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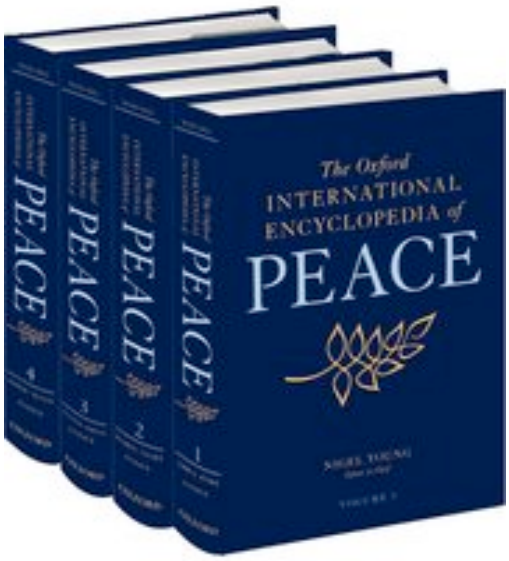

Information, Communications Technology and Peace

Pre-publication draft of entry written by Bill Warters, Wayne State University, Detroit, Michigan

w.warters@wayne.edu

Information Technology (IT) involves the study, design, development, implementation, support or management of computer-based information systems, and particularly software applications and computer hardware. While computer-based information systems are quite powerful on their own, with the addition of a communications channel, such as the Internet or other network, the capability of these systems and the people using them is significantly enhanced. It has become common (somewhat less so within the United States) to use the more encompassing phrase Information and Communications Technologies (ICT) when discussing social issues and technology. ICT is a broad term that includes communication devices or applications encompassing: radio, television, cellular phones, computer and network hardware and software, wireless networks, satellite systems and so on, as well as the various services and applications associated with them, such as video-conferencing, information sharing and distance learning.

Brief History of ICT

In The Social Life of Information (Boston: Harvard Business School Press 2000) John Seely Brown and Paul Duguid claim that the "Information Age" began in 1844, when the invention of the telegraph separated the speed of information transfer from the speed of human travel. Prior to this, networks for the transmission of information included pigeons and horse-borne couriers, networks that were cumbersome and subject to interruption, and the telegraph was seen as a tremendous step forward. Other important milestones in ICT history include the invention of the telephone, the radio, the computer (mainframe and then personal) and the development in the 1970s of the Internet consisting of a network of linked computers.

Emergence of the World Wide Web

The World Wide Web was born in 1991 when Tim Berners-Lee, a physicist working at CERN, the European Organization for Nuclear Research and the largest internet site in Europe, publicly released his world wide web project software. The project combined the non-linear document linking of hypertext with the internet to "allow links to be made to information anywhere." The Stanford Linear Accelerator Center in California (SLAC) became the first Web server based in United States, serving up abstracts of physics papers. By 1992 there were 50 web servers online worldwide, and the number continued to rise dramatically with the release in 1993 of the Mosaic graphical web browser developed by the National Center for Supercomputing Applications at the University of Illinois at Urbana-Champaign (NCSA-UIUC), a project led by Marc Andreessen. In 1994 Berners-Lee decided to constitute the World Wide Web Consortium (W3C) to regulate the further development of the many technologies involved (HTTP, HTML, etc.) through a standardization process that would promote interoperability. W3C primarily pursues its mission through the creation of Web standards and guidelines. Since 1994, W3C has published more than 110 such standards, called W3C Recommendations.

Maturation of the Web

The World Wide Web (WWW) has matured considerably since 1991. In little more than a decade following its commercialisation, the WWW has been remarkably successful in developing greater opportunities for communication access for the first billion end users, representing only about 20 percent of the world's population. In terms of features, the WWW is now (circa 2007) commonly referred to as "Web 2.0" to signify important changes that occurred. Contents and services have matured from simple read-only static content produced only by the technically savvy to dynamic content that is often supplemented by or directly created by non-technical users. Connected users now have streaming video and audio content, voice over IP, instant messaging, forums, blogs, e-commerce, e-payments, and lifestyle information hosted online. In terms of access methods, we have seen a shift from the classical Web requiring a dedicated computer to a wireless web and to a mobile web accessible using a broad range of mobile devices. These changes present both new opportunities and new challenges.

Potential Influences of ICT on Social Conflict

ICTs are tools that can assist with communication and the development and maintenance of cooperative relationships. They also provide sources of information, tools for processing that information, and useful decision-making supports to aid in the allocation of scarce resources. In conflict situations, ICTs may have a significant impact on the available methods of spreading information, viewpoints and propaganda, as well

as the tools available to gather information needed to effectively direct and/or coordinate operations in the field. In terms of public perceptions of conflicts, instead of the primarily one way flow of information that was seen on TV and in newspapers in the past, information about conflict situations now becomes multi-directional, allowing multiple senders/receivers in distributed locations, from various backgrounds and cultures to participate.

ICTs also influence the options and approaches available to actors in conflict zones, including direct combatants, civilian bystanders and conflict intervenors. Military leaders are responding to new forms of conflict known as cyberwarfare that take place over the internet when hostile countries and/or independent militant or terrorist groups launch coordinated attacks aimed at disabling or manipulating the technological resources of their rivals. In 2007, the United States Air Force established a new military command named Cyber Command focused entirely on the coordination of offensive and defensive network and electronic warfare.

The GenderIT.org project, focused on the intersection of violence against women and ICT issues, provides an illustrative example of the range of ways that peace activists and advocates are taking advantage of ICTs as well.

> "Women war survivors are using virtual, safe spaces offered by the internet to meet, communicate and share their experiences as a healing strategy as well as to access information relevant to rebuilding their lives. Women are using ICTs to gather information from country records and fact-finding missions, government plans, and policy proposals in order to identify opportunities for strategic intervention in the conflict resolution process and to better inform their participation. Women are expressing their opposition to war through online organizing techniques, including virtual marches, campaigns and petitions. Such approaches increase the numbers of participants and intensify the volume of protests."

The World Summit on the Information Society

World leaders are aware of the importance of the revolution in ICTs for shaping the future of the world and in achieving the development goals outlined in the United Nations Millennium Declaration. One of the early attempts to address international aspects of ICT was the G7 Ministerial Conference on Global Information Society held in 1995 in Brussels. This group, consisting of leaders from the more developed nations, put forward a set of general principles, namely: promoting dynamic competition; encouraging private investment; defining an adaptable regulatory framework; providing open access to networks while ensuring universal provision of, and access to services; promoting equality of opportunity to the citizen; promoting diversity of content, including cultural and linguistic diversity; recognizing the necessity of world-wide cooperation with particular attention to less developed countries.

Concern for ICT and the fate of developing nations is reflected in the 2001 United Nations General Assembly Resolution 56/183 which endorsed the holding of a World Summit on the Information Society (WSIS). The WSIS was the first comprehensive (in issues) and global (in participation) attempt to address an effect of ICT and Internet on society. The International Telecommunications Union (ITU), the UN agency concerned with broadcasting, telephony and other communications technologies, was the lead agency in organizing the WSIS. UNESCO, the United Nations Educational, Scientific and Cultural Organization, with its mandate to promote the free exchange of ideas and knowledge, was also a key organizer.

Unlike previous world summits the WSIS was held in two phases. The first phase took place in Geneva from 10 to 12 December 2003, and the second phase took place in Tunis from 16 to 18 November 2005. More than 11,000 participants from 175 countries attended the Geneva Summit and related events and more than 19,000 participants from 174 countries attended the Tunis Summit and related events.

At WSIS Geneva in December 2003, world leaders declared

> "our common desire and commitment to build a people-centred, inclusive and development-oriented Information Society, where everyone can create, access, utilize and share information and knowledge, enabling individuals, communities and peoples to achieve their full potential in promoting their sustainable development and improving their quality of life, premised on the purposes and principles of the Charter of the United Nations and respecting fully and upholding the Universal Declaration of Human Rights."

The Plan of Action adopted in Geneva set out a goal, among others, of bringing 50 percent of the world's population online by 2015.

The Tunis phase streamlined the agenda into main action lines dealing with Internet governance, e-government; e-business; e-learning; e-health; e-employment; e-environment; e-agriculture; e-science; public governance; and ICT for development, information and communication infrastructure; access to information and knowledge; capacity building; the enabling environment; building confidence and security in the use of ICT; cultural diversity and identity; linguistic diversity and local content; media; and ethical dimensions of the information society.

ICT for Development

Work on the role of ICTs for Development (ICT4D) and humanitarian relief was already strong going into the WSIS, as evidenced by the activities of organizations such as the 1997 Global Knowledge Partnership (see http://www.globalknowledge.org). The 2006 Global Alliance for ICT and Development (see http://www.un-gaid.org), the World Bank-sponsored infoDev.org project (see http://www.infodev.org), and UN-sponsored

ReliefWeb (see http://www.reliefweb.int) are all key ICT-related partnerships supporting international development efforts that reflect work begun at WSIS. Technology is also is playing an important role in monitoring the progress on the Millennium Development Goals, with the web-based MDG Monitor (see http://www.mdgmonitor.org) providing a prime example.

ICT for Peace

When compared to development efforts, ICT's specific role in fostering peace and conflict mitigation was not as evident on the WSIS agenda in the early stages. However, in many countries, armed conflict undermines progress towards the Millennium Development Goals. A formal ICT4Peace project was initiated in 2004, with the support of the Swiss Federal Departments of Foreign Affairs and Defense, Civil Protection and Sport, with the goal of investigating the relation between ICT and peace in the context of the WSIS. The ICT4Peace initiative highlighted the use of ICTs to prevent and respond to conflict and to support and promote peace.
The group prepared a report "Information and Communication Technology for Peace: the role of ICT in preventing, responding to and recovering from conflict" by D. Stauffacher, W. Drake, P. Currion and J. Steinberger, now published as part of the United Nations ICT Task Force Series. The document includes a preface by UN Secretary General Kofi Annan. The report maps out different possible uses of ICT in the areas of early warning and conflict prevention, operations and support, and post-conflict reconstruction. Cross-cutting areas such as the use of the internet, the role of the media, technical development, networking and learning are also investigated.

WSIS Statement on ICTs and Peace

The ICT4Peace report and education and advocacy efforts by supporters during the WSIS resulted in the acceptance of paragraph 36 of the WSIS Tunis commitment, the culminating statement produced at the WSIS Summit. It reads

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

This paragraph, approved by the WSIS in Tunis, can now be used as a reference for practitioners and advocates using ICT to promote peace.

The ICT4Peace project that emerged during the WSIS was formally established as a Swiss Foundation in early 2006. This foundation, based in Geneva and visible online at

http://www.ict4peace.org, serves as a key hub for research, advocacy and networking on the topic of ICT use to prevent, respond to and recover from conflict. A related online journal entitled Peace IT! is published by the Finland-based Crisis Management Initiative (see http://www.cmi.fi/?content=itcm_project) headed by former Finnish President Martti Ahtisaari.

ICT and UN Peace Operations

In 2000 a special commission exploring needed reforms of UN Peace Operations produced the Report of the Panel on United Nations Peace Operations, commonly referred to as the Brahimi Report after its chair, Ambassador Lakhdar Brahimi. The Report put great emphasis on the need for enhanced ICT within the UN itself, arguing for the creation of an Information and Strategic Analysis Secretariat with a Chief Information Officer to serve as the system-wide lead for information gathering, analysis, knowledge management, and strategic planning with respect to intra-organizational uses of ICT and public information campaigns in conflict zones. The Report notes that peace operations could benefit greatly from more extensive use of geographic information systems (GIS) technology, which quickly integrates operational information with electronic maps of the mission area, for applications as diverse as demobilization, civilian policing, voter registration, human rights monitoring and reconstruction.

ICT and Diplomacy

The central importance of reliable communication technologies in support of peace became readily apparent during the cold war era nuclear standoff between the United States and the Soviet Union. During the tensest moments of the October 1962 Cuban Missile Crisis, Anatoly Dobrynin, the Soviet ambassador to Washington, was forced to rely on a bicycle courier to pick up his urgent messages destined for Moscow and pedal them over to the local Western Union office. Henry Kissinger, the former U.S. secretary of state, summed up his concerns about the possibility of conflict overtaking diplomacy in the age of nuclear weapons. "The greatest danger of war," he said, "seems to me not to be in the deliberate actions of wicked men, but in the inability of harassed men to manage events that have run away with them." In August of 1963, after the missile crisis had ended and at the urging of U.S. President John F. Kennedy, the United States and the Soviet Union established a permanent “hotline” to permit secure and constant contact between the two nations.

Since the early 1990s, considerable attention has been paid to the role of ICTs in diplomacy. In 1995, the United States Institute for Peace established the Virtual Diplomacy Initiative (see http://www.usip.org/virtualdiplomacy/) which has published numerous reports, papers, and proceedings on diplomacy in the information age.

Attention has also been paid to integrating ICT more fully into the training of diplomats. In 1993 former Yugoslav diplomat Jovan Kurbalija established the Unit for IT and

Diplomacy at the Mediterranean Academy of Diplomatic Studies in Malta, whose main aim was to provide training, research, and software development in the field of IT and diplomacy. The University of Malta has continued to support this work, known as the Diplo project (see http://www.diplomacy.edu), offering a postgraduate diploma in Contemporary Diplomacy that devotes a significant portion of the curriculum to the use of ICT tools for diplomatic activities. In November 2002, the Diplo project was further established as an independent non-profit foundation by the governments of Malta and Switzerland, with Kurbalija serving as DiploFoundation's founding director.

Bibliography

Geneva Declaration of Principles. 2003. In *World Summit on the Information Society*. Geneva: International Telecommunications Union.

Tunis Commitment. 2005. In *World Summit on the Information Society*. Tunis: International Telecommunications Union.

Brahimi, Lakhdar. 2000. Report of the Panel on United Nations Peace Operations. New York, NY: United Nations.

Brown, John Seely and Paul Duguid. 2000. *The Social Life of Information*. Boston: Harvard Business School Press.

Fialova, Katerina. 2007. *Women in Armed Conflict* (English). genderIT.org 2007 [cited 17 December 2007]. Available from http://www.genderit.org/en/index.shtml?apc=i90486-e--1.

Kennedy, Bruce. 2007. *The Birth of the Hotline*. CNN 1998 [cited 18 December 2007]. Available from http://www.cnn.com/SPECIALS/cold.war/episodes/10/spotlight/.

Stauffacher, Daniel; Drake, William; Currion, Paul and Julia Steinberger. 2005. Information and Communication Technology for Peace - The Role of ICT in Preventing, Responding to and Recovering from Conflict. In *UN ICT Task Force Series 11*. New York, NY: The United Nations Information and Communication Technologies Task Force.