistics.

The *Geographic Information Support Team (GIST)* [<https://gist.itos.uga.edu/index.asp>] is a US-funded collaboration among a number of governmental and intergovernmental organizations, with OCHA acting as the secretariat. The GIST works to improve humanitarian response through the improved information flow and presentation, provide a forum for geographic and geo-referenced information and data exchange amongst humanitarian response agencies and donors, and develop and promote the use of techniques and standards to enhance data and information coordination and exchange. It has provided such services with respect to complex emergencies in Afghanistan, Goma, the Democratic Republic of Congo, Iraq, Kosovo, and Southern Africa, and supports the Data Exchange Platform for the Horn of Africa (DEPHA), the Sierra Leone Information Centre (SLIS) and the Southern Africa Humanitarian Information Service (SAHIMS).

UNOSAT [<http://www.unosat.org/>] is a Geneva-based United Nations initiative involving a consortium of national and international institutions and private firms dedicated to offering the humanitarian community with access to satellite imagery and GIS. The core team consists of UN fieldworkers as well as satellite imagery experts, geographers, database programmers and internet communication specialists. Coupling satellite image processing and Internet database hosting and distribution, UNOSAT provides the UN, implementing partners and local authorities with up to date images and analyses of natural disasters and complex emergencies. One such product are the Conflict Maps illustrating the relationships between social and economic exclusion, ethnic distribution, level of access to social services and geographic location of conflict areas. A celebrated example of the service's potential was the creation of a map of the barrier being erected between Israel and the Palestine Territories showing its relationship to social and demographic patterns, produced using UNOSAT's data and technical analysis by the local HIC team (see section 3a, above, for more information about the HICs).

At the *Department of State (DoS)* [<http://www.state.gov/>] of the United States government, the *Humanitarian Information Unit (HIU)* [<http://www.state.gov/s/inr/hiu>] is a part of the Bureau of Intelligence and

Research that serves as an interagency center to identify, collect, analyze, and disseminate unclassified information critical to the US government and its partners in humanitarian emergencies. The HIU also works to promote best practices in humanitarian information management. Some of its functions include identifying key sources of geospatial and georeferenced data customized to different organizations' information requirements; collecting timely, verifiable, and relevant data by utilizing an extensive network of information partnerships; analyzing data using multi-agency expertise and applying ICT to identify significant trends and relationships; and disseminating information to all relevant actors, including policymakers and operational field managers.

Another interesting area that has been facilitated by the internet is the development of tools that enable matching of needs with resources. *ReliefGuide* [<http://www.reliefguide.com/>] is an Internet platform that brings together buyers and sellers of relief-relevant products and services to promote deal making. It includes an interactive list of sellers organized by categories and has a facility to make public tenders. *Global Hand* [<http://www.globalhand.org/>] works in a similar way, but operates on a request basis, aiming to match requirements of organizations (and potentially communities) in the field with private donors. *AidMatrix* [<http://www.aidmatrix.org/>] is a non-profit that seeks to build partnerships to bring items such as food, clothing, building supplies, medical and educational supplies to people in need during the time of need. Using such Internet platform, donors, NGOs and suppliers are better able to determine which items are needed most where and by whom, identify available supplies, coordinate the logistics of their delivery, and hence increase efficiency when responding to emergencies.

4. Technical Development

a. Technical and Organizational Standards

ICT is both a focus for standardization programs, and a means for disseminating standards among the relevant actors. Technical standards are essential for ICT in any sector; without agreement on which technology will be used for which purposes, it is difficult to build information systems that enable organizations to communicate with each other. Professional standards provide a basis for individuals and organizations to implement those technologies, offering regulations and guidelines for good practice. In order to be most effective, the ICT4Peace community needs to develop both of these types of standards. The sector is relatively recent and, as a result, there

is a lot of work to be done here; however, a few initiatives have already been somewhat successful.

In terms of emergency telecommunications, the *Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations* [<http://www.reliefweb.int/telecoms/tampere>] is the most important standard in the ICT4Peace field. The Convention was adopted in June 1998 by sixty governments and came into force in January 2005, giving privileges and protections to persons and facilities related to the provision of emergency telecommunications assistance. Although these rights are circumscribed by national sovereignty and are based on the assent of the national government, the Convention is a landmark agreement that should be implemented in all countries at risk from complex emergencies and natural disasters.

Two organizations played a key role in promoting Tampere; the ITU and OCHA. The *International Telecommunication Union* [<http://www.itu.int/>] is the UN agency responsible for international telecommunications standards and policies, global radio frequency spectrum management, and telecommunications for development. ITU has undertaken a number of initiatives of relevant to humanitarian relief operations. In terms of its internal operations, the ITU has adopted resolutions and recommendations on the provision and regulatory treatment of emergency telecommunications, and is working to establish an international telephone country code for humanitarian operations.

OCHA convenes the *UN Working Group on Emergency Telecommunications (WGET)* [<http://www.reliefweb.int/telecoms/intro/wget.html>], which provides an open forum to facilitate the use of telecommunications in the service of humanitarian assistance. It comprises UN entities (including the ITU), the ICRC, NGOs and experts from the private sector and academia. The WGET usually holds two plenary meetings per year, and its objectives include facilitating the promotion and implementation of the Tampere Convention, encouraging application of the resolutions and recommendations relative to telecommunications for disaster relief, exchanging and disseminating information concerning emergency telecommunications, and promoting cooperation and interoperability of telecommunications with and in the field.

With regard to technical standards, the *Crisis Response Executive Advisory Committee (CREATE)* [<http://www.itcm.org/approach/create.html>] has been created to facilitate structured cooperation between international organizations and ICT vendors. CREATE is organized by the Crisis Management Initiative (see immediately below for more information about CMI) and the *Object Management Group* [<http://www.omg.org/>], a non-profit consortium that

produces and maintains computer industry specifications for interoperable enterprise applications. The group holds bi-annual meetings and sustains online dialogue to advance its work program. CREATE focuses on the technical standardization of management tools for administrative processes (e.g. international organizations' reporting to member states using standardized formats), common situational awareness in the field (military, political, incident reporting, security status), risk management and early warning, and so on.

Structured Humanitarian Assistance Reporting (SHARE) [<http://www.proventionconsortium.org/files/share.pdf>] is an approach developed by the *GIST*, as a systematic methodology of organizing critical information so that it can be used more effectively, improving accuracy and verifiability by structuring and labeling data from a variety of sources. SHARE uses geographic location codes (place codes, or p-codes) accompanied by useful metadata²⁹ that allow specialists to precisely map events and objects on the ground. This allows a common frame of reference to be established, leading to more coordinated decision-making, such as which areas to prioritize, who is responsible for what, and what kind of assistance is required. SHARE is not a new idea, but a distillation of an approach developed over a number of years by operational humanitarian assistance agencies.

Although not dealing with conflict issues, *Global Identifier Numbers (GLIDE)* [<http://www.glidenumbers.net/>] is an interesting initiative; a system of unique alphanumeric codes to identify natural disasters so that organizations collecting disaster information can easily share this information. Developed by the Centre for Research on Epidemiology of Disasters, the Asian Disaster Reduction Center and ReliefWeb, the system is being used by these organizations as well as other international institutions and national agencies.

The development of professional standards is less advanced. The most important event to date was the February 2002 *Symposium on Best Practices in Humanitarian Information Exchange* [<http://www.reliefweb.int/symposium/>], organized by OCHA. Over two

²⁹ “Metadata is structured data describing facts about documents, in such a way as to help users make sense of their content, their relationships and their history... Metadata have been often propose to help in organizing data, managing document effectively and obtain better results with search engines. Data that do not have accompanying metadata are often hard to find, difficult to access, troublesome to integrate, and perplexing to understand or interpret.” Fabio Vitali, *Metadata for OCHA* (21 Dec 2004)

hundred participants, drawn from a range of international agencies, governments, donor organizations, and NGOs, developed a set of Operational Principles for Humanitarian Information Management and Exchange seven sets of best practice guidelines for ICT managers at headquarters and in the field. Because they capture both the ICT-enabled emerging consensus about the conduct of key ICT4Peace activities and the kinds of issues and challenges practitioners face, these useful principles and guidelines are included in Annex 1 of this document. The challenge now is to raise awareness of these norms within the conflict management, humanitarian relief and reconstruction communities, to encourage their development based on field experience, and to develop better mechanisms for applying and monitoring them.

One organization attempting to do this has been the *United States Institute for Peace* [<http://www.usip.org/>] has long been a leading force in the development of conflict and peace thinking, and have produced a wide range of books, papers, and conference reports that are accessible via its website. In addition, through its *Virtual Diplomacy Initiative* [<http://www.usip.org/virtualdiplomacy/index.html>], USIP is playing a role in catalyzing the emerging discussions about ICT4Peace, especially with respect to issues of organizational coordination and technological interoperability. USIP has a long-term interest in organizational standards through its Best Practices Project, and is also co-organizer of the Information Technology for Crisis Management (ITCM) conference series with the *Crisis Management Initiative (CMI)* [<http://www.cmi.fi/>].

The work of CMI under the banner of the *Information Technology and Crisis Management Project (ITCM)* [<http://www.itcm.org/>] has also become increasingly important. Led by Marti Ahtisaari, the former President of Finland, CMI is a prominent player in conflict prevention and management, including with respect to high-level mediation efforts. In this context, ITCM works to improve sharing practices so as to overcome the problems of informational interoperability described above. The project provides a forum in the various actors discuss the key challenges concerning communication and connectivity in crisis environments and agree on standards, system design principles, and inter-organisational and cross-border cooperation processes. In addition, ITCM promotes the development and piloting of concrete ICT initiatives (see section 4b, below, for a description of an ITCM project) to support operational activities of crisis management organisations,

The *Center of Excellence in Disaster Management and Humanitarian Assistance* [<http://www.coe-dmha.org/>] is a project mandated by the US Congress to improve the coordination and integration of the world's response

to natural disasters, humanitarian crises and peace operations. The Hawaii-based center is designed to help those active in the provision of relief or security to better coordinate and learn about the role of the other actors in the humanitarian community so that they can improve the performance of their own roles. This is done through education, training, research and information management activities, many in a multinational, multidisciplinary setting.

Despite the work of these organizations, however, the weak link in ICT4Peace is the absence of clear organizational standards, particularly relating to good practices. Beyond continuing with the development of standards, the challenge is to identify ways to encourage their wider adoption and monitor their implementation. Operational Guidelines such as those agreed by the 2002 OCHA Symposium are of limited value if they are not widely disseminated and discussed.

A growing number of experts and practitioners argue that what is needed most is a coherent and flexible doctrine that enjoys broad community support. A culture of information sharing built on transparency and trust would help ensure that everyone has ready access to the information and knowledge they need to operate, and could progressively change the organizational cultures and incentives that produce fragmentation and reduce effectiveness. As former Finnish President Martti Ahtisaari said at a recent conference, “We can no longer afford to be at the mercy of personal chemistry and ad hoc arrangements.”³⁰ But fleshing out the precise contours of a doctrine, thinking through its real-world application, and securing broad buy-in from the diverse organizations involved would require an organized, sustained dialogue.

Voluntary standards may elicit statements of support when they are released that are not subsequently matched by organizational practice, particularly when more pressing matters arise – for instance, during an emergency. In the ICT industry, there are a large number of standards whose production has absorbed significant resources but which remain agreements on paper only. In the absence of a combination of centralized guardian to maintain and develop such agreements with a decentralized community of practice to monitor compliance, the same dynamic could apply in ICT4Peace. At present, there is no framework for discussions and neither centralized nor decentralized mechanisms through which to develop and implement standards.

³⁰ Crisis Management Initiative, *Security –the Common Denominator for Connectivity: Conference on Crisis Management and Information Technology, Saint-Paul-de-Vence, 3-6 November 2004* (Helsinki: CMI, 2004), p. 21.
http://www.itcm.org/pdf/ITCM_conference_report_2004.pdf

b. *Application Development*

Software developed specifically for peace operations – or, more specifically, for organizations involved in peace operations – is relatively rare. However some important initiatives have emerged in the last few years, from both for-profit and non-profit organizations. These organizations are beginning to demonstrate that there is a market for such specialized applications, and hopefully they will lead the way for future developments.

On the non-profit side, one of the most long-standing applications of this sort is the *Information Management System for Mine Action (IMSA)* [<http://www.imsma.ethz.ch/>]. IMSA is a management tool, continuously revised and upgraded based on input from users, that combines a relational database with a GIS to provide managers and practitioners with up-to-date information needed to facilitate decision making. It can be used to plan, manage, report and map demining and removal activities; manage victim information; and record, report on, and map related socio-economic information. The system is currently in use in more than 80 % of mine action programs around the world. IMSMA was developed and distributed by the Geneva Centre for Humanitarian Demining (GICHD) in collaboration with the Center for Security Studies at the Swiss Federal Institute of Technology and the UN Mine Action Service (UNMAS).

The *Fritz Institute* [<http://www.fritzinstitute.org/>] works to bring private sector expertise to bear on the logistical organization of humanitarian relief operations. Recognizing that many humanitarian relief organizations have staff, mandate, and resource limitations, the institute seeks to foster the development of communities of logistical practice, develop solutions to challenges in the delivery of aid, improve learning through measurement, and accumulate and disseminate knowledge through an academic network and publications. It is building a global network of donors, academics and humanitarian agencies to look at the complexities of measuring humanitarian impact. In addition, the Institute works with the private sector to develop technologies customized to the unique requirements of humanitarian operations. For example, its Humanitarian Logistics Software is a web-based supply chain software solution, created in collaboration with International Federation of Red Cross and Red Crescent Societies that facilitates the delivery of precise relief services, enabling real-time matching of the needs of the affected population with the supplies that need to be mobilized, procured, tracked and delivered.

Provided by Benetech, a US-based technology non-profit, *Martus* [<http://www.martus.org/>] is a software tool that allows users to document incidents of human rights abuses by creating bulletins and uploading them for storage on redundant servers located around the world. This free application is intended for use at the local level; Martus is not designed to control the flow of such information, but to help human rights groups to take more control over the information that is central to their work.

Organizations could use ICT more effectively for their own management; frequently the potential of ICT is not realized. There are some interesting exceptions, such as the *Organization for Security and Cooperation in Europe (OSCE)* [<http://www.osce.org>], which has developed an entirely new management application, the Integrated Resource Management System (IRMA).³¹ IRMA is a dedicated software application that incorporates all of OSCE's management functions, enabling managers within the organization to deal with all financial and administrative matters quickly and easily – such as monthly accounts, or recruitment processes – and in a way that is completely integrated throughout the organization. The intention behind IRMA is to eliminate the complicated and confusing bureaucratic processes that often hinder large international organizations, and use the enormous processing power of ICT to streamline and automate those processes.

Similarly, the *International Federation of Red Cross and Red Crescent Societies' FedNet* [<https://fednet.ifrc.org>] maintains an extranet, a secure, password-protected private web site accessible via the Internet. The system is intended to the posting and sharing of multilingual information – documents, photos, maps, contact lists, etc – by national societies, Geneva staff, and field delegations, and to serve as an interactive forum for online collaboration. It builds on previous federation experiences with extranets, including the Disaster Management Information System. To assist field workers in low bandwidth countries, the system has been designed so that pages load quickly by using mostly text in common spaces.

In the private sector, there are two companies that notably target organizations working in the field as key markets: *Groove* [<http://www.groove.net/>] and *Voxiva* [<http://www.voxiva.net/>]. Previously a small technology start-up established by the creator of Lotus Notes, Groove has recently been acquired by Microsoft. Groove has been used in Iraq, the Asia tsunami response and other emergencies, mainly by US organizations and particularly by the

³¹ Michael v. d. Schulenburg, *OSCE's Management Reforms and IRMA (2002-2005): Final Report* (Vienna: Organisation for Security and Cooperation in Europe, February 2005).

military. They are now aiming to expand their services in the NGO market with the Groove Virtual Office, an application that offers advanced collaboration and communication tools, as well as the capacity to work both online and offline. Voxiva is another technology start-up with a specific philanthropic intent. Originally providing reporting services (especially in the health sector) to governments in developing countries, Voxiva is now also targeting the NGO and UN market. Voxiva offers an integrated monitoring and reporting function through an online platform, and they are currently developing a new application for programme management in the field.

Larger technology corporations have also been involved in initiatives to develop new software. Through its Disaster Assistance Technology Grants program, *Microsoft Corporation* [<http://www.microsoft.com/>] has teamed up with *Mercy Corps* [<http://www.mercycorps.org/>] and other NGOs to develop the Food and Commodity Tracking System (FACTS). FACTS is a tool designed to promote the coordinated management of relief and development supplies during disaster response and reconstruction operations. It allows relief workers to track commodities into, through and out of distribution channels at both the headquarters and field level via standardized Internet-based inventory information that can be retrieved from offices and via personal digital assistants (PDAs).

Similarly, the *Oracle Corporation* [<http://www.oracle.com/>] has been active on a number of fronts, most notably by working with the OSCE to develop its above-mentioned Integrated Resource Management System (IRMA) to facilitate the vertical coordination of conflict management operations. In addition, Oracle has chaired a five-company task force on ICT systems for post-conflict reconstruction, and has participated in the evolving Government out of a Box (GooB) initiative (see section 5, below, for full description of GooB).

The *Crisis Management Initiative (CMI)* [<http://www.cmi.fi/>] (see sections below for more details) has been involved in a number of these initiatives, and has also worked with Finnish private sector companies to begin development of key applications.

One example of this is the ITCM/SKIES [<http://www.itcm.org/approach/tools.html>] system is a web-based communication, cooperation and management tool for humanitarian and crisis management field operations. All communications within the system are encrypted and access to different functions and data can be flexibly controlled. A demonstration simulation of the SKIES system was held in Bosnia and Herzegovina in October 2004. The primary goal of the simulation

was to demonstrate the benefits of an information-exchange platform between agencies, including both civilian and military organizations. The system was used to report security incidents. In this sense it served as a "virtual knowledge warehouse" and allowed for efficient and accurate real-time information exchange. Eventually, such systems may improve decision making and benefit planning and conducting of operations.

National governments pursue their own operations in conflict zones and by necessity engage in coordination. Given its central role in leading or conducting humanitarian operations and military interventions and the vast technological and organizational resources and expertise at its disposal, the US government unsurprisingly is by far the most prominent player in this space. The Department of Defense sponsors the *Defense Advanced Projects Agency (DARPA)* [<http://www.darpa.mil/>], which supports *Strong Angel II* [<http://www.strongangel.telascience.org/>], a civil-military operations exercise to simulate a crisis in an 'austere environment' (a phrase which the DoD uses to describe field-based relief operations). The aim is to design and implement a capacity for rapid and appropriate information management drawing on resources within and across civil-military sectors. This is to address the problems faced by US Civil-Military Operations Centers during previous interventions, which have been variably successful in providing trusted information sharing. Strong Angel seeks to develop solutions for translation, collaboration, communication (voice and data), documentation, GIS, logistics, needs assessment and response tracking. One interesting feature of the exercise is that it uses off-the-shelf hardware, and software ranging from Open Source products (such as OpenOffice) and proprietary tools from vendors such as Microsoft.

The Open Source movement has grown rapidly in the last few years, with the success of software such as Firefox (a free web browser) leading the way. One project aiming specifically at the conflict management community is *Sahana* [<http://www.sahana.lk/>], a project originating in post-tsunami Sri Lanka, but aiming to grow into a global community of developers creating dedicated software for disaster and emergency management in the field. Although at an early stage in the process, Sahana is now working on Disaster Victim Registry and Camp Management database applications, which will be made available for free and be supported on a range of platforms, even in low-bandwidth situations. Another project deserving mention is *AidWorld* [<http://www.aidworld.org/>] a UK-based project to develop field solutions to connectivity problems for web browsing and email access; with input from the private sector, their first application LoBand is available for testing. Undoubtedly there will be many more Open Source projects in future, to

complement and compete with the offerings of the private sector; while the former will be able to provide useful general tools based on open standards, the latter will still be better equipped to work with individual organizations to meet specific needs.

5. Post-Conflict Reconstruction

As a conflict stabilizes, and basic human needs are met, attention turns to the more complex processes of reconstruction. Basic security is a prerequisite for successful reconstruction, although it is often difficult to draw a distinction between conflict and post-conflict phases – the two states may co-exist in different parts of the same country. Without basic security, it can be difficult to promote social reconciliation, establish the rule of law or a government capable of providing services, and encourage economic activity. These reconstruction processes must also be carefully planned and implemented to avoid generating new sources of tension – for instance, through inequitable distribution of resources, or political processes that do not enjoy popular support. As well as physical reconstruction, social reconstruction must also take place; reconciliation requires dealing with the legacies of conflict without creating instabilities that might cause new conflicts. Reliable information dissemination may allow the reconstruction and reconciliation to avoid such pitfalls.

Post-conflict reconstruction is a challenge to the international community, particularly when combined with a nation-building mandate, such as in East Timor. One key factor is that media and donor interest frequently decrease once a conflict is over, leading to fewer resources being available when they are perhaps most needed. It is hard to point to unqualified successes in reconstruction efforts, particularly where those efforts are led by the international community rather than by a national government. In some cases, reconstruction does take place, but in many places the best that is achieved is the avoidance of further conflict. The record is mixed - despite international commitments in troop commitments, financial contributions and political support, despite the efforts of many thousands of organizations and individuals from around the world, and despite the increasing analytical sophistication, accumulated experience, lessons learned and local knowledge.³²

³² For critical evaluations of the record and lessons learned in political and economic development, including in post-conflict reconstructions, see, Thomas Carothers, *Aiding Democracy Abroad: The Learning Curve* (Washington DC: The Carnegie Endowment for International Peace, 1999); and William Easterly, *The Elusive Quest for Growth: Economists' Adventures and Misadventures in the Tropics* (Cambridge, MA: The MIT Press, 2002), respectively.

A major barrier exists in that reconstruction by the more recent definition – i.e. moving beyond simply rebuilding infrastructure such as schools and hospitals – includes a wide range of different sectors and organizations. Curriculum development for the education system requires a vastly different approach than ensuring an independent and competent judiciary; the process of clarifying and establishing property rights does not use the same set of skills as building sewer systems for urban areas. Most experts agree that post-conflict reconstruction requires a more coherent approach if it is to succeed – although they do not agree on exactly what that approach should be.

ICT has the potential to enhance post-conflict reconstruction processes, although that potential has barely been tapped. As one observer concludes, “given the morass of issues that weigh upon societies enmeshed in conflict, ICT interventions can have more impact when used for peace building after a ceasefire agreement or peace agreement, when the dynamics on the ground are relatively more receptive on the need for sharing information, collaborating, appropriating technology and development mechanisms (both physical and virtual) for communities and peoples to deal with conflict creatively and non-violently.”³³ For example, effective communications can disseminate the terms of a cease-fire agreement to warring factions and local communities, clarifying the situation and building support; or to raise awareness of war crimes tribunals or truth commissions, increasing common understanding of the processes necessary to support the rule of law.

ICT should also be a focus for reconstruction, since basic ICT is essential for the management of a modern state. This becomes clearer when we examine how technology functions in failed states. In Somalia, state failure and the accompanying lack of regulatory systems has enabled the creation of one of Africa’s most extensive and resilient cellular telephone systems, accompanied by numerous satellite-based internet access points. The problem now is that none of the numerous telephone networks are compatible, meaning that many Somalis carry multiple handsets – one for each network – and as a result this infrastructure is not adequate to build the national network necessary for sustainable telecommunications development. This also illustrates how ICT4Development is also relevant here, since reconstruction, if successful, should quickly give way to longer-term development that places decision-making in the hands of local authorities and civil society organizations.

³³ Sanjana Hattotuwa , *Untying the Gordian Knot: ICT for Conflict Transformation and Peacebuilding*, (June 2004), p. 11. [www.info-share.org/content/docs/untying_the_gordian_knot.doc]

In the political sphere, the *International Institute for Democracy and Electoral Assistance (IDEA)* [<http://www.idea.int/>] is an international organization that assists countries build their capacity to develop and strengthen democratic institutions; provides a forum for dialogue between academics, policy-makers and practitioners; blends research and field experience to develop practical tools aiding democratic processes; promotes transparency, accountability and efficiency in election management; and facilitates in-country democracy assessment, monitoring and promotion by local citizens. It has an active program focusing on conflict management and peace building for democratic transitions that includes ICT components, most notably in the form of Internet-supported dialogue and information/knowledge exchange on such subjects as constitution building, legislative processes, civil society empowerment, etc.

The *National Democratic Institute for International Affairs (NDI)* [<http://www.ndi.org/>] is a nonprofit organization working to strengthen and expand democracy worldwide. NDI works with democrats in every region of the world, including in conflict and post-conflict zones, to build political and civic organizations, safeguard elections, and to promote citizen participation, openness and accountability in government. Increasingly, NDI has been implementing programs with strong ICT components. Examples include developing legislative tracking systems and interactive websites for parliaments or NGO partners; creating Internet-connected parliamentary research and training centers; providing ICT strategic planning and infrastructure rollout assistance to partner institutions; building databases to support election observation missions and to forecast election results; and constructing general network and communications systems in the local government, legislative and civil society areas. NDI also makes extensive use of the Internet to support its efforts. For example, it has established web-based collaborative networks and on-line databases of democratic development material, such as its Access Democracy database, which offers a library of materials and links to democracy partners around the world. The Institute's e-programs pay particular attention to the need for sustainability by building systems and then training local organizations' staff to maintain them and the public to use them.

An example of innovative thinking applying ICT to reconstruction is the *Government Out of a Box (GooB)* initiative [http://www.cmi.fi/?content=cpcr_programme]. This concept, currently in the development phase, is "a concept for a ready-made public administration and management ICT based toolset for the purposes of state-building. The idea is to give a new national government an infrastructure to build a local civil service quickly, hence creating national ownership and a local capacity for

delivering services. The GooB-concept is aimed to support the existing international state-building efforts by involving local administrations early on and building their capacity to handle basic administrative things, such as citizens registers, financial flows, etc". The concept originated with Michael von der Schulenburg (the former director of management at OSCE) and is being reviewed by a coalition convened by CMI.

GooB seeks to address the problem of failed local and national government capacity, particularly the loss or absence of basic administrative areas such as land registries, tax records, central bank finances, and so forth. This not only impedes the administrative progress of reconstruction, but can also engender further social conflict due to competing claims regarding property, debts, and the like. The GooB concept seeks to mitigate these potential problems by using a standardized but customizable technology and management tool kit that can be quickly deployed. The kit would comprise networks and software services and operational procedures for the computerization and secure storage of databases and other public records for post-conflict retrieval and use. While the track record of e-government projects in many developing and transitional countries is decidedly mixed, particularly with respect to the citizen-government interface, the GooB model could provide a foundation for at least the baseline restoration of core governmental information resources. A study of the feasibility of the model's potential applicability in various post-conflict environments is now underway.

In some cases, governments are themselves able to take on full responsibility for reconstruction, with minimal intervention by the international community. Although it was set up to deal with the aftermath of the Asian tsunami, the *e-Aceh* portal [<http://www.e-aceh.org/>] set up by the Indonesian government to allow donor agencies to coordinate and report their activities is a good example of a government taking full responsibility for reconstruction; it will be interesting to see how this coordination effort converges with the requirements of post-conflict reconstruction following the signing of a peace agreement in Aceh in August 2005.

a. The Role of the Media

The international community can help to prevent conflict and assist communities to recover through building local capacity in broadcast and print media, and introducing new media, in order to produce and distribute objective and accurate local content. Radio broadcasting is particularly important in many developing and transitional countries where literacy levels and access to other media are often very limited. Independent media can be a very risky affair in conflict zones, and local journalists and editors are often

harassed or even killed. Hence, in addition to providing technology, funding, and training, international actors may need to promote the independence of the media and emphasize the negative consequences of government attacks on the media.

UNESCO [<http://www.unesco.org>] has long supported the development of local independent film, radio, television, and internet-based media in developing and transitional countries, including in conflict and post-conflict areas. UNESCO's extensive work program includes sponsoring research and knowledge-sharing conferences, defining best practices, offering in-field professional training and financial and operations support, working with governments on the establishment of enabling regulatory and policy environments. For example, its International Programme for the Development of Communication promotes capacity building for electronic and print; the Programme for Community Multimedia Centers combines support for traditional community broadcasting and telecenter facilities, and develops training materials in close cooperation with key stakeholders. UNESCO also supports the development of editorially independent national public broadcasting services, and international, regional and national news collection and distribution institutions. Beyond media development, it has employed innovative techniques in conflict zones; for example, funding NGOs in Afghanistan to create traveling cinemas that move from village to village to present educational and health information.

The *BBC Afghan Education Projects (BBC AEP)* [http://www.bbc.co.uk/worldservice/trust/projectsindepth/story/2003/09/030904_aep.shtml] aims to contribute to reconciliation among different groups and raise awareness of HIV/AIDS to avoid an epidemic in post-conflict Afghanistan. BBC AEP produces programs including these themes in many (mainly radio) formats: drama, soap opera, educational features and cartoon magazine, and reaches roughly 50% of all Afghans. BBC AEP is part of the BBC World Service Trust, a non-profit organization within the BBC World Service. It is currently part of the South Asia Division of the Swiss Agency for Development and Cooperation (SDC). The SDC also supports the *Young Asia Television (YATV) 'Beyond the No War Zone'* [<http://www.yatv.net/nowarzone.php>] television series in Sri Lanka. This series aims to create an information-sharing forum between ethnic groups, and promote peace after the 2002 ceasefire agreement.

NGOs are also very active in media development. *AllAfrica Global Media* [<http://allafrica.com/>] is a multimedia content service provider, systems technology developer, and the largest electronic distributor of African news and information worldwide. It has content agreements with over 130 African

news organizations and aggregates, produces and distributes news to tens of millions of end users. The website posts over 1000 stories daily in English and French and offers multilingual programming as well as over 900,000 articles in a searchable archive.

Foundation Hironnelle [<http://www.hironnelle.org/>] is an organization of journalists that sets up and operates local language radio stations and news agencies in crisis or post-conflict areas. Its objective is to promote tolerant and democratic societies characterized by the responsible, civic-minded exchange of opinions. The Foundation seeks to transfer skills, build capacities, and ensure security so that locally staffed independent media organizations can take root and assume full responsibility for the operations. To this end, it develops budgets and trains journalists, technicians and management, paying particular attention to administration, management, marketing, publicity and human resources. Some of its projects have included Radio Agatashya in the African Great Lakes region, Star Radio in Liberia, the Hironnelle News Agency at the International Criminal Tribunal for Rwanda in Tanzania, and Moris Hamutuk, a radio program for refugees in Timor.

Intermédia Consultants [<http://www.intermedia-consultants.ch/>] is a study group and think tank based in Senegal, supported by the Swiss government and the Agence Intergouvernementale de la Francophonie. Drawing on an international network of experts, the group helps to build rural and community radio stations and trains journalists, station managers, and technicians. It also organizes workshops and conferences on development and conflict management issues. The goal is to promote "peace journalism" and overcome "hatred journalism" that employs sensationalist propaganda to promote social divisions.

This is a growing field of interest which it is impossible to cover here. A few other interesting projects might include: the *Réseau de Partenaires des Médias Africains* [<http://www.gret.org/mediapartner/index.htm>], a network supporting independent media in Africa; *SOS-Burundi* [<http://www.sos-burundi.org/>], a peace-oriented news service; the *Burundi Youth Council* [<http://www.burundiyouth.com/>], offering news reports and publications and fosters on-line multi-ethnic dialogue;³⁴ the *Association de Réflexion et*

³⁴ Rose M. Kadende-Kaiser, *The Internet's Mediation Potential in Protracted Conflicts: The Case of Burundi*, in, Robert Latham, ed., *Bombs and Bandwidth: The Emerging Relationship between Information Technology and Security* (New York: The New Press, 2003), pp. 268-278. Equally interesting is the case of the Revolutionary Association of the Women of Afghanistan [formerly at www.rawa.org], a Pakistan-based web site geared toward raising awareness and mustering support among global civil society for women who challenged Taliban

d'Information sur le Burundi [<http://www.arib.info/>] which maintains up-to-date information about the government of Burundi and online articles discussing the situation; and the *Conseil pour la Paix dans la Région des Grands Lacs Africains (CPRGLA)* [<http://www.chez.com/cprgla>], an NGO that offers news and views on the current environment and peace building efforts. Also of interest is the growing role of community media centers, such as the *Center for Media, Education, and Technology* [<http://www.cmetfreetown.org/>] in Sierra Leone.

International Media Support (IMS) [www.i-m-s.dk/] seeks to promote peace, stability and democracy in conflict zones and threatened areas by fostering the development of independent media. To these ends, IMS works in collaboration with local partners to strengthen press freedom and professional journalism and to improve the working conditions of local journalists and media practitioners. It also organizes international conferences, has published two handbooks on Conflict Sensitive Journalism and Media & Elections, and is developing tools and methods pertaining to conflict reporting, emergency assistance and the relationship between media development, peacekeeping and humanitarian aid. In a similar vein, the *Institute for War and Peace Reporting (IWPR)* [<http://www.iwpr.net/>] works to strengthen local journalism in conflict areas by training reporters, facilitating dialogue, and providing reliable information. The field offices build local networks, engage in extensive training and editing, and host practical workshops and discussion sessions. IWPR's approach is adapted to each country's local conditions, and it has major programs in a range of countries.

The programs mentioned above can make important contributions to short-term de-escalation and long-term peace building. Supporting sustainable communication across social and geographic divisions should be integral components of both conflict prevention and post-conflict reconstruction. This sector seems to be an arena ripe for greater information sharing among project managers themselves, with many disparate initiatives underway with similar strategies and objectives that could benefit from opportunities share their experience and exchange lessons learned.

b. Reconciliation Processes

orthodoxy. See, Michael Dartnell, *Information Technology and the Web Activism of the Revolutionary Association of the Women of Afghanistan (RAWA) – Electronic Politics and New Global Conflict*, (in, Robert Latham, ed., *Bombs and Bandwidth*, 2003), pp. 251-267.

Information is a key factor in conflicts around the world, as it has been throughout history. Many examples come readily to mind; Somali militias displaying the remains of American soldiers for the cameras; Hutu extremists promoting anti-Tutsi sentiment on Radio Mille Collines; radical Islamists using the Internet and the mass media as a tool for terror, both to deliver their message and to recruit new supporters. Conversely, groups promoting peace can use communication to challenge aggression and promote social reconciliation. Once violence has erupted, it can be difficult to get people to focus on dialogue and mutual understanding; nevertheless, information operations intended to promote reconciliation are relevant in all stages of the conflict cycle.

Information campaigns to promote reconciliation can take many forms. ICT can be used to influence political leaders and audiences at an international level. Influencing political elites is vital, since it is such groups that usually generate and sustain organized violence; tactics to influence them may include political or financial incentives; and political and military deterrents; however, ICT can also be used to promote information exchange and dialogue between local communities. Rather than seeking to promote a solution from outside, the goal is simply to create space for collective problem solving between the protagonists. Local exchanges can be supplemented by linking people to people, both in country and in Diaspora populations. Sometimes this must be done with the acquiescence of local political elites; at other times it must bypass those elites and speak directly to the communities involved.

Examples can be drawn from the experience of the Geneva-based *War Torn Societies Project (WSP)* [<http://www.wsp-international.org/>], which seeks to promote reconciliation and social integration among populations in crisis zones. The project has developed a Participatory Action Research methodology to analyze and build consensus solutions to policy problems in various domains and build societies' capacities for collective problem-solving in tense post-conflict situations. WSP currently operates in Latin America, Africa, Israel / Palestine and nurtures locally initiated "second-generation" programs in Guatemala, Mozambique, Puntland and Somaliland.

In an early ICT4Peace meeting, WSP field staff described how they employ audio-visual tools to promote reconciliation. In Somaliland, for example, villagers were shown videos of elders from other clans talking about daily problems that are common to all communities, providing non-political messages from a respected source that humanize both sides. In addition, digital photographs of rival communities and missing relatives or political prisoners were shared. Similarly, in Israel and the Palestinian Territories, videos have been shown to communities demonstrating that both sides have

people who suffer similar frustrations and desire peace. In Sierra Leone, video clips of rebels saying they wanted to negotiate an end to conflict were shown in opposing villages and placed on websites for the Sierra Leonean Diaspora to see. In Rwanda, video allowed Hutus and Tutsi to discuss the genocide and its aftermath in a more comfortable setting.

This approach to reconciliation can also be developed for mass media. In the former Yugoslavia, the *Video Letters* [<http://www.videoletters.net/>] documentary series appears to have had an impact on public consciousness. Almost all the public broadcasters in the region have shown the series' messages from former friends, colleagues and neighbors who have been separated and traumatized by the wars. Although it is difficult to measure the success of such initiatives, it has clearly been well-received, and is reflected in other locations, such as plans by North and South Korea to build a network linking the two countries so that families by war can be reunited via video.

The World Wide Web also offers a home for reconciliation initiatives, such as the *Gurtong Peace Project* [<http://www.gurtong.org/>], a Swiss-funded NGO initiative to establish a coalition for peace among South Sudanese at home and abroad. The project's website provides information about Sudanese developments and relevant meetings and resources. It also provides an e-forum intended to facilitate and encourage constructive discussions on the full range of issues, bridge the gap between different cultures, and link the members of the Diaspora.

The international community also needs to explain its own actions, particularly where a military and/or civilian intervention takes place, and particularly where its presence might be manipulated by local leaders. Here the record is mixed; while United Nations public information campaigns have been successful in places such as Cambodia and Namibia, weak strategies, inadequate resources, and lack of organizational support produced less satisfactory results in Kosovo and elsewhere.³⁵ The Brahimi Report on peace keeping to the UN Secretary General called for additional resources and personnel to be mustered in the context of a comprehensive approach to UN information operations.³⁶

³⁵ For critical assessments of UN public information campaigns in conflict zones, see, Ingrid A. Lehmann, *Peacekeeping and Public Information: Caught in the Crossfire* (London: Frank Cass, 1999); and Monroe E. Price and Mark Thompson, eds., *Forging Peace: Intervention, Human Rights and the Management of Media Space* (Bloomington, IN: Indiana University Press, 2002).

³⁶ See, Lakhdar Brahimi, et. al, *Report of the Panel on United Nations Peace Operations, A/55/305-S/2000/809* (New York: United Nations General Assembly, August 21, 2000), p. 26. [www.un.org/documents/ga/docs/55/a55305.pdf].

ICT can also expand the range of options available to governments and international organizations for preventive diplomacy.³⁷ Going beyond formal diplomatic efforts, ICT can advance the pursuit of unofficial initiatives (sometimes known as “Track II” diplomacy), which encompass many kinds of involvement aiming to resolve a conflict or lessen its impact. Civil society actors – including NGOs, the media and concerned private sector organizations can – use ICT at the national and international level to reach out both to elites and communities, to reinforce the messages provided by “Track I” diplomacy, or to offer their own messages.³⁸ Given the suspicion with which people in conflict zones often place on information emanating from the international community, Track II efforts, particularly by locally-based organizations, may prove more effective in challenging violence.

While traditional interstate mediation at conferences remains a key component in the conflict prevention/management toolkit, ICT helps non-state actors (such as NGOs and the media) to steer dialogue that supports traditional interstate efforts.³⁹ Another NGO that seeks to transform the way people deal with conflict by encouraging collaborative problem solving is *Search for Common Ground* [<http://www.sfcg.org/>]. It is currently working in 16 developing and transitional countries and uses the mediums of radio, TV, film and print, as well as mediation and facilitation, training, community

³⁷ Preventive diplomacy is defined as action “taken in vulnerable places and times to avoid the threat or use of armed force and related forms of coercion by states or groups to settle the political disputes that can arise from the destabilizing effects of economic, social, political, and international change.” Michael S. Lund, *Preventing Violent Conflicts: A Strategy for Preventive Diplomacy* (Washington DC: United States Institute of Peace Press, 1996), p. 37.

³⁸ On the NGO role, see, Francis Kofi Abiew and Tom Keating, “Defining a Role for Civil Society: Humanitarian NGOs and Peacebuilding Operations,” in, Tom Keating and W. Andy Knight, eds., *Building Sustainable Peace* (Alberta and Tokyo: The University of Alberta Press and the United Nations University Press, 2004), pp. 93-117. On the private sector’s possible role, Andreas Wenger and Daniel Mockli, *Conflict Prevention: The Untapped Potential of the Business Sector*, 2003 and Karolien Bais and Mijnd Huijser, *The Profit of Peace: Corporate Responsibility in Conflict Regions*, (Greenleaf Publishing, July 2005).

³⁹ On the traditional interstate approach, see, Chester A. Crocker, Fen Osler Hampson, and Pamela Aall, *Multiparty Mediation and the Conflict Cycle*, in, Chester A. Crocker, Fen Osler Hampson, and Pamela Aall, eds., *Herding Cats: Multiparty Mediation in a Complex World* (Washington DC: United States Institute for Peace, 1999), pp. 19-45. On the need for more holistic, multi-level mediation, see, John Paul Lederach, *Building Peace: Sustainable Reconciliation in Divided Societies* (Washington DC: United States Institute for Peace, 1997).

organizing, sports, drama and music to help people in conflict understand their differences and build on their commonalities.

Experimental uses of collaboration software can offer new approaches to mediation, as in the case of *InfoShare* [<http://www.info-share.org/>]. Based in Sri Lanka, this NGO platform uses the Groove Virtual Office software application to develop customized “Peace Tools” – adjustable analytical and management systems for conflict transformation and peace building in the Sri Lankan context. These interactive tools allow users to undertake standardized assessments based on internationally accepted human development indicators, establish active and open source knowledge banks, disseminate training materials and conflict transformation and reconstruction approaches and case studies, build reconstruction networks between the various institutions and organizations, coordinate on logistics, and so on.

III. CONCLUSIONS

The overview provided by this report, while not exhaustive, should provide an impression of the range and scale of activities that can be labeled as ICT4Peace. Obviously there is a risk inherent in grouping such diverse activities together, when many of the actors described above might feel that they have very little in common with the others we have included. This is understandable, and in many cases is justifiable, since these organizations have very limited (if any) contact with each other, particularly across sectoral boundaries.

We must acknowledge the large differences between a conflict mediation exercise by international diplomats, and refugee camp management carried out by a national NGO. While both are clearly wrestling with issues relating to conflict – and working towards peace – they have very different mandates, interests and constraints operating on them. In the context of this report, however, these differences can be seen as symptomatic of the lack of communication between these organizations – indicating a need for more work in generating a separate identity for ICT4Peace, in the same way that ICT4Development has become a recognized subject with which many diverse organizations now voluntarily associate themselves with, even where there is no immediate benefit to their work.

One challenge faced by the sector is identifying areas of common interest for these organizations, and working out ways to work together to address common issues and build common platforms. Links between different sub-sectors need to be encouraged, and external actors – such as the media or private sector organizations – should be engaged. This networking will create new opportunities for innovation and growth, and quite possibly lead us in directions that we have not yet envisaged.

However, in all these processes, the core issues raised by this paper should be kept in mind at all times. These include basic problems around the digital divide – lack of infrastructure, lack of access, poor regulatory frameworks – as well as issues perhaps more specific to conflict situations, such as the need for higher levels of confidentiality and security. There are technical issues, such as the question of data standards and interoperability of communications systems, and policy issues such as the perception of neutrality and impartiality. In this conclusion, we touch on a few of these issues.

During the ICT4P consultations in 2004-5, participants frequently complained about the inadequacy of existing coordination efforts, with the strongest

complaints coming from field-based staff. In particular they raised issues of security – in the broadest sense, involving trust, judgment, competence and willingness to share – as impediments to more effective coordination. These observations were in line with the views expressed in other meetings and conversations, including academic literature and policy papers on conflict management and humanitarian relief. More can be done to enhance the utility of existing information infrastructure, for example by simultaneously employing both distributed networks to provide an overall framework and centralized “common services” accessible to all actors. The biggest problems, however, are undoubtedly organizational rather than technological.

There are a number of obstacles that must be overcome if organisations are to work together and collectively manage information resources in a manner that optimises their capabilities and responses. The first is the “digital divide” – the global disparities in access to and use of ICT. Complex emergencies frequently occur in places lacking the communication infrastructure needed for inter-organizational communication. Often, public switched telephone networks (PSTN) are not fully deployed on a nationwide basis, and levels of teledensity (the ratio of telephone lines per 100 inhabitants) are staggeringly low. For example, according to the International Telecommunication Union (ITU), in 2003 teledensity for the Democratic Republic of Congo and Afghanistan were 0.038 and 0.18 respectively, while for the United States and Switzerland they were 62.13 and 73.27 respectively.⁴⁰ Cellular telephone networks have experienced rapid growth in recent years, jumping ahead of fixed line telephone deployment (notably in Africa), but costs are often high and access is limited in rural areas. Internet access via both public telecommunications operators and independent Internet service providers (ISPs) is correspondingly limited, normally to urban areas. This is due not only to general economic and technological conditions, but also to poor policy decisions, e.g. the high charges and restrictive regulations imposed by the dominant operators on independent ISPs and users.

To overcome these constraints, many international organizations import their own communication technologies, or secure services from specialist organizations. Such measures have a limited utility, mainly during the immediate emergency phase, not just because of logistic constraints, but also because of resistance from local elites seeking to protect the revenues of politically connected national operators or legitimate government concerns over regulating communications.

⁴⁰ International Telecommunication Union, *Teledensity Main Telephone Lines per 100 Inhabitants* [http://www.itu.int/itudoc/itudoc/com3/focus/72404_v7.xls]

There also are often significant asymmetries between organizations in terms of their ICT resources, both technological and human, most acutely felt between civilian and military actors, headquarters and field levels, and international and local organizations. For example, headquarters often maintain heavy web sites and systems that assume that users have reliable and high bandwidth internet connectivity – which staff in the field frequently lacks.

Interoperability is the second obstacle to communication and coordination. In technical terms, hardware and software need to be based on common technical standards in order to be connected; organizations, however, procure proprietary technology from different vendors that are not interoperable. Data needs to be in common formats so that it can be shared between organizations; organizations, however, tend to become very attached to their own formats and are unwilling to change in order to share with others. In policy terms, information sharing is often not considered a priority, and systems are not put into place to ensure that staff has guidelines to help them decide when and how to share information. Information is power, and organizations may be loath to share it if by so doing they could weaken their credibility or influence. This is especially problematic when organizations are in competition for financial or political support.

ICT managers have strong incentives to build their own internal information infrastructures, and much weaker incentives to focus on inter-organizational sharing. In the absence of frameworks that significantly alter these incentive structures, the tendency is towards self-contained ICT profiles. A study of ICT usage in the United Nations Mission in Kosovo concluded that each of the organizations involved, “refused to share costly assets and resources, which in turn inhibited their ability to interact as a network... [Their] focus on using ICTs within their own organizations but not between them was not readily recognized, reflecting and reinforcing the low level of identification with the mission as a whole.”⁴¹

The third obstacle is the question of security. When considering whether to share sensitive information, individuals and organizations need to have confidence that this information will not be shared with any unauthorized bodies, whether through intent or negligence. These decisions are based on trust, and trust itself cannot be generated by technology – only by individual actors on the ground, acting in good faith. Obviously this is particularly

⁴¹ Anne Holohan, *Cooperation and Coordination in an International Intervention: The Use of Information and Communication Technologies in Kosovo, Information Technologies and International Development*, 1 (Fall 2003), p. 27.

difficult in a conflict setting, and may appear to be impossible between actors with differing interests – such as between civilian and military actors. Inaccurate or misleading information can have serious consequences during a conflict, and even basic issues around quality of information can make people feel that sharing that information poses an unnecessary risk to their own credibility or security.

However it has been demonstrated that it is possible to build these relationships, and ICTs can play a key role in facilitating trust relationships. Improved analytical capacity can improve the accuracy and reliability of information, and improved technical capacity – in areas such as encryption – can strengthen the mechanisms for sharing that information. These technical solutions have their limits, and in some cases technology itself can lead to insecurity, such as we have found when NGOs in some parts of Afghanistan have become targets for aggression simply because their vehicles carry basic radio equipment. This reinforces the need for a systems approach to ICTs, looking not just at the technology, but also the human resources and institutional frameworks for using that technology.

All of these issues must be addressed in a transparent and open manner, in a framework of trust between the different stakeholders – otherwise there can be no real progress. One basis for building this trust is to bear in mind that, in all cases, technology is a means to an end – and not an end in itself. An example of a key issue that all organizations in the field share is the security of staff working on the ground, and it is around issues like this that co-operation should be built. Organizations working towards the same end goal – broadly speaking, to minimize human suffering, and enable people and communities to live with dignity – should be able to overcome institutional barriers to improve effectiveness and efficiency through leveraging ICTs to support their work.

This overview demonstrates that, while there are significant overlaps (particularly during post-conflict reconstruction), ICT4Peace is a recognizably separate (although complementary) sector from ICT4Development. ICT4Peace can learn much from the ICT4Development sector; in turn, ICT4Development actors should be able to gain new insights into their work on conflict-related issues. However ICT4Peace is less advanced and consequently receives less attention and fewer resources. WSIS Phase 2 is a fitting platform for raising these issues, and to offer a new perspective to the broader information society. It is our hope that this report will be the starting point for further research and further development of key ideas. With this in mind, this report presents a series of recommendations for consideration by

stakeholders at WSIS Phase 2, and a wider audience with an interest in these issues.

IV. RECOMMENDATIONS

The primary objectives of this report have been to raise awareness among non-specialists about the range of issues and activities underway; to suggest that these are sufficiently interrelated to constitute a sector that can be called ICT4Peace; and to contribute to the development of dialogue and networking around this important policy area. These objectives, worthwhile in themselves, are only the starting point; we can also identify some recommendations on next steps for the international community. This list builds on the topics raised in the report, as well as the various dialogues with stakeholders held in the course of the ICT4Peace project.

ICT4Peace in the Information Society

1. *Mainstream ICT4Peace into broader Information Society dialogues and processes.* ICT4Peace has not been a recognized theme in the WSIS dialogue over the past four years. Specific ICT4Peace issues have been addressed by relevant specialized agencies – e.g. the ITU’s leading role in the Tampere Convention – but ICT4Peace has not featured in broader discussions about the information society. The time is right to begin building bridges to strengthen both sides, especially with respect to linkages between ICT4Peace and ICT4D. ICT4D programs that pay greater attention to conflict would not only be more successful in their own terms, but would contribute to more effective prevention and post-conflict reconstruction. The Tunis Summit should take note of the growing importance of ICT4Peace, and consider which related issues might be incorporated into WSIS follow-up activities.
2. *Create an inclusive multi-stakeholder mechanism to promote ongoing dialogue and collective learning on ICT4Peace issues.* Significant ICT4Peace activities are underway, but they are fragmented; opportunities to promote more effective knowledge sharing, development of standards and best practices, and coordination of organizational initiatives are being missed. Without a framework for dialogue, actors are less likely to see themselves as working in the ICT4Peace community, or to recognize the potential benefits of connecting with counterparts in other specialized sub-sectors. There are a range of options that could rectify this situation, and not all of them require significant resources or political sensitivity. One example might be the global alliance model, such as has been employed for the Global AIDS Alliance; a similar alliance is currently being considered to address ICT4D policy issues. With a light secretariat, modest budget, multistakeholder participation,

and flexible working methods, the model can provide a framework for collaboration between organizations without binding agreements and resource commitments. Such a mechanism could provide a forum for the vital task of prioritizing key areas within ICT4Peace for further attention, whether research, investment or discussion.

The Role of the UN in ICT4Peace

3. *Develop mechanisms within the UN Secretariat and wider UN system for the effective management of ICT for both relief and peacekeeping operations.* Despite the scale and complexity of its ICT operations, the UN has not put in place structures and personnel for the strategic management of ICT. For example, the Brahimi Report noted that, “The Secretary-General and the members of ECPS [Executive Committee on Peace and Security] need a professional system in the Secretariat for accumulating knowledge about conflict situations, distributing that knowledge efficiently to a wide user base, generating policy analyses and formulating long-term strategies”.⁴² Even below the policy level, there has been little progress in basic mechanisms, such as joint procurement of ICT equipment (in order to lower costs, but also to ensure interoperability of equipment between agencies in the field). In light of current moves towards reform, the time is right for the UN to take a clear lead, recognizing the central role that ICT plays in its operations, both for the UN system and its many partners.

4. *Ensure that relevant UN agencies have the mandate and resources to carry out ICT4Peace initiatives.* The UN is uniquely placed in the international system to provide common services that make ICT capacities and capabilities available as widely as needed, as well as overarching frameworks for facilitating policy dialogue, knowledge management, operational and policy level coordination, and so forth. A stronger political mandate and a corresponding increase in financial support will be required if the UN system is to realize its leading role in

⁴² Lakhdar Brahimi et al, *Report of the Panel on United Nations Peace Operations*, (2000), pp.12&40. The Report argues that the EISAS should have a Chief Information Officer and should be the system-wide lead for information gathering, analysis, knowledge management, and strategic planning with respect to intra-organisational uses of ICT and public information campaigns in conflict zones. Further, it would manage an electronic data clearing house; ensure the integration and standardization of databases and related resources; support the development of peace operations capabilities in the UN Intranet and an extranet; and draw on the best available expertise inside and outside the UN system to devise plans and programs attuned to the specific conditions on the ground in different complex emergencies.

ICT4Peace, implement projects that increase the international community's efficiency and effectiveness in managing armed conflicts.

Learning Processes in ICT4Peace

5. *Follow participatory design principles and promote staff awareness.* Organisations cannot fully realize the benefits of ICT unless staff is actively involved in implementing it within the organisation. System design must be based on user needs; any ICT project developed without this basis will result in inappropriate technologies that staff will not support. Systems and applications should be developed through a process of participatory design, defined as “the assessment, design, and development of technological and organisational systems that places a premium on the active involvement of workplace practitioners (usually potential or current users of the system) in design and decision-making processes.”⁴³ Awareness raising, training and collaborative problem solving can also help staff think creatively about how these assets can enhance their own work. This approach should be extended to all staff within an organisation, particularly local staff; where local staff will be users, and eventually managers, their engagement in the design process is essential.

6. *Identify and disseminate best practices in ICT4Peace, ensuring that standards-based interoperability is a guiding principle for ICT implementation.* Establishing technical and professional standards is essential to maximize the effectiveness of ICT4Peace initiatives. Standardization initiatives like CREATE, SHARE and GLIDE provide the basis for interoperability, but more work is needed to engage stakeholders in the development and implementation of standards. To overcome the difficulties of proprietary technologies, greater focus on open source solutions may prove helpful. In designing standards, a balance must be struck between accessibility and ease of use, on the one hand, and security, on the other. Particular care must be taken to develop a framework that enables inter-organisation communication without compromising intra-organisation security. Web-based collaboration would be the perfect way to build communities around such standards, and to promote their implementation and further development.

7. *Develop tools to evaluate the impact of ICT-based projects in conflict and post-conflict environments.* Although organisations may undertake

⁴³ See Computer Professionals for Social Responsibility (CPSR) *Participatory Design* <http://www.cpsr.org/issues/pd/>.

internal evaluations, there are no agreed methodologies for assessing the impact of ICT-based projects. Counting the number of web page hits, for example, is not an indicator for whether information is reaching the right audience, and less still an indication of whether this affects their decisions. In order to increase the impact of and build support for ICT-based projects, stakeholders should develop common methodologies and metrics. There are a number of possibilities that can be drawn from private-sector experience, but it is important to connect any such evaluation with the quality assurance initiatives (such as the SPHERE Project, Groupe-URD, the Humanitarian Accountability Project, etc) that already exist.

Improving Response in ICT4Peace

8. *Rapidly deploy ICT in the early stages of interventions.* Slow ICT deployment in the early stages of a crisis will affect the entire operation; to avoid this, ICT deployment should be well-planned, including pre-positioning ICT assets and agreeing logistics priorities for ICT equipment. It also includes ensuring that staff has the capability to use these assets effectively, which means investing in training (particularly for staff in the field) and awareness raising amongst decision-makers within response organisations. These plans also need to take into account future transitions to reconstruction, including an exit strategy that includes mechanisms for handing over technical capacity to local authorities and capacity building to ensure those authorities can use the technology.
9. *Institutionalize collaborative agreements and working relationships for ICT4Peace projects that can be swiftly mobilized at the onset of a crisis.* At the onset of a complex emergency there is routinely a scramble to mobilize and coordinate the many actors involved in an international response. While some actors and challenges vary from one crisis to the next, in most cases there are continuities that could be given greater institutional support through standing agreements and networking to increase the speed – and the effectiveness – of response.
10. *Mainstream ICT capabilities into all applicable programs on a priority basis and establish coherent but flexible plans for the management of ICT4Peace assets.* Many organisations do not attach high enough priority to the strategic management and use of ICT. There may be many reasons for this – limited mandates, competing objectives, budgetary limitations, organisational culture, and so on. While these considerations are understandable, ICT should no longer be viewed as a specialized and peripheral activity that can be handled by back-office staff. Instead, it

should be integrated fully into the strategic vision and modus operandi of any organisation working in complex emergencies, where information sharing is vital. Given the increasing capacity and declining cost of many relevant technologies, the resources required to use ICT to add value should not be a major deterrent; properly managed, even small investments can have substantial returns if there is a commitment to becoming a learning organisation.

11. *Make protection of public information resources a priority before and during humanitarian operations.* Armed conflicts sometimes result in the destruction of local and national government records needed for basic administration and subsequent reconstruction. Loss of information pertaining to property rights, tax payments and similar resources can create new focal points for social and economic conflicts. In some cases, this information cannot be recompiled; in others, it can only be reconstructed through lengthy and complex procedures. The international community should develop programs to ensure that these resources are protected – possibly through external storage, or through creating capacity in-country – and to enable post-conflict governments to rebuild the information infrastructure they require.
12. *Expand support for the development of independent mass media and access to a diverse range of information systems.* These requirements are fundamental to conflict prevention and resolution, peace building, and post-conflict reconstruction. Building the capacity of local actors is essential in this regard; this should extend beyond traditional broadcast, and print media to include support for independent and competitive internet service providers, the creation of community telecenters, and clear regulatory regimes for radio frequency allocation and internet provision. Public information campaigns about international missions can remedy misconceptions about international objectives and activities, but these must be established in the early phases of the missions in order to be effective. The public needs to be engaged in a transparent manner to build trust and create support for policies; and international and local actors need to ensure consistency in their communications. This does not have to be a one-way process – communities exposed to conflict should have access to locally-owned information resources that enable them to make informed decisions. These resources might include community-based telecentres, to ensure communications even during times of insecurity when travel is impossible, or cell phone networks that can be used to transmit accurate messages between communities.

Building Partnerships for ICT4Peace

13. *Devise shared frameworks promoting trust and confidentiality in information sharing practices, particularly with respect to military forces.* This is an important problem that is routinely highlighted as a priority by practitioners; unfortunately, a clear solution seems a distant prospect. Everyone recognizes the benefits that would accrue from increased trust between different stakeholders, particularly in civil-military relations. However there are strong pressures that make parties reluctant to share information, and these cannot be ignored. Creative application of ICT can help somewhat, but this cannot effect real change simply from the aggregation of scattered efforts. An organized and ongoing dialogue could help, especially if supported by analysis of the incentives and disincentives at work and the proposal of alternative solutions.

14. *Foster people-to-people links, both within conflict zones and on a transnational basis.* Public information campaigns revolving around goal-directed messages from international actors and local counterparts are unlikely to succeed by themselves. To build mutual understanding, divided communities should be encouraged and enabled to engage each other directly in non-threatening settings. The initiatives mentioned above – using audio-visual technologies to allow people to voice their concerns and learn the concerns of others – are particularly worth building on. To date, these often have been undertaken as local experiments by innovative field staff without the benefit of coordination at the international level, with limited scope for sharing information and lessons learned. The same is largely true with respect to building transnational links within Diaspora populations in favor of peace; there have been many promising individual efforts, but no coordinated approaches. It would be helpful to create a space where experts and practitioners can evolve best practice guidelines and related tools, and to explore options for making people-to-people connections a more systematically utilized and supported component of information operations.

15. *Increase private sector participation in ICT4Peace.* There is growing recognition that more needs to be done to engage the private sector in supporting conflict prevention and management, and failure to leverage the business community's expertise and resources will be missed opportunity. This is particularly true in ICT, where technology companies have shown willingness to engage on pressing global issues. While some companies have established special initiatives to support ICT4Peace, the vast majority of firms and industry associations have yet

to follow suit. Design and procurement of systems is clearly an area where more dialogue would be very productive. Personnel responsible for system planning and purchasing often find it difficult to interest vendors in providing services and applications that meet their specific needs, since vendors prefer to provide off-the-shelf products designed for a broad market. In consequence, field staff is forced to devise ad hoc solutions to local problems that may reduce overall interoperability. Related problems arise when organisations become locked into long-term procurement contracts that make it difficult to move to new and more appropriate offerings from other suppliers, and when fragmentation on the demand-side of the market reduces organisations' individual abilities to negotiate attractive terms for pricing and support. Efforts in the UN system to coordinate procurement have born some fruit, but many organisations (such as NGOs) are unable to derive similar benefits. With these considerations in mind, it would be useful to establish a coherent dialogue with relevant firms about ways to meet the community's technology requirements while also providing the necessary incentives.

16. *Stimulate more research into ICT4Peace issues.* In a relatively short space of time, a large amount of literature has built up around ICT4Development issues, giving it a substantial theoretical framework and enabling improvements in the sector to take place. There is no corresponding body of knowledge around ICT4Peace, despite the large amount of activity outlined in this report. There is much existing expertise in research, policy and academic institutions that could be brought to bear on building the necessary resources for ICT4Peace in areas such as strategic analysis, policy development and recording case studies. Some of the key areas for study are clearly indicated in this report, and many institutions are now beginning this type of work, but it is at a very early stage and requires more funding, more publicity and a greater network of actors to build a research community to support the community of practice around ICT4Peace.

ANNEX 1: THE TAMPERE CONVENTION

Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations

- Article 1 – Definitions
- Article 2 – Coordination
- Article 3 – General Provisions
- Article 4 – Provision of Telecommunication Assistance
- Article 5 – Privileges, Immunities, and Facilities
- Article 6 – Termination of Assistance
- Article 7 – Payment or Reimbursement of Costs or Fees
- Article 8 – Telecommunication Assistance Information Inventory
- Article 9 – Regulatory Barriers
- Article 10 – Relationship to Other International Agreements
- Article 11 – Dispute Settlement
- Article 12 – Entry into Force
- Article 13 – Amendments
- Article 14 – Reservations
- Article 15 – Denunciation
- Article 16 – Depository
- Article 17 – Authentic Texts

THE STATES PARTIES TO THIS CONVENTION,

recognizing

that the magnitude, complexity, frequency and impact of disasters are increasing at a dramatic rate, with particularly severe consequences in developing countries,

recalling

that humanitarian relief and assistance agencies require reliable, flexible telecommunication resources to perform their vital tasks,

further recalling

the essential role of telecommunication resources in facilitating the safety of humanitarian relief and assistance personnel,

further recalling

the vital role of broadcasting in disseminating accurate disaster information to at-risk populations,

convinced

that the effective, timely deployment of telecommunication resources and that rapid, efficient, accurate and truthful information flows are essential to reducing loss of life, human suffering and damage to property and the environment caused by disasters,

concerned

about the impact of disasters on communication facilities and information flows,

aware

of the special needs of the disaster-prone least developed countries for technical assistance to develop telecommunication resources for disaster mitigation and relief operations,

reaffirming

the absolute priority accorded emergency life-saving communications in more than fifty international regulatory instruments, including the Constitution of the International Telecommunication Union,

noting

the history of international cooperation and coordination in disaster mitigation and relief, including the demonstrated life-saving role played by the timely deployment and use of telecommunication resources,

further noting

the Proceedings of the International Conference on Disaster Communications (Geneva, 1990), addressing the power of telecommunication systems in disaster recovery and response,

further noting

the urgent call found in the Tampere Declaration on Disaster Communications (Tampere, 1991) for reliable telecommunication systems for disaster mitigation and disaster relief operations, and for an international Convention on Disaster Communications to facilitate such systems,

further noting

United Nations General Assembly Resolution 44/236, designating 1990-2000 the International Decade for Natural Disaster Reduction, and Resolution 46/182, calling for strengthened international coordination of humanitarian emergency assistance,

further noting

the prominent role given to communication resources in the Yokohama Strategy and Plan of Action for a Safer World, adopted by the World Conference on Natural Disaster Reduction (Yokohama, 1994),

further noting

Resolution 7 of the World Telecommunication Development Conference (Buenos Aires, 1994), endorsed by Resolution 36 of the Plenipotentiary Conference of the International Telecommunication Union (Kyoto, 1994), urging governments to take all practical steps for facilitating the rapid deployment and the effective use of telecommunication equipment for disaster mitigation and relief operations by reducing and, where possible, removing regulatory barriers and strengthening cooperation among States,

further noting

Resolution 644 of the World Radiocommunication Conference (Geneva, 1997), urging governments to give their full support to the adoption of this Convention and to its national implementation,

further noting

Resolution 19 of the World Telecommunication Development Conference (Valletta, 1998), urging governments to continue their examination of this Convention with a view to considering giving their full support to its adoption,

further noting

United Nations General Assembly Resolution 51/194, encouraging the development of a transparent and timely procedure for implementing effective disaster relief coordination arrangements, and of ReliefWeb as the global information system for the dissemination of reliable and timely information on emergencies and natural disasters,

with reference

to the conclusions of the Working Group on Emergency Telecommunications regarding the critical role of telecommunications in disaster mitigation and relief,

supported

by the work of many States, United Nations entities, governmental, inter-governmental, and non-governmental organizations, humanitarian agencies, telecommunication equipment and service providers, media, universities and communication- and disaster-related organizations to improve and facilitate disaster-related communications,

desiring

to ensure the reliable, rapid availability of telecommunication resources for disaster mitigation and relief operations, and

further desiring

to facilitate international cooperation to mitigate the impact of disasters,

have agreed as follows:

Article 1 Definitions

Unless otherwise indicated by the context in which they are used, the terms set out below shall have the following meanings for the purposes of this Convention:

1. “State Party” means a State which has agreed to be bound by this Convention.
2. “Assisting State Party” means a State Party to this Convention providing telecommunication assistance pursuant hereto.
3. “Requesting State Party” means a State Party to this Convention requesting telecommunication assistance pursuant hereto.
4. “This Convention” means the Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations.
5. “The depositary” means the depositary for this Convention, as set forth in Article 16.
6. “Disaster” means a serious disruption of the functioning of society, posing a significant, widespread threat to human life, health, property or the environment, whether caused by accident, nature or human activity, and

whether developing suddenly or as the result of complex, long-term processes.

7. “Disaster mitigation” means measures designed to prevent, predict, prepare for, respond to, monitor and/or mitigate the impact of, disasters.

8. “Health hazard” means a sudden outbreak of infectious disease, such as an epidemic or pandemic, or other event posing a significant threat to human life or health, which has the potential for triggering a disaster.

9. “Natural hazard” means an event or process, such as an earthquake, fire, flood, wind, landslide, avalanche, cyclone, tsunami, insect infestation, drought or volcanic eruption, which has the potential for triggering a disaster.

10. “Non-governmental organization” means any organization, including private and corporate entities, other than a State or governmental or inter-governmental organization, concerned with disaster mitigation and relief and/or the provision of telecommunication resources for disaster mitigation and relief.

11. “Non-State entity” means any entity, other than a State, including non-governmental organizations and the Red Cross and Red Crescent Movement, concerned with disaster mitigation and relief and/or the provision of telecommunication resources for disaster mitigation and relief.

12. “Relief operations” means those activities designed to reduce loss of life, human suffering and damage to property and/or the environment caused by a disaster.

13. “Telecommunication assistance” means the provision of telecommunication resources or other resources or support intended to facilitate the use of telecommunication resources.

14. “Telecommunication resources” means personnel, equipment, materials, information, training, radio-frequency spectrum, network or transmission capacity or other resources necessary to telecommunications.

15. “Telecommunications” means any transmission, emission, or reception of signs, signals, writing, images, sounds or intelligence of any nature, by wire, radio, optical fibre or other electromagnetic system.

Article 2 **Coordination**

1. The United Nations Emergency Relief Coordinator shall be the operational coordinator for this Convention and shall execute the responsibilities of the operational coordinator identified in Articles 3, 4, 6, 7, 8, and 9.

2. The operational coordinator shall seek the cooperation of other appropriate United Nations agencies, particularly the International Telecommunication Union, to assist it in fulfilling the objectives of this Convention,

and, in particular, those responsibilities identified in Articles 8 and 9, and to provide necessary technical support, consistent with the purposes of those agencies.

3. The responsibilities of the operational coordinator under this Convention shall be limited to coordination activities of an international nature.

Article 3

General Provisions

1. The States Parties shall cooperate among themselves and with non-State entities and intergovernmental organizations, in accordance with the provisions of this Convention, to facilitate the use of telecommunication resources for disaster mitigation and relief.

2. Such use may include, but is not limited to:

- a) the deployment of terrestrial and satellite telecommunication equipment to predict, monitor and provide information concerning natural hazards, health hazards and disasters;
- b) the sharing of information about natural hazards, health hazards and disasters among the States Parties and with other States, non-State entities and intergovernmental organizations, and the dissemination of such information to the public, particularly to at-risk communities;
- c) the provision of prompt telecommunication assistance to mitigate the impact of a disaster; and
- d) the installation and operation of reliable, flexible telecommunication resources to be used by humanitarian relief and assistance organizations.

3. To facilitate such use, the States Parties may conclude additional multinational or bilateral agreements or arrangements.

4. The States Parties request the operational coordinator, in consultation with the International Telecommunication Union, the depositary, and other relevant United Nations entities and intergovernmental and non-governmental organizations, to use its best efforts, in accordance with the provisions of this Convention, to:

- a) develop, in consultation with the States Parties, model agreements that may be used to provide a foundation for multinational or bilateral agreements facilitating the provision of telecommunication resources for disaster mitigation and relief;
- b) make available model agreements, best practices and other relevant information to States Parties, other States, non-State

entities and intergovernmental organizations concerning the provision of telecommunication resources for disaster mitigation and relief, by electronic means and other appropriate mechanisms;

- c) develop, operate, and maintain information collection and dissemination procedures and systems necessary for the implementation of the Convention; and
- d) inform States of the terms of this Convention, and to facilitate and support the cooperation among States Parties provided for herein.

5. The States Parties shall cooperate among themselves to improve the ability of governmental organizations, non-State entities and intergovernmental organizations to establish mechanisms for training in the handling and operation of equipment, and instruction courses in the development, design and construction of emergency telecommunication facilities for disaster prevention, monitoring and mitigation.

Article 4

Provision of Telecommunication Assistance

1. A State Party requiring telecommunication assistance for disaster mitigation and relief may request such assistance from any other State Party, either directly or through the operational coordinator. If the request is made through the operational coordinator, the operational coordinator shall immediately disseminate this information to all other appropriate States Parties. If the request is made directly to another State Party, the requesting State Party shall inform the operational coordinator as soon as possible.

2. A State Party requesting telecommunication assistance shall specify the scope and type of assistance required and those measures taken pursuant to Articles 5 and 9 of this Convention, and, when practicable, provide the State Party to which the request is directed and/or the operational coordinator with any other information necessary to determine the extent to which such State Party is able to meet the request.

3. Each State Party to which a request for telecommunication assistance is directed, either directly or through the operational coordinator, shall promptly determine and notify the requesting State Party whether it will render the assistance requested, directly or otherwise, and the scope of, and terms, conditions, restrictions and cost, if any, applicable to such assistance.

4. Each State Party determining to provide telecommunication assistance shall so inform the operational coordinator as soon as possible.

5. No telecommunication assistance shall be provided pursuant to this Convention without the consent of the requesting State Party. The requesting State Party shall retain the authority to reject all or part of any telecom-

munication assistance offered pursuant to this Convention in accordance with the requesting State Party's existing national law and policy.

6. The States Parties recognize the right of requesting States Parties to request telecommunication assistance directly from non-State entities and intergovernmental organizations, and the right of non-State entities and intergovernmental organizations, pursuant to the laws to which they are subject, to provide telecommunication assistance to requesting States Parties pursuant to this Article.

7. A non-State entity or intergovernmental organization may not be a “requesting State Party” and may not request telecommunication assistance under this Convention.

8. Nothing in this Convention shall interfere with the right of a State Party, under its national law, to direct, control, coordinate and supervise telecommunication assistance provided under this Convention within its territory.

Article 5

Privileges, Immunities, and Facilities

1. The requesting State Party shall, to the extent permitted by its national law, afford to persons, other than its nationals, and to organizations, other than those headquartered or domiciled within its territory, who act pursuant to this Convention to provide telecommunication assistance and who have been notified to, and accepted by, the requesting State Party, the necessary privileges, immunities, and facilities for the performance of their proper functions, including, but not limited to:

- a) immunity from arrest, detention and legal process, including criminal, civil and administrative jurisdiction of the requesting State Party, in respect of acts or omissions specifically and directly related to the provision of telecommunication assistance;
- b) exemption from taxation, duties or other charges, except for those which are normally incorporated in the price of goods or services, in respect of the performance of their assistance functions or on the equipment, materials and other property brought into or purchased in the territory of the requesting State Party for the purpose of providing telecommunication assistance under this Convention; and
- c) immunity from seizure, attachment or requisition of such equipment, materials and property.

2. The requesting State Party shall provide, to the extent of its capabilities, local facilities and services for the proper and effective administration of the telecommunication assistance, including ensuring that telecom-

munication equipment brought into its territory pursuant to this Convention shall be expeditiously licensed or shall be exempt from licensing in accordance with its domestic laws and regulations.

3. The requesting State Party shall ensure the protection of personnel, equipment and materials brought into its territory pursuant to this Convention.

4. Ownership of equipment and materials provided pursuant to this Convention shall be unaffected by their use under the terms of this Convention. The requesting State Party shall ensure the prompt return of such equipment, material and property to the proper assisting State Party.

5. The requesting State Party shall not direct the deployment or use of any telecommunication resources provided pursuant to this Convention for purposes not directly related to predicting, preparing for, responding to, monitoring, mitigating the impact of or providing relief during and following disasters.

6. Nothing in this Article shall require any requesting State Party to provide its nationals or permanent residents, or organizations headquartered or domiciled within its territory, with privileges and immunities.

7. Without prejudice to their privileges and immunities in accordance with this Article, all persons entering the territory of a State Party for the purpose of providing telecommunication assistance or otherwise facilitating the use of telecommunication resources pursuant to this Convention, and all organizations providing telecommunication assistance or otherwise facilitating the use of telecommunication resources pursuant to this Convention, have a duty to respect the laws and regulations of that State Party. Such persons and organizations also shall have a duty not to interfere in the domestic affairs of the State Party into whose territory they have entered.

8. Nothing in this Article shall prejudice the rights and obligations with respect to privileges and immunities afforded to persons and organizations participating directly or indirectly in telecommunication assistance, pursuant to other international agreements (including the Convention on the Privileges and Immunities of the United Nations, adopted by the General Assembly on 13 February 1946, and the Convention on the Privileges and Immunities of the Specialized Agencies, adopted by the General Assembly on 21 November 1947) or international law.

Article 6

Termination of Assistance

1. The requesting State Party or the assisting State Party may, at any time, terminate telecommunication assistance received or provided under Article 4 by providing notification in writing. Upon such notification, the States Parties involved shall consult with each other to provide for the proper

and expeditious conclusion of the assistance, bearing in mind the impact of such termination on the risk to human life and ongoing disaster relief operations.

2. States Parties engaged in providing or receiving telecommunication assistance pursuant to this Convention shall remain subject to the terms of this Convention following the termination of such assistance.

3. Any State Party requesting termination of telecommunication assistance shall notify the operational coordinator of such request. The operational coordinator shall provide such assistance as is requested and necessary to facilitate the conclusion of the telecommunication assistance.

Article 7

Payment or Reimbursement of Costs or Fees

1. The States Parties may condition the provision of telecommunication assistance for disaster mitigation and relief upon agreement to pay or reimburse specified costs or fees, always bearing in mind the contents of paragraph 8 of this Article.

2. When such condition exists, the States Parties shall set forth in writing, prior to the provision of telecommunication assistance:

- a) the requirement for payment or reimbursement;
- b) the amount of such payment or reimbursement or terms under which it shall be calculated; and
- c) any other terms, conditions or restrictions applicable to such payment or reimbursement, including, but not limited to, the currency in which such payment or reimbursement shall be made.

3. The requirements of paragraphs 2 b) and 2 c) of this Article may be satisfied by reference to published tariffs, rates or prices.

4. In order that the negotiation of payment and reimbursement agreements does not unduly delay the provision of telecommunication assistance, the operational coordinator shall develop, in consultation with the States Parties, a model payment and reimbursement agreement that may provide a foundation for the negotiation of payment and reimbursement obligations under this Article.

5. No State Party shall be obligated to make payment or reimbursement of costs or fees under this Convention without having first expressed its consent to the terms provided by an assisting State Party pursuant to paragraph 2 of this Article.

6. When the provision of telecommunication assistance is properly conditioned upon payment or reimbursement of costs or fees under this

Article, such payment or reimbursement shall be provided promptly after the assisting State Party has presented its request for payment or reimbursement.

7. Funds paid or reimbursed by a requesting State Party in association with the provision of telecommunication assistance shall be freely transferable out of the jurisdiction of the requesting State Party and shall not be delayed or withheld.

8. In determining whether to condition the provision of telecommunication assistance upon an agreement to pay or reimburse specified costs or fees, the amount of such costs or fees, and the terms, conditions and restrictions associated with their payment or reimbursement, the States Parties shall take into account, among other relevant factors:

- a) United Nations principles concerning humanitarian assistance;
- b) the nature of the disaster, natural hazard or health hazard;
- c) the impact, or potential impact, of the disaster;
- d) the place of origin of the disaster;
- e) the area affected, or potentially affected, by the disaster;
- f) the occurrence of previous disasters and the likelihood of future disasters in the affected area;
- g) the capacity of each State affected by the disaster, natural hazard or health hazard to prepare for, or respond to, such event; and
- h) the needs of developing countries.

9. This Article shall also apply to those situations in which telecommunication assistance is provided by a non-State entity or intergovernmental organization, provided that:

- a) the requesting State Party has consented to, and has not terminated, such provision of telecommunication assistance for disaster mitigation and relief;
- b) the non-State entity or intergovernmental organization providing such telecommunication assistance has notified to the requesting State Party its adherence to this Article and Articles 4 and 5; and
- c) the application of this Article is not inconsistent with any other agreement concerning the relations between the requesting State Party and the non-State entity or intergovernmental organization providing such telecommunication assistance.

Article 8

Telecommunication Assistance Information Inventory

1. Each State Party shall notify the operational coordinator of its authority(ies):

- a) responsible for matters arising under the terms of this Convention and authorized to request, offer, accept and terminate telecommunication assistance; and
 - b) competent to identify the governmental, intergovernmental and/or non-governmental resources which could be made available to facilitate the use of telecommunication resources for disaster mitigation and relief, including the provision of telecommunication assistance.
2. Each State Party shall endeavour to inform the operational coordinator promptly of any changes in the information provided pursuant to this Article.
3. The operational coordinator may accept notification from a non-State entity or intergovernmental organization of its procedures for authorization to offer and terminate telecommunication assistance as provided in this Article.
4. A State Party, non-State entity or intergovernmental organization may, at its discretion, include in the material it deposits with the operational coordinator information about specific telecommunication resources and about plans for the use those resources to respond to a request for telecommunication assistance from a requesting State Party.
5. The operational coordinator shall maintain copies of all lists of authorities, and shall expeditiously disseminate such material to the States Parties, to other States, and to appropriate non-State entities and intergovernmental organizations, unless a State Party, non-State entity or intergovernmental organization has previously specified, in writing, that distribution of its material be restricted.
6. The operational coordinator shall treat material deposited by non-State entities and intergovernmental organizations in a similar manner to material deposited by States Parties

Article 9

Regulatory Barriers

1. The States Parties shall, when possible, and in conformity with their national law, reduce or remove regulatory barriers to the use of telecommunication resources for disaster mitigation and relief, including to the provision of telecommunication assistance.
2. Regulatory barriers may include, but are not limited to:
 - a) regulations restricting the import or export of telecommunication equipment;
 - b) regulations restricting the use of telecommunication equipment or of radio-frequency spectrum;

- c) regulations restricting the movement of personnel who operate telecommunication equipment or who are essential to its effective use;
- d) regulations restricting the transit of telecommunication resources into, out of and through the territory of a State Party; and
- e) delays in the administration of such regulations.

3. Reduction of regulatory barriers may take the form of, but shall not be limited to:

- a) revising regulations;
- b) exempting specified telecommunication resources from the application of those regulations during the use of such resources for disaster mitigation and relief;
- c) pre-clearance of telecommunication resources for use in disaster mitigation and relief, in compliance with those regulations;
- d) recognition of foreign type-approval of telecommunication equipment and/or operating licenses;
- e) expedited review of telecommunication resources for use in disaster mitigation and relief, in compliance with those regulations; and
- f) temporary waiver of those regulations for the use of telecommunication resources for disaster mitigation and relief.

4. Each State Party shall, at the request of any other State Party, and to the extent permitted by its national law, facilitate the transit into, out of and through its territory of personnel, equipment, materials and information involved in the use of telecommunication resources for disaster mitigation and relief.

5. Each State Party shall notify the operational coordinator and the other States Parties, directly or through the operational coordinator, of:

- a) measures taken, pursuant to this Convention, for reducing or removing such regulatory barriers;
- b) procedures available, pursuant to this Convention, to States Parties, other States, non-State entities and/or intergovernmental organizations for the exemption of specified telecommunication resources used for disaster mitigation and relief from the application of such regulations, pre-clearance or expedited review of such resources in compliance with applicable regulations, acceptance of foreign type-approval of such resources, or temporary waiver of regulations otherwise applicable to such resources; and
- c) the terms, conditions and restrictions, if any, associated with the use of such procedures.

6. The operational coordinator shall regularly and expeditiously make available to the States Parties, to other States, to non-State entities and to intergovernmental organizations an up-to-date listing of such measures, their scope, and the terms, conditions and restrictions, if any, associated with their use.

7. Nothing in this Article shall permit the violation or abrogation of obligations and responsibilities imposed by national law, international law, or multilateral or bilateral agreements, including obligations and responsibilities concerning customs and export controls.

Article 10

Relationship to Other International Agreements

This Convention shall not affect the rights and obligations of States Parties deriving from other international agreements or international law.

Article 11

Dispute Settlement

1. In the event of a dispute between States Parties concerning the interpretation or application of this Convention, the States Parties to the dispute shall consult each other for the purpose of settling the dispute. Such consultation shall begin promptly upon the written declaration, delivered by one State Party to another State Party, of the existence of a dispute under this Convention. The State Party making such a written declaration of the existence of a dispute shall promptly deliver a copy of such declaration to the depositary.

2. If a dispute between States Parties cannot be settled within six (6) months of the date of delivery of the written declaration to a State Party to the dispute, the States Parties to the dispute may request any other State Party, State, non-State entity or intergovernmental organization to use its good offices to facilitate settlement of the dispute.

3. If neither State Party seeks the good offices of another State Party, State, non-State entity or intergovernmental organization, or if the exercise of good offices fails to facilitate a settlement of the dispute within six (6) months of the request for such good offices being made, then either State Party to the dispute may:

- a) request that the dispute be submitted to binding arbitration; or
- b) submit the dispute to the International Court of Justice for decision, provided that both States Parties to the dispute have, at the time of signing, ratifying or acceding to this Convention, or at

any time thereafter, accepted the jurisdiction of the International Court of Justice in respect of such disputes.

4. In the event that the respective States Parties to the dispute request that the dispute be submitted to binding arbitration and submit the dispute to the International Court of Justice for decision, the submission to the International Court of Justice shall have priority.

5. In the case of a dispute between a State Party requesting telecommunication assistance and a non-State entity or intergovernmental organization headquartered or domiciled outside of the territory of that State Party concerning the provision of telecommunication assistance under Article 4, the claim of the non-State entity or intergovernmental organization may be espoused directly by the State Party in which the non-State entity or intergovernmental organization is headquartered or domiciled as a State-to-State claim under this Article, provided that such espousal is not inconsistent with any other agreement between the State Party and the non-State entity or intergovernmental organization involved in the dispute.

6. When signing, ratifying, accepting, approving or acceding to this Convention, a State may declare that it does not consider itself bound by either or both of the dispute settlement procedures provided for in paragraph 3 above. The other States Parties shall not be bound by a dispute settlement procedure provided for in paragraph 3 with respect to a State Party for which such a declaration is in force.

Article 12

Entry into Force

1. This Convention shall be open for signature by all States which are members of the United Nations or of the International Telecommunication Union at the Intergovernmental Conference on Emergency Telecommunications in Tampere on 18 June 1998, and thereafter at the headquarters of the United Nations, New York, from 22 June 1998 to 21 June 2003.

2. A State may express its consent to be bound by this Convention:

- a) by signature (definitive signature);
- b) by signature subject to ratification, acceptance or approval followed by deposit of an instrument of ratification, acceptance or approval; or
- c) by deposit of an instrument of accession.

3. The Convention shall enter into force thirty (30) days after the deposit of instruments of ratification, acceptance, approval or accession or definitive signature of thirty (30) States.

4. For each State which signs definitively or deposits an instrument of ratification, acceptance, approval or accession, after the requirement set out in paragraph 3 of this Article has been fulfilled, this Convention shall enter into force thirty (30) days after the date of the definitive signature or consent to be bound.

Article 13 **Amendments**

1. A State Party may propose amendments to this Convention by submitting such amendments to the depositary, which shall circulate them to the other States Parties for approval.

2. The States Parties shall notify the depositary of their approval or disapproval of such proposed amendments within one hundred and eighty (180) days of their receipt.

3. Any amendment approved by two-thirds of all States Parties shall be laid down in a Protocol which is open for signature at the depositary by all States Parties.

4. The Protocol shall enter into force in the same manner as this Convention. For each State which signs the Protocol definitively or deposits an instrument of ratification, acceptance, approval or accession, after the requirements for the entry into force of the Protocol have been fulfilled, the Protocol shall enter into force for such State thirty (30) days after the date of the definitive signature or consent to be bound.

Article 14 **Reservations**

1. When definitively signing, ratifying or acceding to this Convention or any amendment hereto, a State Party may make reservations.

2. A State Party may at any time withdraw its prior reservation by written notification to the depositary. Such withdrawal of a reservation becomes effective immediately upon notification to the depositary.

Article 15 **Denunciation**

1. A State Party may denounce this Convention by written notification to the depositary.

2. Denunciation shall take effect ninety (90) days following the date of deposit of the written notification.

3. At the request of the denouncing State Party, all copies of the lists of authorities and of measures adopted and procedures available for reducing regulatory measures provided by any State Party denouncing this Convention shall be removed from use by the effective date of such denunciation.

Article 16
Depositary

The Secretary-General of the United Nations shall be the depositary of this Convention.

Article 17
Authentic Texts

The original of this Convention, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with the depositary. Only the English, French and Spanish authentic texts will be made available for signature at Tampere on 18 June 1998. The depositary shall prepare the authentic texts in Arabic, Chinese and Russian as soon as possible thereafter.

ANNEX 2: OCHA 2002 SYMPOSIUM FINAL STATEMENT

United Nations Office for the Coordination of Humanitarian Affairs

Symposium on Best Practices in Humanitarian Information Exchange

**Palais des Nations
Geneva, Switzerland
5 – 8 February 2002**

Best Practices in Humanitarian Information Management and Exchange

Preamble

Interested practitioners in the field of information management, including government representatives and institutions, UN agencies, non-governmental organizations (NGOs), academia and the private sector, met to take stock of achievements in the humanitarian information management field, to identify future challenges and to agree on next steps.

Based on their collective experience, the participants endorsed this statement as a vision for the future and a prescription for action.

By endorsing this statement participants agreed to 1) share its contents with their respective organizations; 2) raise these issues with international institutions and actors for broader discussion and implementation; and 3) work with OCHA to follow up on its recommendations.

Overview

Timely and accurate information is recognized as integral to humanitarian action in both natural disasters and complex emergencies. The international humanitarian community's ability to collect, analyze, disseminate and act on key information is fundamental to effective response. Better information leading to improved response directly benefits affected populations. Over time, improved assessment of impacts and responses through better data collection and management contributes to a more complete global database on

disaster impacts, leading to better risk assessment and targeting of prevention and preparedness activities.

The Symposium recognized that considerable progress has been made to date in developing information systems, tools and Web sites and in establishing standards for their use. In particular, participants acknowledged the ReliefWeb, Integrated Regional Information Network (IRIN) and the Humanitarian Information Center (HIC) models as successful examples of international and field-level activities and services that form a solid basis for future work. But much remains to be done to build upon these approaches and continue to meet the demands of decision-makers and other stakeholders.

Principles of Humanitarian Information Management and Exchange

The Symposium affirmed the fundamental principle that the purpose of humanitarian assistance is to assist affected and at-risk people. Information management and exchange should reflect this humanitarian imperative and promote more effective humanitarian action.

Symposium participants also identified the following operational principles to guide information management and exchange activities:

Accessibility. Humanitarian information and data should be made accessible to all humanitarian actors by applying easy-to-use formats and by translating information into common or local languages when necessary. Information and data for humanitarian purposes should be made widely available through a variety of online and offline distribution channels including the media.

Inclusiveness. Information management and exchange should be based on a system of collaboration, partnership and sharing with a high degree of participation and ownership by multiple stakeholders, especially representatives of the affected population.

Inter-operability. All sharable data and information should be made available in formats that can be easily retrieved, shared and used by humanitarian organizations.

Accountability. Users must be able to evaluate the reliability and credibility of data and information by knowing its source. Information providers should be responsible to their partners and stakeholders for the content they publish and disseminate.

Verifiability. Information should be accurate, consistent and based on sound methodologies, validated by external sources, and analyzed within the proper contextual framework.

Relevance. Information should be practical, flexible, responsive, and driven by operational needs in support of decision-making throughout all phases of a crisis.

Objectivity. Information managers should consult a variety of sources when collecting and analyzing information so as to provide varied and balanced perspectives for addressing problems and recommending solutions.

Humanity. Information should never be used to distort, to mislead or to cause harm to affected or at-risk populations and should respect the dignity of victims.

Timeliness. Humanitarian information should be collected, analyzed and disseminated efficiently, and must be kept current.

Sustainability. Humanitarian information and data should be preserved, cataloged and archived, so that it can be retrieved for future use, such as for preparedness, analysis, lessons learned and evaluation.

Key Issues

In support of these principles, Symposium participants highlighted a number of key themes to be considered when developing and implementing humanitarian information management and exchange systems.

1) User Requirements

The Symposium emphasized that information management systems should meet the clearly defined needs of users and decision-makers, and aim to reduce the effects of information overload.

2) Quality of Data and Information

To be useful, data and information must be relevant, accurate and timely. Ensuring quality requires the development of, and adherence to, standards for information collection, exchange, security, attribution and use. In addition, it is vital to maintain a strong sense of professional ethics at every stage of information system design and implementation, including such elements as independence and impartiality, in pursuit of humanitarian action.

3) Technology

Technology is a powerful enabler. Technology should not, however, undermine, distort or overshadow content. Achieving humanitarian objectives by using technology is not primarily a question of hardware and software, but rather of cost-effectiveness and appropriateness for achieving desired humanitarian outcomes. Information system designers should consider explicit and proactive efforts for making systems relevant and easy to use, particularly in remote areas. This includes bridging the technological divide by building capacity, promoting the exchange of knowledge and skills between local and international actors and making information available through a variety of means in a variety of formats. Human judgment, rather than technology, is the basis for operational decisions.

4) Partnerships

Successful information management systems encourage openness, inclusiveness and sharing. This strengthens relations, trust and coordination among multiple stakeholders. Multiple information systems, including Web sites and databases, operating at global, regional and local levels, create the potential for an unprecedented degree of cooperation between organizations and people at the field level, between the field and headquarters and between the international and local communities. Partnering with the media can be an effective way of communicating information to the affected population.

5) Preparedness

One of the most important aspects of humanitarian information management and exchange is preparation. Information-related efforts that are incrementally resourced and initiated only as emergency situations unfold tend to remain behind the curve and reactive. This leads to a failure to provide timely information that is accurate and contextual. Preparedness measures such as base data preparation for high-risk areas, national-level capacity building and the formation of institutional relationships prior to deployment enable information management and exchange systems to effectively support assistance efforts once an emergency begins. Preparation also includes planning for sustainability and/or exit strategies.

Best Practices

The following is a set of best practices derived from the principles and themes summarized above and identified as integral to the future success of humanitarian information management and exchange. In complex emergencies and natural disasters, the humanitarian community should:

Define user needs and emphasize data sets and formats that directly support decision-making at the field level. Identify user groups, conduct user requirement analysis, inventory information resources inventory and define core information products based on user input. Develop and implement information products on operationally relevant themes, such as the location and condition of the affected population, “who is doing what, where?” and factors affecting access to affected populations. Use templates such as the Rapid Village Assessment (RVA) tool to speed data collection. Create maps to effectively communicate information to decision-makers.

Collect and analyze base data and information before and throughout an emergency. Gather, organize and archive data and information on operationally relevant themes for high-risk areas in preparation for emergencies. Maintain and enhance data sets during emergency responses. Document and archive data so that it is easily accessible for future use.

Maintain and promote data and information standards. Follow generally accepted standards for information exchange, such as the Structured Humanitarian Assistance Reporting (SHARE) standard to promote data sourcing, dating and geo-referencing. The SHARE standard facilitates integration of data from multiple sources and enhances verifiability, assessment, analysis and accountability. Geo-referencing data during collection allows cartographic presentation and geographic information system (GIS) analysis. Create metadata catalogs as part of a standard documentation process with handover procedures.

Maximize resources by expanding partnerships. Recognize that data and information are collected and managed by a variety of actors including national governments, UN agencies, NGOs, the private sector and research institutions and that the contributions of these providers are crucial. Pre-establish inter-agency agreements and relationships at the national and local levels. Establish an ongoing process of personal interaction to create partnerships for information management and exchange. Use distributed networks and neutral portal repositories to assist with information sharing and promote linkages to avoid duplication of effort.

Engage local and national actors in information projects. Develop networks of local communities and national NGOs, civil society groups and the private sector and address the issue of local participation as part of overall emergency planning, monitoring and evaluation. Build and strengthen the national/local capacity in information management and exchange and promote the transfer and use of local knowledge.

Maintain preparedness "toolboxes" for online and offline distribution. These toolboxes provide guidelines and reference tools for the rapid-deployment of HICs or the establishment of Web sites and databases under a variety of field conditions. Toolboxes should include data standards, operating procedures, training materials, database templates and manuals.

Define an exit strategy. Develop a clear phase-out strategy, including transitioning to development activities and creating archiving systems to maintain access by current and future stakeholders after the project is closed.

Preserve institutional operational memory. Define and adhere to sound data and information management policies and techniques for handling large volumes of information. Document datasets with metadata. Maintain quality control and organizational learning to avoid the need to start from scratch with each emergency and to maintain quality of information services during emergencies.

Establish field-based HICs according to identified operational and decision-making demand. Design them as open-access physical locations, incorporate existing capacities, systems and information management activities. Serve as a neutral broker of humanitarian information, providing value-added products and beneficial services to the field-based humanitarian community. Encourage broad participation from local, national and international actors to facilitate and support humanitarian response activities. Form partnerships with specialized agencies and sector experts to conduct sectoral surveys and analyses.

Use appropriate technology. Ensure that field information systems reach the broadest possible audience. Be aware of the limitations of technology (both inherent and as related to availability). For example, keep in mind that the Internet, while powerful, is not a panacea and can be ineffective as a distribution channel to and from remote areas. Consider making data products, particularly databases, available via e-mail, CD-ROM and for local download. Recognize that local staff's ability to work with the technology is an important determinant of success. Technology should be easy to use and be accompanied by training for local staff.

Use open data formats and inter-operable technologies. Use commercial, off-the-shelf technology and create all information products using open data formats and inter-operable technologies.

Promote awareness and training. Conduct technology training sessions for non-technical humanitarian staff, particularly national staff. Educate senior

decision-makers in humanitarian organizations about the purpose, strengths and weaknesses of information management and exchange. Broaden participation in information projects among affected and at-risk populations.

Involve the private sector. Consider the efficiencies of contracting information management and exchange functions to the private sector, especially local private interests, when cost-effective and appropriate. Encourage a constructive role for the private sector by incorporating private-sector expertise into preparedness and planning activities.

Mobilize adequate resources. Include funding for field-level information management and exchange systems and projects in the overall resourcing of assistance programs.

Recommendations and Follow-Up Actions

Participants endorsed the above principles, themes and best practices and committed to working on resolving outstanding issues. To this end, Symposium participants agreed to work proactively within their respective organizations to promote recognition of, and investment in, information management practices to improve humanitarian action.

The Symposium participants recognized that necessary resources would need to be identified and raised to implement these recommendations and follow-up actions. Participants also emphasized the importance of mobilizing resources to provide adequate funding for information management and exchange activities incorporating the results of the recommended actions.

The Symposium acknowledged OCHA's role as a focal point in the area of humanitarian information and recommended that a multi-stakeholder steering committee be established by OCHA to:

- 1) draft specific guidelines for humanitarian information management and exchange;
- 2) catalog best practices through the ongoing development of lessons-learned case studies, project evaluations and the identification of appropriate technologies;
- 3) establish working groups as needed, including representatives from recipient countries, to implement recommendations;

4) establish and announce an appropriate process for implementing these recommendations through consultation with stakeholders.

Specific areas to be addressed through this follow-up process include:

- **User requirements.** Explore the linkages between data, information and decision-making in critical areas, such as assessments, “who is doing what, where?” and other operational information, particularly in the field. Improve the exchange of data and information collected during natural disasters and complex emergencies for operational purposes as well as to strengthen the database on global disaster impacts over the long-term.
- **Quality of Information.** Develop and disseminate standards, ethical guidelines and codes of conduct to address issues of data quality and information integrity.
- **Technology.** Evaluate and report on successful applications of new and existing technologies. Identify technology partners and promote the dissemination of appropriate technology practices for varying end uses. Discuss the application of these technologies in a future forum.
- **Partnerships.** Strengthen the linkages among existing information systems. Improve relationships between these systems and their stakeholders including decision-makers at the field and headquarters level, as well as with the affected population. Establish public-private partnerships especially in the area of systems and tools development. Define the roles of sector specialists and the media.
- **Preparedness.** Promote the preparation of base data for high-risk areas. Calculate and disseminate risk assessments, and build national capacity and develop toolboxes for rapid mobilization of HICs. Raise donor- and, where appropriate, media-awareness of the importance of information preparedness to humanitarian action.
- **Field-level coordination.** Improve field-level information coordination among multiple actors including the UN resident coordinator and UN country team, NGOs, academia, the affected population and other stakeholders. Facilitate OCHA’s role as an information field focal point or partner. Evaluate and implement field-level information policies such as access and exit strategies.

Progress on these recommendations will be posted on ReliefWeb, submitted to the Inter-Agency Standing Committee (IASC) and will become the subject of the next symposium.

ABOUT THE AUTHORS

Daniel Stauffacher is currently Ambassador at the State Secretariat for Economic Affairs of Switzerland, and, among other duties, advisor to the UN and the Tunisian Government for the second phase of the WSIS (November 2005), Vice-Chairman of the Bureau of the WSIS PrepCom, member of the UN ICT Task Force and of the Strategy Group on Information Society of the Swiss Government and Chairman of the ICT4Peace process. Ambassador Stauffacher holds a PhD from Zürich University and a MA from Columbia University in New York in International Economics. Mr. Stauffacher worked in the past for UNDP in Asia, was Division Chief of the Swiss Federal Office for Foreign Economic Affairs, Counsellor of the Swiss Mission for the EU and Ambassador and Delegate of the Swiss Federal Council in Geneva for the World Summit for Social Development (WSSD)/Special Session of the UN General Assembly, Geneva June 2000. He was the convener of the first Global Compact Meeting in Switzerland and Ambassador and Delegate of the Swiss Federal Council in Geneva for the WSIS (WSIS I). He was also a member of the UN Task Force on Financial Mechanisms for ICTD.

William J. Drake is the President of Computer Professionals for Social Responsibility, a global civil society organization, and an ICT policy consultant based in Geneva, Switzerland. In addition, he is co-editor of the MIT Press book series, *The Information Revolution and Global Politics*. Previously, he has been a Visiting Senior Fellow at the Center for International Development and Conflict Management, University of Maryland, College Park; a Senior Associate and the founding Director of the Project on the Information Revolution and World Politics at the Carnegie Endowment for International Peace, Washington DC; the founding Associate Director of the Communication, Culture and Technology Program, Georgetown University, Washington DC; and an Assistant Professor of Communication at the University of California, San Diego. His primary research interests are the global governance of information and communication technology, and the impact of the information revolution on world politics. Among his publications are: *Governing Global Electronic Networks: International Perspectives on Policy and Power* (co-editor, forthcoming); *Reforming Internet Governance: Perspective from the UN Working Group on Internet Governance* (editor); *From the Global Digital Divide to the Global Digital Opportunity: Proposals Submitted to the G-8 Kyushu-Okinawa Summit 2000*---*Report of the World Economic Forum Task Force*; *Toward Sustainable Competition in Global Telecommunications: From Principle to Practice*; *Telecommunications in the Information Age* (editor); and *The New Information Infrastructure: Strategies for US Policy*

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