

Author(s)	Horine, Brian S.
Title	International crisis information network
Publisher	Monterey, California. Naval Postgraduate School
Issue Date	2006-12
URL	http://hdl.handle.net/10945/2402

This document was downloaded on March 14, 2014 at 07:31:29



<http://www.nps.edu/library>

Calhoun is a project of the Dudley Knox Library at NPS, furthering the precepts and goals of open government and government transparency. All information contained herein has been approved for release by the NPS Public Affairs Officer.

**Dudley Knox Library / Naval Postgraduate School
411 Dyer Road / 1 University Circle
Monterey, California USA 93943**



<http://www.nps.edu/>



**NAVAL
POSTGRADUATE
SCHOOL**

MONTEREY, CALIFORNIA

THESIS

INTERNATIONAL CRISIS INFORMATION NETWORK

by

Basil J. Catanzaro
Brian S. Horine

December 2006

Thesis Advisor:
Second Reader:

John Arquilla
George Lober

Approved for public release; distribution is unlimited

THIS PAGE INTENTIONALLY LEFT BLANK

REPORT DOCUMENTATION PAGE		<i>Form Approved OMB No. 0704-0188</i>	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503.			
1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE December 2006	3. REPORT TYPE AND DATES COVERED Master's Thesis	
4. TITLE AND SUBTITLE International Crisis Information Network		5. FUNDING NUMBERS	
6. AUTHOR(S) Basil Catanzaro, Brian Horine		8. PERFORMING ORGANIZATION REPORT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000		10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
9. SPONSORING /MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A		11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.	
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited		12b. DISTRIBUTION CODE	
13. ABSTRACT (maximum 200 words) Historically, there has been a separation between the U.S. military and outside agencies, to include non-governmental organizations (NGOs) and international organizations (IOs). These communities often have misconceptions, biases, and stereotypical misperceptions of each other. Furthermore, these effects have sometimes degraded the ability of the military to accomplish its missions in stability, stabilization, transition, and reconstruction operations. It is imperative that the military and outside agencies cooperate with each other. From this observation, we ask the question: How can we develop a system to share information and lessons learned and collaborate on humanitarian activities within the international community? From this question the following hypothesis emerges: Information sharing and collaboration on lessons learned can be accomplished through a web-based network. The thesis will study the rift between the military, NGOs and IOs, show their overlapping area of operations, the results of this separation, and the fact that these communities have a desire and a need to share information; discuss the definition of networks and explain how networks and communities of interest have developed and advance a business model of how to best implement a web-based information sharing network. Note: This thesis includes the establishment of a prototype website to test the hypothesis.			
14. SUBJECT TERMS Collaboration, Networks, Information Sharing, Humanitarian, Civil Affairs, NGO, Civil-Military Relations		15. NUMBER OF PAGES 131	
		16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UL

THIS PAGE INTENTIONALLY LEFT BLANK

Approved for public release; distribution is unlimited

INTERNATIONAL CRISIS INFORMATION NETWORK

Basil J. Catanzaro
Major, United States Army
B.A., George Mason University 2000

Brian S. Horine
Major, United States Army
B.A., Arizona State University 1994

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN DEFENSE ANALYSIS

from the

**NAVAL POSTGRADUATE SCHOOL
December 2006**

Authors: Basil J. Catanzaro

Brian S. Horine

Approved by: Dr. John Arquilla
Thesis Advisor

George Lober
Second Reader

Dr. Gordon McCormick
Chairman, Department of Defense Analysis

THIS PAGE INTENTIONALLY LEFT BLANK

ABSTRACT

Historically, there has been a separation between the U.S. military and outside agencies, to include non-governmental organizations (NGOs) and international organizations (IOs). These communities often have misconceptions, biases, and stereotypical misperceptions of each other. Yet ironically, these communities often work in the same areas, in similar operations and on overlapping projects. The results or effects of such widespread misimpressions of each other have sometimes led to breakdowns in communication, duplication of work, and a failure to absorb lessons learned. Furthermore, these effects have sometimes degraded the ability of the military to accomplish its missions in stability, stabilization, transition, and reconstruction operations.

It is imperative that the military and outside agencies cooperate with each other. In doing so, they will be able to improve security and stability in countries that have been ravaged by natural and manmade disasters. Not only is this cooperation needed, many in the international community recognize the need and have affirmed the desire to cooperate. From this observation, we ask the question: How can we develop a system to share information and lessons learned and collaborate on humanitarian activities within the international community? From this question and through much research, we have come to the following hypothesis: Information sharing and collaboration on lessons learned can be accomplished through a web-based network.

In Chapter II, we study the rift between the military, NGOs and IOs. We show their overlapping area of operations, the results of this separation, and the fact that these communities have a desire and a need to share information. In Chapter III, we discuss the definition of networks and explain how networks and communities of interest have developed on the World Wide Web. Chapter IV advances a business model of how to best implement a web-based information-sharing network.

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

I.	INTRODUCTION.....	1
A.	PURPOSE.....	1
B.	RESEARCH QUESTIONS.....	1
C.	MOTIVATION	2
D.	BENEFITS OF RESEARCH.....	4
E.	METHODOLOGY	4
F.	ORGANIZATION OF THESIS	4
II.	CIVILIAN-MILITARY RELATIONS.....	7
A.	HISTORY OF MILITARY AND NGO RELATIONS AND WORKSPACES.....	8
B.	IS THERE A SEPARATION?.....	12
C.	WHAT HAVE BEEN THE EFFECTS OF THE SEPARATION?.....	17
D.	A HISTORY OF INCREASED COOPERATION.....	18
E.	IS COOPERATION NEEDED OR WANTED?.....	21
F.	HOW DO WE FIX THE PROBLEM?	23
G.	IS THIS NOT ALREADY BEING DONE?	24
H.	CONCLUSION	26
III.	NETWORKS.....	27
A.	WHAT IS A NETWORK?.....	27
B.	NETWORK TOPOLOGIES	29
C.	NETWORKS IN HISTORY	34
D.	KEVIN BACON?	37
E.	THE WORLD IS FLAT.....	37
F.	THE DOT-COMS	40
G.	WEB 2.0.....	42
H.	WHY USE THE INTERNET FOR ICIN?	43
I.	CONCLUSION	46
IV.	ICIN COMPONENTS.....	47
A.	ORGANIZATIONAL MODEL.....	47
1.	Human Resources	47
a.	Tasks.....	48
b.	Motivation.....	51
B.	THROUGHPUT AND COMPONENT ATTRIBUTES.....	52
1.	Hardware / Software.....	53
2.	Website Component Attributes	53
a.	Foundation.....	54
b.	Open-Source Portion	54
c.	Attraction Features	55
d.	Core-Members Area.....	57
e.	Technological Aspects.....	59
3.	Structure	61
C.	INPUTS.....	63

1.	Environment.....	63
a.	<i>Task Environment</i>	64
b.	<i>General Environment</i>	65
2.	Stakeholders	69
3.	Strategy	70
4.	Mission and Values	70
a.	<i>Mission Statement</i>	70
b.	<i>Values</i>	71
D.	CONCLUSION	72
V.	SUMMARY	73
A.	PURPOSE REVISITED.....	73
B.	RESEARCH QUESTIONS REVISITED.....	73
C.	CONCLUSION	74
APPENDIX A:	MULTI-LATERAL PEACE MISSIONS AND US COMBAT OPERATIONS, PAST AND CURRENT	75
APPENDIX B:	GAME THEORY	83
A.	BACKGROUND	83
B.	SITUATION	83
C.	ASSUMPTIONS.....	84
D.	THE ANALYSIS.....	84
E.	THE ACTORS	84
a.	Military Ranking Options	84
b.	NGO Ranking Options	85
F.	THE GAMES	86
G.	SUMMARY	89
APPENDIX C:	TIMELINE	91
APPENDIX D:	HUMANITARIAN WEB SITES	95
BIBLIOGRAPHY	103
INITIAL DISTRIBUTION LIST	111

LIST OF FIGURES

Figure 1.	UN Peace Operations.....	10
Figure 2.	Photo of a sign at a NGO table at SA III.	14
Figure 3.	Photo of an unnamed CA officer.	16
Figure 4.	A Simple Network.	29
Figure 5.	Network Topologies.....	30
Figure 6.	A multi-layered network.	30
Figure 7.	Osama in Laden’s Social Network.	31
Figure 8.	Number of Internet Users Worldwide.....	40
Figure 9.	Graph of Dot-com Burst.	41
Figure 10.	Percent of Time Spent on Online Activities.	45
Figure 11.	ICIN Organizational Model.	47
Figure 12.	ICIN Structure.....	62
Figure 13.	Stakeholders Model.	69
Figure 14.	Multi-lateral peace missions and US combat operations, past and current	75
Figure 15.	Ordinal Scale Rankings.....	84
Figure 16.	Game Matrix Template.....	86
Figure 17.	Matrix Security Positions.....	86
Figure 18.	Partial Conflict.....	87
Figure 19.	Nash Equilibrium Outcome	88
Figure 20.	Strategic Moves	89

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF TABLES

Table 1.	Multi-lateral Non-UN Peace Operations.	11
Table 2.	LinedIn Connections.	36
Table 3.	Post-Soviet Era Peace Missions and US Combat Operations.....	76

THIS PAGE INTENTIONALLY LEFT BLANK

ACKNOWLEDGMENTS

We would like to thank our families for putting up with hours on end of studying and doing research. To our wives we thank you for proof-reading volumes of papers and essays, for your understanding and never-ending support. We love you.

We would like to thank our advisor Dr. John Arquilla for suggesting this project and helping us to see it to fruition. Every day in his class made us realize how little we know and how much knowledge there is to be gained in the world.

We would like to thank George Lober for his stalwart support throughout this process, for teaching us to think critically, and for “learnin’ us how to rite reel gud!”

We would like to thank Sue Higgins, Allison Kerr, Ann Gallenson, and Charles “Fish” Herring from the Cebrowski Institute. Thank you for all your support, without all of you, ICIN would only be a thesis paper, you all made it a reality.

We would like to thank Dr Karen Guttieri for her support of Stability Operations and Civil Affairs officers at NPS. Karen remains the biggest advocate for Civil Affairs at NPS.

We would like to thank everyone in the Humanitarian Assistance and Disaster Relief community with whom we worked and interviewed for this thesis. We hope that ICIN will be of benefit to you all so that we may together serve those in need.

Finally, we would like to thank our fellow students and faculty. This process has been both an enriching and fulfilling experience and we have learned a great deal from each and every one of you. Thank you.

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF ACRONYMS AND ABBREVIATIONS

24/7	Twenty-four hours a day, seven days a week
AD	Anno Domini or “in the year of the Lord”
ARPANET	Advanced Research Projects Agency network
ASD-NII	Assistant Secretary of Defense for Networks, Inter-operability, Integration
AU	African Union
CA	Civil Affairs (Specifically United States Army)
CDHAM	Center for Disaster and Humanitarian Assistance Medicine
CEMAC	Economic and Monetary Community of Central Africa (Communauté Économique et Monétaire de l'Afrique Centrale)
CIMIC	Civil-Military Coordination
CIS	Common Wealth of Independent States
CENTCOM	Central Command
COA	Course of Action
COI	Community of Interest
COTS	Commercial Off the shelf
CSRS	Center for Stabilization and Reconstruction Studies
DA	Department of Defense Analysis
DARPA	Defense Advanced Research Projects Agency
DoD	Department of Defense
DODD	Department of Defense Directive
ECOWAS	Economic Community of West African States
EU	European Union
FR	First Responder
HA	Humanitarian Assistance
HISG	Humanitarian International Services Group
ICIN	International Crisis Information Network
ICRC	International Committee for the Red Cross
IFOR	International Force
IGO	International Governmental Organization
IO	International Organization
IOM	International Organization for Migration

ISAF	International Security Assistance Force
JSOU	Joint Special Operations University
JWICS	Joint Worldwide Intelligence Communications System
KFOR	Kosovo Force
LTTE	Liberation Tigers of Tamil Eelam
MIIS	Monterey Institute of International Studies
MOOTW	Military Operations Other Than War
MSF	Médecins Sans Frontières (Doctors without Borders)
NATO	North Atlantic Treaty Organization
NIPR	Non-secure Internet Protocol Router
NPS	Naval Postgraduate School
NSA	National Security Affairs
NSPD	National Security Presidential Directive
NGO	Non-Governmental Organization
ODS	Operation Desert Storm
OSCE	Organization for Security and Cooperation in Europe
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
OP	Occupying Power
OPC	Operation Provide Comfort
PAO	Public Affairs Office
PVO	Private Volunteer Organization
RC	Reserve Component (In reference to Reserve Civil Affairs Forces)
RC	Red Cross
RSS	Rich Site Summary
SA	Strong Angel
SASO	Stability and Support Operations
SCA	Swedish Committee for Afghanistan
SCHR	The Steering Committee on Humanitarian Response
SFOR	Stability Force
SIM	Subscriber Identity Module (Commonly used in Pre-Paid Phones)
SIPR	Secure Internet Protocol Router
SIPRI	Stockholm International Peace Research Institute

SME	Subject Matter Expert
SOF	Special Operations Forces
SSTR	Stability, Stabilization, Transition, and Reconstruction
TIPS	Techniques, Insights, Problems Solved
UK	United Kingdom
UN	United Nations
UNDP	United Nations Development Program
UNHCR	United Nations High Commission for Refugees
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
URI	Uniform Resource Identifiers
USACAPOC	United States Army Civil Affairs and Psychological Operations Command
USAID	United States Agency for International Development
USG	United States Government
USMA	United States Military Academy
VP	Vice President
W2COG	World-Wide Consortium of the Grid
WWW	World Wide Web

THIS PAGE INTENTIONALLY LEFT BLANK

I. INTRODUCTION

*Do you think me a learned, well-read man?’
‘Certainly’, replied Zi-gong, ‘Aren’t you?’
‘Not at all’ said Confucius.
‘I have simply grasped one thread which links up all the rest’”¹*

A. PURPOSE

The purpose of this thesis is to answer the question: How can we develop a system dedicated to the sharing of lessons learned between the military, non-governmental agencies (NGOs), international organizations (IOs), and government agencies? The intent is to develop a prototype Web site or “Beta model” to test the theory. Our goals are threefold:

- To establish a network that will allow the military and civilian organizations to meet in cyberspace and, in so doing, break down the cultural and stereotypical barriers between the military and civilian organizations that currently exist.
- Collaborate on lessons learned from operations in the civilian sector and areas in conflict.
- Empower individuals from the military and NGO/civilian community to conduct effective humanitarian operations in a cooperative manner.

B. RESEARCH QUESTIONS

Information sharing between these communities has been a heated topic for many years. As such, the thesis addresses the following questions:

- How can a web site bridge the gap between the military and other agencies?
- How has this separation inhibited operations or caused a duplication of effort?
- Can we develop a system by which civil affairs (CA) soldiers and the international community share lessons learned and collaborate on humanitarian missions?

¹ Confucius as quoted by Manuel Castells, *The Rise of the Network Society* (Malden, Massachusetts: Blackwell Publishers Inc 1996), 1.

- Who will maintain the site, once it has been created? (update information, monitor discussion groups etc...)
- Who will fund the site once it has been created? (Pay for workers, server space etc...)

C. MOTIVATION

During my first quarter at NPS, I, Major Catanzaro, was in a class called Warfare in the Information Age. The professor, Dr. John Arquilla, was discussing a web site called Company Command. Two West Point professors, Tony Burgess and Nate Allen, created this site as a repository for lessons learned for Army company commanders. This grass roots endeavor was extremely successful in sharing “best practices” in the context of the Iraq war. As I was pondering this concept, I decided it would be a good idea to develop a similar site for the civil affairs community to share lessons learned with each other and the humanitarian aid community. I approached Dr Arquilla with my idea and he encouraged me to pursue it as a thesis project.

The type of lessons learned I wished to capture were unique to the humanitarian response community. These would be lessons from prior deployments or missions, not technical data found in a field manual or operations guide. For example, the United States Agency for International Development (USAID) produces their own Field Operations Guide or FOG Manual. In it, one can learn how to build a well. The manual does not however, contain information specific to a certain regions. During one of my trips to Afghanistan, I was working in the Paktika province, which is located near the Pakistan border. Numerous aid workers and military personnel had dug so many wells that the water table had dropped. Therefore, if any one wanted to dig wells in Paktika, they either had to dig deeper and pay more money for a well, or decide to find an alternate project. This would have been a great lesson to share with the community so that they could adjust their plans before departing for Afghanistan.

A second example comes from an NGO based out of Colorado called Humanitarian International Services Group (HISG). In early 2002, HISG received many truckloads of medical supplies from a medical company that was going out of business. The CEO, Mr Kay Hiramine, worked arduously to try to get the supplies to Afghanistan

en masse, but to no avail. Eventually, Mr Hiramine sent the much-needed supplies into Pakistan, vis-à-vis freight forwarders and common carriers, and then trucked them into Afghanistan across the border. The entire process took many months. HISG even worked with the commander of the United States Army Civil Affairs and Psychological Operations Command (USACAPOC), Major General Altschuler, in a futile attempt to ship the supplies on military aircraft under provisions set forth in the Denton Amendment.²

If HISG had a network of fellow relief workers and humanitarian aid specialists, they might have succeeded in getting the supplies to Afghanistan quicker and in a more efficient manner.

As I entered my second quarter, I realized this was going to be a bigger project than I first estimated. I then set out to find a colleague. Major Brian Horine, a friend from my previous assignment in the 96th Civil Affairs (CA) Battalion, had just started classes at NPS. Major Horine had a desire to pursue a similar project based on his experience in the 96th CA Battalion and a recent workshop with the Center for Stabilization and Reconstruction Studies, which he had attended in the summer of 2006. Information sharing between the military, NGOs, IOs and government agencies was the topic of the last day of the workshop.

The group concluded that a system needed to be developed for information sharing, but nobody had the time, money, or personnel to set up such an organization. Therefore, we combined our efforts and expertise on this thesis.

² The Denton Program is a commodities transportation program authorized under Title 10 U.S.C. Section 402 and jointly administered by the U.S. Agency for International Development (USAID), the Department of State (DOS), and the Department of Defense (DoD). The Denton Amendment provides the authority for DoD to use extra space on U.S. military cargo aircraft to transport humanitarian assistance materials donated by non-governmental organizations (NGOs), international organizations (IOs), and private voluntary organizations (PVOs) for humanitarian relief. Since Denton is a space available program, it is impossible to predict when transportation will be provided; therefore, no guarantees can be made regarding completion of a shipment. Information on the Denton Amendment may be found at the US Agency for International Development's web page. USAID [Web site]; available from: http://www.usaid.gov/our_work/cross-cutting_programs/private_voluntary_cooperation/dentonguidelines.html; Internet; accessed 9 November 2006.

D. BENEFITS OF RESEARCH

This thesis will not simply provide a theoretical answer to these questions, it will also provide a practical prototype of a web site. The Beta model, along with all of the research, will then be handed over to an organization or institution. We will identify a problem; provide a recommended course of action, then implement that course of action.

E. METHODOLOGY

- Conduct interviews with military personnel, government workers, IOs, NGOs and various institutes that deal with security, stability, transition, and reconstruction. E.g. Mercy Corps, Interaction, and The Peace Operations Program at George Mason University.
- Research on books, articles, military doctrine, and scholarly works pertinent to the topic.
- Conduct research at Fort Bragg and at the Pentagon to identify similar initiatives that have already been undertaken.
- Conduct analysis of current web sites to determine what similar projects are already in existence; this is essentially a market analysis of our competitors.
- Participate in the CSRS (Center for Stabilization and Reconstruction) games at NPS.

F. ORGANIZATION OF THESIS

Chapter II will focus on the issue of civilian-military relations. We will address the history of civilian and military relations and determine if there is a separation between these communities. We will then identify what have been the effects of this separation, has there been any improvement, and determine if there is a desire for increased cooperation. We will conclude the chapter with a proposal on how to fix the problem and whether or not there exists any similar endeavors.

In Chapter III, we will discuss networks. We identify networks in history, classify different types of networks topologies, and determine how the information age has facilitated the rapid expansion of networks. We will then analyze the web-based phenomena of “communities of interest” and the advent of the second generation of the Internet called Web 2.0.

In Chapter IV, we will address the intricate components of the web site from personnel to the capabilities that we envision being used to deliver the function-ability of ICIN. Chapter IV will also present illustrations of the organizational model, information flow through the website and the network of stakeholders. We will conclude the thesis with Chapter V.

THIS PAGE INTENTIONALLY LEFT BLANK

II. CIVILIAN-MILITARY RELATIONS

The only thing that will redeem mankind is cooperation.

Bertrand Russell³

Historically, there has been a separation between the U.S. military and outside agencies, to include non-governmental organizations (NGOs) and international organizations (IOs). These communities often have held misconceptions, biases, and stereotypical misperceptions of each other. Yet ironically, these communities have been working in the same areas in similar operations and on overlapping projects. The results or effects of such widespread misimpressions of each other have often been a breakdown of communications, duplication of work, and a loss of lessons learned. Furthermore, these effects have sometimes degraded the ability of the military to accomplish its missions in the new types of operations upon which it has recently embarked, specifically Stability, Stabilization, Transition, and Reconstruction (SSTR). SSTR is defined as “Department of Defense activities that support U.S. Government plans for stabilization, security, reconstruction and transition operations, which lead to sustainable peace while advancing U.S. interests”.⁴

It is imperative that the military and outside agencies cooperate more effectively with each other. In doing so, they will be able to improve security and stability in countries that have been ravaged by natural and manmade disasters. Not only is more of this sort of cooperation needed, many in the international community recognize the need and have affirmed the desire to cooperate. From this observation, we ask the question: How can we develop a system to share information and lessons learned and collaborate on humanitarian activities within the international community? From this question we

³ Proverbial.net [Web site]; available from: <http://en.proverbial.net/citastema.asp?tematica=258&page=2>; Internet; accessed 21 November 2006.

⁴ When I mention the term SSTR throughout this paper, I mean to include every type of operation other than high intensity conflict including for example, peace keeping and peace enforcement operations, natural disaster and famine relief, humanitarian operations, and the like. Furthermore, SSTR is the new “catch phrase” for the Department of Defense (DoD) to describe these operations. The term SSTR was first published in the DoD Directive 3000.05. SSTR also replaces older terms that described these operations like Stability and Support Operations (SASO) and Military Operations Other Than War (MOOTW).

have come to the following hypothesis: Information sharing and collaboration on lessons learned can be accomplished through a Web-based network.

A. HISTORY OF MILITARY AND NGO RELATIONS AND WORKSPACES

The relationship between the military and numerous NGOs and IOs has a varied history. First, many NGOs and IOs are relatively young compared to the military. Second, the face of conflict has changed quite drastically over the decades, often forcing these communities into shared missions and locations.

The U.S. Army dates back to June 14, 1775, a year before our declaration of independence from England. Many NGOs were not established however, until the mid to late twentieth century. For example, one of the most famous NGOs, Médecins Sans Frontières⁵, was not founded until 1971. Air Serv International,⁶ an NGO that provides aircraft for humanitarian operations, was not founded until 1985. There are some older NGOs like the International Rescue Committee⁷ and the International Organization for Migration,⁸ which were founded in 1945 and 1951 respectively. While there are some a bit older, like the Red Cross, which is 125 years old (founded in 1881 by Clara Barton), most were not founded until the post World War II era. Hence, their relationships with the military are relatively quite new.

In general, this refers to the NGOs of today. In the 19th and 20th centuries, faith based and missionary organizations generated a tremendous presence in the world. They were the NGOs of their time. The exact numbers of these missionaries are unknown since many of the individual denominations kept their own records, some of which may

⁵ Doctors Without Borders/Médecins Sans Frontières (MSF) is an international independent medical humanitarian organization that delivers emergency aid to people affected by armed conflict, epidemics, natural or man-made disasters, or exclusion from health care in more than 70 countries. Médecins Sans Frontières, [Web site]; available from: <http://www.doctorswithoutborders.org/home.cfm>; Internet; accessed 1 June 2006.

⁶ Air Serv International is a unique nonprofit humanitarian organization that uses aircraft to fly relief workers and supplies to help victims of disasters around the world. Air Serv International [Web site]; available from: <http://www.airserv.org/>; Internet; accessed May 28, 2006.

⁷ The International Rescue Committee seeks to bring attention to forgotten or neglected crises and to pressure governments and international organizations in various locations to take action to help and protect refugees, displaced people and other victims of conflict. International Rescue Committee, [Web site]; available from: <http://www.theirc.org/>; Internet; accessed June 10, 2006.

⁸ As the leading international organization for migration, IOM acts with its partners in the international community to assist in meeting the growing operational challenges of migration management. International Organization for Migration, [Web site]; available from: <http://www.iom.int/>; Internet; accessed on June 10, 2006.

have been erroneous. However, as Mead explains, “One listing counts about five thousand American Protestant missionaries abroad in 1900, with the number increasing to more than nine thousand by 1915”.⁹ As Mead continues his discussion, he explains these numbers include full-time missionary workers only and are not reflective of wives, support personnel, doctors, and the like. This figure would culminate in 2000 with approximately one hundred thousand American missionaries working abroad.¹⁰ With missionary presence increasing worldwide, so was their increased contact with the military. As wars have increased in frequency, missionaries have become more susceptible to the dangers of war and have sometimes looked to the military to deliver them from such dangers. In these circumstances, Mead reveals that missionaries “welcomed the presence of Western troops when their lives and property were endangered.”¹¹

Secondly, wars and conflicts have transformed in intensity, type, and involvement over the decades. The American Civil War and World War I were high intensity, conventional wars. Battles were fought on clearly defined battlefields, which may or may not have been in a village or city, and civilians either were moved or became victims. The belligerents were conventional military forces. Civilians, in many cases, were an afterthought. Additionally, the belligerents had altered their tactics and thereby had drawn civilians into active warfare. In the past, armies mostly fought armies. While civilians were often injured as a result of collateral damage, or were located in or near a factory, which was considered a strategic objective, they were essentially ignored. As wars have progressed, though, civilians are more frequently becoming the specific target of terrorists and insurgents. As underscored by a recent article on insurgent activities in Afghanistan, “The minister [Afghan Education Minister Mohammed Hareef Atmaf] claimed insurgents were switching to attacks on soft, unguarded targets because of the country's strengthening domestic military and police forces.”¹²

⁹ Walter Russell Mead *Special Providence: American Foreign Policy and How it Changed the World*. (New York: Routledge, 2002), 142.

¹⁰ Ibid., 142.

¹¹ Walter., 144.

¹² Chris Hawke, “School Security Beefed Up” *The Miami Herald*, 14 August 2006 [newspaper online]; available from: <http://nl.newsbank.com/nl-search/we/Archives>; Internet; accessed 20 August 2006.

Since World War I, the conduct of war has changed. The United Nations (U.N.) was established (on 26 June 1945, when the UN Charter was signed), and conflicts have become quite frequent, though, in some cases, less intense. New missions have entered into our lexicon like low intensity conflict and peacekeeping missions. With these new operations and the emergence of more and more NGOs and IOs, the world has become a bit more crowded.

With reference to peacekeeping missions, Landon and Hayes explain: “In its first 43 years, the U.N. Security Council authorized 13 peacekeeping operations. In the 43 months from 1988 to 1992, U.N. Member States authorized 13 additional operations (see Figure 1).”¹³

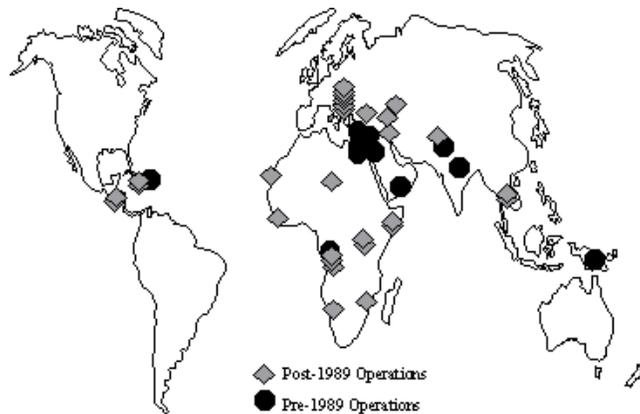


Figure 1. UN Peace Operations.

The U.N. was not the only organization to enter into new mission sets. In their article, *Who's Keeping the Peace*, Bellamy and Williams present a chart of numerous non-U.N. peace operations just in the last decade (see Table 1).¹⁴ Various nations have conducted these peace operations around the world, which further created overlapping areas of operation for the military and civilian relief agencies.

¹³ Richard Hayes and James Landon, “National Approaches to Civil-Military Coordination in Peace and Humanitarian Assistance Operations” *Evidence Based Research, Inc.* [article online]; available from: http://www.dodccrp.org/research/bosnia/landon_hayes.htm; Internet; accessed 12 March 2006, 2.

¹⁴ Alex J. Bellamy and Paul D. Williams, “Who’s Keeping the Peace?” *International Security* Vol. 29, No. 4, Spring 2005, [journal online]; available from: http://muse.jhu.edu/journals/international_security/v029/29.4bellamy.html ; Internet; accessed 14 May 2006, 166.

Table 2. Non-United Nations Peace Operations, 2003-04

Operation ^a	Duration	Location	Authorizing Body ^b	Operational Command ^c	Approximate Size
Joint Control Commission	1992–present	Georgia/South Ossetia	Russia–Georgia–South Ossetia	Russia	1,500
Unnamed	1994–present	Georgia-Abkhazia	CIS	Russia	2,000
SFOR	1996–2004	Bosnia	UN	NATO	11,900
KFOR	1999–present	Kosovo	UN	NATO	20,000
Operation Palliser	2000–present	Sierra Leone	United Kingdom–Sierra Leone	United Kingdom	1,300
SAPSD ^d	2001–03	Burundi	South Africa–Burundi	South Africa	750
Allied Harmony	2002–03	Macedonia	NATO	NATO	470
ISAF	2002–present	Afghanistan	UN	NATO since 2003	5,500
Unnamed	2002–present	Central African Republic	CEMAC	CEMAC	390
Operation Licorne	2002–present	Côte d'Ivoire	France	France	4,000
Operation Concordia	2003	Macedonia	EU	EU	400
Operation Artemis	2003	Democratic Republic of Congo	UN	France	1,500
AMIB	2003–04	Burundi	AU	AU	3,250
ECOMIL	2003–04	Liberia	ECOWAS	ECOWAS	3,200
ECOMICI	2003–04	Côte d'Ivoire	UN-ECOWAS	ECOWAS	1,500
Helpem Fren	2003–present	Solomon Islands	Australia–Solomon Islands	Australia	3,000
AU Monitors and Protection Force	2004–present	Darfur, Sudan	AU	AU	3,000
EUFOR	2004–present	Bosnia	UN	EU	7,000

^aAbbreviations used: SFOR (Stabilization Force), KFOR (Kosovo Force), SAPSD (South African Protection Support Detachment), ISAF (International Security Assistance Force), AMIB (African Union Mission in Burundi), ECOMIL (Economic Community of West African States Mission in Liberia), ECOMICI (ECOWAS Mission in Côte d'Ivoire), and EUFOR (European Union Force).

^bThe SAPSD was integrated into AMIB in May 2003.

^cAbbreviations used: CIS (Commonwealth of Independent States), NATO (North Atlantic Treaty Organization), CEMAC (Economic and Monetary Union of Central African States), EU (European Union), AU (African Union), and ECOWAS (Economic Community of West African States).

Table 1. Multi-lateral Non-UN Peace Operations.

Table 1 above is but a partial list of peace operations. For a more complete list, see Appendix A, which provides a comprehensive list from the Stockholm International Peace Research Institute (SIPRI) Yearbook and the United Nations Peace Keeping online home page of both UN and non-UN missions as of 2006. All told, Appendix A lists 54 UN peacekeeping missions, 32 non-UN multi-lateral missions, and nine US combat missions or wars. As these conflicts and missions have increased and changed, so has the relationship between the military and the civilian community. It was not until the latter part of the 1980s that these communities began to operate contiguously. Not only did they begin to work closely together; they became dependent on each other. As Landon and Hayes further explain:

During traditional peacekeeping deployments prior to the late 1980s, there was no particular need for interaction between political/military and humanitarian concerns. Today, international and non-governmental organizations have become increasingly important in the formulation of political, social, or economic solutions to complex political emergencies. In most cases, they are a crucial part of the solution.¹⁵

A recent study conducted by the RAND Corporation addressed this relationship in depth. The study underlines the fact that since the end of the Cold War, the U.S. military has been involved in an abundant number of conflicts, operations, and missions, which brought it “into frequent contact with the civilian missions operating in the areas in question. The civilian-military interaction has varied from cooperation and coordination in some cases to friction and contention in others”.¹⁶

The question arises, though, if these communities are reliant on each other as Landon and Hayes posit, why is there a separation between these communities? Additionally, is there even a separation at all between them?

B. IS THERE A SEPARATION?

We must first point out that the type of relationship between these communities depends on the type of operations in which they are involved. In benign missions, like providing assistance during a natural disaster (a tsunami in Indonesia or earthquake in Pakistan for example), relationships tend to be quite cooperative. As highlighted in the RAND study, “In these situations [disaster relief], the military acts in a humanitarian support role. There is no fundamental clash between the missions of the humanitarian assistance (HA) providers and the military.”¹⁷ However, these HA missions are rare. Most missions will occur in more hostile environments, and that is where we will focus our attention.

There are some conflicting values, from both the military and civilian sector, that have led to this separation between the communities. As the Department of Defense’s (DoDs) Joint Publication 3-08 explains, “Each agency has core values and legal

¹⁵ Landon and Hayes, 2.

¹⁶ Olga Oliker et al., *Aid During Conflict: Interaction Between Military and Civilian Assistance Providers in Afghanistan, September 2001–June 2002* (Santa Monica, CA: RAND, 2004), 39.

¹⁷ *Ibid.*, 7.

requirements that it will not compromise. These values form the foundation upon which key functions of the agency grow. In any interaction, all participants must be constantly aware that each agency will continuously cultivate and create external sources of support and maneuver to protect its core values”.¹⁸

While the U.S. military has been working in close proximity to NGOs and IOs, these communities have not done so with an attitude of cooperation. As Francis Abiew explains, “the various civilian and military actors involved in peace operations have not always, necessarily, acted jointly, or in concert to achieve the desired aims of sustainable peace. Several areas of tension still exist between the two groups.”¹⁹

The problems go both ways: NGOs quite often will vocally express their desire to distance themselves from the military and other governmental agencies. This attitude was best demonstrated at a recent Strong Angel (SA III) exercise in San Diego California, which was held in August 2006.²⁰ At this event, there was a group of ten NGOs, to include Save the Children, and they created and displayed the sign, seen in the following picture (see Figure 2). It has been said that a picture is worth a thousand words; this picture definitely supports that claim. This sign may have been written tongue in cheek, but it speaks volumes. The picture reveals the inherent distrust of other agencies, yet also expresses their desire to educate others on their ideology and a desire to learn about others’ missions and purposes.

SA-III focused on simulating those aspects of post-disaster conditions that specifically impact communication, information sharing, and coordination. The weeklong demonstration consisted of a series of collaborative technical and non-technical experiments based on both lessons learned in past disasters and on emerging requirements for integrated operations.

¹⁸ Department of Defense Joint Publication 3-08 *Interagency, Intergovernmental Organization, and Nongovernmental Organization Coordination During Joint Operations* Vol. I March 17, 2006, 18.

¹⁹ Francis Kofi Abiew "From Civil Strife to Civic Society: NGO-Military Cooperation in Peace Operations," Faculty Occasional Paper, Carleton University, 2003, [article on line]; available from: http://www.carleton.ca/csds/occasional_papers/NPSIA-39.pdf; Internet; accessed 10 February 2006, 5.

²⁰ SA-III focused on simulating those aspects of post-disaster conditions that specifically impact communication, information sharing, and coordination. The weeklong demonstration consisted of a series of collaborative technical and non-technical experiments based on both lessons learned in past disasters and on emerging requirements for integrated operations.

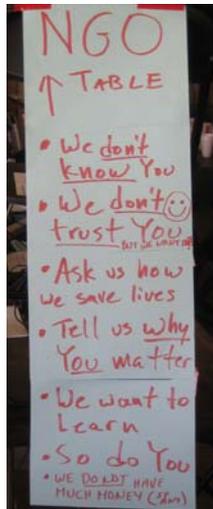


Figure 2. Photo of a sign at a NGO table at SA III.²¹

Although many in the military would like to fault NGOs for all the problems, we share the blame. Service members tend to see NGOs and IOs as being constituted by incompetent, liberal, “tree-hugging” hippies. As Abiew points out the results have been that, “military forces have made very little effort to engage NGOs. They lack an understanding of the different hierarchies, charters, distinctions, and modes of operation of NGOs.”²²

Even when there has been information sharing between these communities, the military has sometimes done so without complete fairness. Operation Enduring Freedom (OEF) was a watershed event for cooperation between the military and humanitarian organizations. However, it was fraught with many problems as well. While the Army’s Central Command (CENTCOM) established liaison billets for IOs and NGOs, the information flow seemed to go one way. As the RAND study explains, “Some U.N. and NGO representatives were frustrated with the liaison arrangement, because they believed that they were providing information to CENTCOM without receiving a free flow of information in return.”²³

From the NGO perspective, there is an innate and reasonable desire to maintain distance from the military for fear of becoming tainted or accused of collaboration.

²¹ Personal photo provided by NPS faculty member, Sue Higgins. The picture was taken at the SA III HA/DR Exercise on 25 August 2006.

²² Abiew, 12.

²³ Olga Olikier et al., 41.

NGOs and IOs need to maintain impartiality and a perception of being altruistic. As highlighted in a United Nations handbook, “Humanitarian actors must not allow themselves to become allied with a party to a conflict”.²⁴ If local populations or warring factions suspect NGOs and IOs of working with the military, these locals or belligerents could possibly shun or even target the aid workers. Dziedzic and Seidl substantiate this more by emphasizing that: “The International Committee of the Red Cross and MSF or Doctors Without Borders maintain a strict separation from belligerent military forces, even espousing neutrality.”²⁵ Dziedzic and Seidl further posit:

[Access to these populations] may be compromised or lost entirely if the assistance community is perceived as undermining the interests and objectives of one of the parties to the conflict or having partisan sympathies. Any taint of association generates a risk that the faction perceiving itself to be disadvantaged will consider humanitarian actors a threat and target their staff and facilities.²⁶

Some critics’ antagonism toward the military stems from their biased opinions. They believe that the military should not involve itself in these types of missions at all. As Pugh explains:

Military personnel are not ideally suited to humanitarian work; they lack training, expertise and appropriate policy configurations for building local capacities and accountability to local populations; above all, military acts are inherently political and usually connote partisanship – in contrast to traditional “humanitarianism”, which is idealized as morally autonomous and not politically conditioned or imposed.²⁷

In discussing the affects of the U.S. military conducting “humanitarian” assistance, Guttieri explains that “MSF [Médecins Sans Frontières] departed [Afghanistan] with a closing salvo against the military for blurring the boundaries of

²⁴ Steven Wolfson and Neill Wright, *A UNHCR Handbook for the Military on Humanitarian Operations* (January 1995)

²⁵ Michael J. Dziedzic, and Michael K. Seidl, and the United States Institute of Peace. “Provincial Reconstruction Teams and Military Relations with International and Non-governmental Organizations in Afghanistan,” Special Report; 147; Washington, D.C: United States Institute of Peace, 2005, [article online; available from: <http://www.usip.org/pubs/specialreports/sr147.html>]; Internet; accessed February 10, 2006.

²⁶ Ibid., 2005.

²⁷ Abiew, Pugh as quoted by Abiew, 10.

humanitarian space by directly delivering aid.”²⁸ Part of MSF’s complaint, along with many other NGOs, was that military was conducting these operations while wearing civilian clothing and growing beards, so as to melt in with the local populace (see Figure 3). This only furthered the disdain many NGOs already had of the military. This situation was emphasized in the RAND study, which stated:

Many civilian aid providers believed their ability to perform their humanitarian mission [in Afghanistan] was placed in real jeopardy by U.S. Army civil-affairs [sic] officers (and others, including U.S. and UK Special Operations units in the south) dispensing assistance while wearing civilian clothing.²⁹



Figure 3. Photo of an unnamed CA officer.³⁰

Surprisingly, a large cause of the separation between the military and NGOs comes down to the simple usage of words, or semantics. There has been much debate over the use of the term “humanitarian” in the US military’s doctrine and vernacular. Joelle Tanguy, U.S. Executive Director of Doctors Without Borders, best describes the NGO community’s feelings about the military’s involvement in humanitarian missions

²⁸ Karen Guttieri, “Humanitarian Space in Insecure Environments: A Shifting Paradigm,” *Strategic Insights*, Volume IV, Issue 11 (November 2005): 2.

²⁹ Olga Oliker et al, 92.

³⁰ Photo provided by author [Catanzaro].

when she said, “It [humanitarian intervention] conveys the civilian action to provide assistance in the face of the consequences of crises, it does not include the political and military actions deployed in response to the causes of crises.”³¹ Tanguy continues her discourse by positing;

The expression itself "humanitarian military intervention" and its associated legalistic rationale the "right to intervene", or "authority to intervene", mix two approaches which, though not mutually exclusive, weaken each other when they are combined. Both approaches may be necessary, but in order to serve their purposes, we believe that humanitarian and military work must carry out [sic] independently.³²

While some of these complaints and opinions may be accurate, they are not all soundly founded on fact. First, the military is not only capable of conducting SSTR, the military is directed to conduct such operations. For example, the 4th Geneva Convention obligates occupying powers to care for local populations. Articles 55 to 61 relate to assistance, obliging the occupying power OP to,

- Ensure adequate food and medical supplies for the population (art. 55);
- Maintain hospitals, public health and hygiene (art. 56);
- Agree to relief schemes where the population is inadequately supplied (art. 59). These relief schemes may be undertaken by states or by impartial humanitarian agencies such as the ICRC (art. 59). Such schemes cannot relieve the OP of its obligations under arts. 55, 56 and 59 (art. 60).³³

Furthermore, DODD 3000.05 is the new doctrine that mandates the US military to conduct SSTR (discussed later in chapter).

C. WHAT HAVE BEEN THE EFFECTS OF THE SEPARATION?

Having addressed the issue of a separation and some of its causes, we will now discuss the effects this gap has had on operations. Often, the military and NGOs have entered into operations midstream, ill prepared and incapable of properly completing

³¹ Joelle Tanguy, “Intervention, Protection and Humanitarian Assistance at a Crossroad”, Paper delivered by MSF at the World Affairs Council, San Francisco, 28 March 2000.

³² Ibid.

³³ Joe McClellan, SCHR Position Paper on Humanitarian-Military Relations in the Provision of Humanitarian Assistance (18 October 2004): 5.

their mission. They may have avoided this situation had the parties involved simply met with one another to share information. In his discussion on Somalia, Abiew contends that,

Many NGOs started operations [in Somalia] after the military intervention, [however, many were there beforehand as well] lacking both the experience and knowledge of the country, or even what had taken place before their arrival. The result was poor coordination partly stemming from the unwillingness to consult those with knowledge of the situation.³⁴

Additionally, most service members receive very little cultural training, language training, or experience in operations other than war.³⁵ The military has deployed into theaters of operations, and yet its forces have failed to perform to their fullest potential because of their ignorance of local customs, beliefs, and traditions. Since military personnel quite often deploy to areas on short notice, and often for a limited amount of time, they stand to benefit greatly from NGOs and IOs already on the ground. Many of these humanitarian organizations work overseas for years at a time, and their representatives become regional experts. These NGOs and IOs are capable of providing the military with a plethora of information on local customs and tribal organizations or hierarchies without compromising their partiality.

D. A HISTORY OF INCREASED COOPERATION.

Since the end of the Cold War, the U.S. government, military, NGOs and IOs have worked together with an increased frequency and in more hostile and austere environments. An exhaustive compilation of examples is difficult to ascertain because, unlike the SIPRI Yearbook, there is no one organization that tracks NGO operations due to the amount of NGOs in existence. As Carey and Richardson try to explain, “The sheer number of NGOs makes it difficult to have an overview of their activities”.³⁶ However, there have been a number of individuals and groups that have presented partial information on the subject. For example, there is some literature on the presence of NGO

³⁴ Abiew, 12.

³⁵ This is not true for those in the Special Operations Forces or SOF. Army Special Forces, Psychological Operations, Civil Affairs, and Navy SEALs all conduct language training and regional and cultural studies, making them well suited for these types of operations. Therefore, while Pugh’s comment may be accurate for the conventional military, it is not correct for SOF.

³⁶ Henry F. Carey and Oliver P. Richmond, *Mitigating Conflict: The Role of NGOs* (London: Frank Cass Publishers, 2003), 29.

operations in the Balkans, Afghanistan and Iraq.³⁷ As we present these examples, we show how the proliferation of NGOs is a large cause of the overlapping of mission sets.

Part of the cause for the converging areas of operations between NGOs and the military is the fact that the number of NGOs have grown exponentially over the years. For example, in 1939, there were only 700 NGOs but by the mid 1990s “UNDP estimated their number to be around 50,000 [in the US], this figure represented only those authorized to receive support from outside donors...[additionally] 16,000 registered in Bangladesh, 21,000 in the Philippines, 100,000 Christian-based ones in Brazil, and 27,000 in Chile”.³⁸ (These figures include both domestic and international NGOs.) Furthermore, the Yearbook of International Organizations explains that there are, “more than 26,000 international NGOs with an annual budget of over US\$6 billion.”³⁹

That having been said, there are numerous examples of cooperation amongst these communities. For example, in the 1990s, the U.S. government and NGOs shared a great deal of information and cooperation in the Great Lakes region of East Africa during crises in Rwanda, Burundi, and the Democratic Republic of the Congo. As Laipson explains, “the government was willing to share satellite imagery...and other intelligence-derived information. In turn, NGOs on the ground with satellite phones and other modern means of communication were often able to send back ‘ground truth’ reporting”.⁴⁰

Some of the first modern-day examples of cooperation were seen right after the Persian Gulf War, or Operation Desert Storm. As Weiss explains, “In OPC [Operation Provide Comfort], the military and NGOs were thrown together on a large scale for the first time outside of a natural disaster.”⁴¹ This “teamwork” would not stop here but continued into the Balkans.

NGOs were quite prevalent in the Balkans during the 1990s and into the 21st Century. As Carey and Richmond explain, “the number of NGOs [in Bosnia] grew from

³⁷ This is discussed in detail later in this section. The Center for Disaster and Humanitarian Assistance Medicine report provides details on these NGOs.

³⁸ Thomas Weiss, *Military Civil Interactions: Intervening in Humanitarian Crises*. (Lanham: Rowman & Littlefield Publishers, 1999), 28.

³⁹ *Ibid.*, 120.

⁴⁰ Ellen B. Laipson, “Information-Sharing in Conflict Zones: Can the USG and NGOs Do More?” *Journal of the American Intelligence Professional*, 2005, [journal online]; available from: https://www.cia.gov/csi/studies/vol49no4/USG_NGOs_5.htm; Internet; accessed 15 August 2006.

⁴¹ Weiss, 57.

a handful in the mid-1990s to around 1,500 half a decade later.”⁴² With these large numbers of NGOs also came instances of cooperation. According to a recent study published by the Wharton School at the University of Pennsylvania, “in some situations, NGOs have been useful to the implementation of peacekeeping operations. For example, in Bosnia, the NATO IFOR and SFOR troops were asked to promote cooperation on the ground by using the leverage of NGOs to create civilian supports to the General Framework Agreements for Peace.”⁴³

The attacks on September 11, 2001 initiated a new era of conflict, which also provided new opportunities for NGOs, IOs and militaries to work together. NGOs and IOs have had a long history of work in Afghanistan. However, when the Taliban usurped control of the country, they cracked down on NGO activities. Once the US-led coalition, along with the Northern Alliance, wrested control of the central government away from the Taliban, NGOs and IOs experienced more freedom to operate. According to the Center for Disaster and Humanitarian Assistance Medicine (CDHAM), by August 2003, “over 150 international NGOs and over 300 local NGOs [were] present in Afghanistan.”⁴⁴ These numbers do not give a complete understanding of the numbers of actual NGO workers, since some of the NGOs had robust staffs. For example, “CARE International employs over 700 Afghans inside Afghanistan...[and] the Swedish Committee for Afghanistan (SCA), arguably the largest NGO in Afghanistan at this time, is said to employ over 6,000 Afghans.”⁴⁵

Having established the large numbers of NGOs in the country, CDHAM continues their discussion of collaboration, explaining that

Some NGOs [in Afghanistan] have coordinated some of their efforts with ISAF in Kabul or the US and Allied forces in the country. Such assistance can involve

⁴² Carey and Richmond, 111.

⁴³ Lakshmi Ramarajan et al. *Successful Conflict Resolution Between Peacekeepers and NGOs: The Role of Training and Preparation in International Peacekeeping in Bosnia*, January 2002; [article online]; available from: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=305206; Internet; accessed 25 September 2006, 4.

⁴⁴ Grey Fradsen, *A Guide to NGOs: a Primer About Private, Voluntary, and non-Governmental Organizations That Operate in Humanitarian Emergencies Globally*, Afghanistan Case Study, 2003, Center for Disaster and Humanitarian Assistance Medicine, 10.

⁴⁵ *Ibid.*, 11.

convoy protection, general security updates, land-mine removal coordination, or petitions for assistance in specific areas.⁴⁶

NGO presence in Iraq was no less remarkable. In August 2003, CDHAM reported over 219 NGOs in Iraq,⁴⁷ a number which has increased since that time. Thought the exception rather than the rule, CDHAM explains that, “There [were] regular meetings hosted by the coalition military forces in Baghdad and other regions that have been established for the primary purposes of coordinating humanitarian and security efforts.”⁴⁸

E. IS COOPERATION NEEDED OR WANTED?

In the future, these communities will only continue to work more frequently together and rely on each other for mutual support to conduct SSTR. It is therefore vital that these agencies develop methods and systems to work more efficiently with one another. Jalovcic highlights this point by insisting that

New spaces for debate, learning and interaction should be created, and **lessons from previous cooperative work recorded and analyzed** [emphasis added]. Military and civil players should be involved in consultation at the strategic and operational levels, and appropriate ways of communication and working along established.⁴⁹

Jalovcic is not the only one advocating change. Throughout our research, we have established that every part of the U.S. government, with which we have spoken during our research, is incredibly desirous and enthusiastic about becoming more involved with NGOs, IOs and interagency actors. This sentiment was best expressed by former Secretary of State Colin Powell when he exclaimed, “NGOs are a multiplying

⁴⁶ Grey Fradsen, *A Guide to NGOs: a Primer About Private, Voluntary, and non-Governmental Organizations That Operate in Humanitarian Emergencies Globally*, Afghanistan Case Study, 2003, Center for Disaster and Humanitarian Assistance Medicine, 15.

⁴⁷ Grey Fradsen, *A Guide to NGOs: a Primer About Private, Voluntary, and non-Governmental Organizations That Operate in Humanitarian Emergencies Globally*, (Iraq Case Study, 2003, Center for Disaster and Humanitarian Assistance Medicine, 10

⁴⁸ Fradsen, 17.

⁴⁹ Djenana Jalovcic, “Weak States and Sudden Disasters and Conflicts: The Challenge for Military-NGO Relations,” Montreal, Quebec: Institute for Research on Public Policy, 2005 [article online]; available from: <http://www.irpp.org/events/archive/jun05NGO/jalovcic.pdf>; Internet; accessed 10 February 2006, 7.

force of our combat team.”⁵⁰ This attitude may seem ironic, especially since President George W. Bush ran for president on a platform that advocated not involving the military in nation-building missions. This position was vocalized by Condoleezza Rice when she, in 2000, famously declared that, “We don’t need to have the 82nd Airborne escorting kids to kindergarten.”⁵¹ However, his administration has now implemented doctrine to the contrary.

As a result, the U.S. military has made a one hundred eighty degree turn in its policy on SSTR, which includes working with and sharing information with NGOs. Landon and Hayes explain: “U.S. doctrine has increasingly recognized that military commanders must consider the presence and capabilities of NGOs and PVOs [Private Volunteer Organizations, a term no longer used, for the most part] and attempt to coordinate and cooperate with their efforts.”⁵²

Since the commencement of the wars in Afghanistan and Iraq, the administration has published two important documents that have revolutionized military doctrine: DoD Directive 3000.05 (DODD 3000.05) and National Security Presidential Directive 44 (NSPD-44). DODD 3000.05 essentially puts SSTR on par with combat operations. The Directive states that, “Stability operations are a core U.S. military mission that the Department of Defense shall be prepared to conduct and support. They shall be given priority comparable to combat operations.”⁵³ Similarly, NSPD-44 outlines the job description of the position mentioned in 3000.05 as being responsible for, “Develop[ing] strategies to build partnership security capacity abroad and seek to maximize non-governmental and international resources for reconstruction and stabilization activities.”⁵⁴

⁵⁰Rafa Vilasanjuan *The Increasing Presence of Military Forces and the Independence of NGOs: The NGO Perspective* [article online]; available from: <http://www.icva.ch/cgi-bin/browse.pl?doc=doc00000996>; Internet; accessed 6 August 2006.

⁵¹ Justin Logan and Christopher Preble, *Are Failed States a Threat to America? The Bush administration’s nation-building efforts are a big mistake*, July 2006 [article online]; available from: <http://www.reason.com/0607/fe.jl.are.shtml>; Internet; accessed 15 August 2006.

⁵² Hayes and Landon, 6.

⁵³ Department of Defense Directive 3000.05 Military Support for Stability, Security, Transition, and Reconstruction (SSTR) Operations (November 28, 2005), 2.

⁵⁴ Presidential Directive, The White House. National Security Presidential Directive/NSPD-44, Management of Interagency Efforts Concerning Reconstruction and Stabilization. Washington D.C.: Government Printing Office, 2005, 1.

NGOs have also expressed the need and desire, to cooperate and share information. Guttieri points out that many in the NGO community say “Information sharing is a prominent concern, if simply to indicate who is doing what and why.”⁵⁵ Furthermore, one participant in her survey remarked, “better clarity and more systematic and focused effort to communicate purpose by all organizations operating in an emergency can help improve collaboration without abrogating the organization’s key principles or protocols.”⁵⁶

F. HOW DO WE FIX THE PROBLEM?

In our introduction, we asked the question: How can we develop a system to share information and lessons learned and collaborate on humanitarian activities within the international community? We further stated our hypothesis, which was information sharing and collaboration of lessons learned⁵⁷ can be accomplished through a web-based network. The impetus for this hypothesis comes from a web site that performed this type of function for the military. Two West Point professors, Tony Burgess and Nate Allen, created the website, which they named Company Command.⁵⁸ This idea took hold on the younger military officer population, was eventually purchased by the United States Military Academy (USMA) at West Point, and is now funded by the Army.⁵⁹

Sharing information with the civilian sector is problematic, though. The Army conducts all web-based business on one of three portals, the Non-secure Internet Protocol Router Net or NIPR (for unclassified but official use), the Secure Internet Protocol Router Net or SIPR (for secret message traffic), and Joint Worldwide Intelligence Communications System or JWICS (for top-secret message traffic). All of these portals

⁵⁵ Guttieri, 3.

⁵⁶ Ibid., 3.

⁵⁷ Through the research conducted, we determined that the term “lessons learned” was too militaristic. Every time we briefed our proposal to NGOs, they were turned off by the term. We agonized over various terms like “Best Practices”, “After Action Reviews” and “Debriefs”. To address this problem, Major Horine, finally created an acronym called TIPS, which stands for Techniques, Insights, and Problems Solved. Henceforth, we will replace the term lessons learned with TIPS.

⁵⁸ Company Command is the original name for a website that was created by officers, for officers in the US Army. Tony Burgess was a Captain when he created the website for junior officers to share common experiences and gain insight into their roles as leaders in the military. The website has now been adopted and funded by the US Army. Companycommand.com, [Web site]; available from: <http://companycommand.army.mil>; Internet; accessed 12 November 2005.

⁵⁹ Dixon, Nancy M. et al., *Company Command: Unleashing the Power of the Army Profession*, (West Point, NY. Center for the Advancement of Leader Development and Organizational Learning, 2005), 198.

are closed within the Department of Defense; therefore, they cannot interact with the civilian sector. For this reason, Dr. Lin Wells, former acting Director of Assistant Secretary of Defense for Networks, Inter-operability, Integration (ASD-NII) recently commented that “SSTR must include one or more ‘EXTRA-NETS’ to engage with non-traditional partners like NGOs, aid organizations, indigenous security forces, commercial firms, etc.”⁶⁰

Another issue arises from the NGO and IO communities. Through much of our research, the civilian actors have emphasized repeatedly that if such a system is created, the civilian sector will not participate if it is on a government run site. Basically, if the web site URL contains “.gov” or “.mil” in the address, the NGOs and IOs will not utilize it. Therefore, we recommend the creation of a web-based network independent of any military or government organization. This web site or network is the focus of our thesis, which we have named the International Crisis Information Network or ICIN.

The operative goals of this network will be to reduce the separation between these communities (though that gap will most likely never be removed completely), capture lessons learned or TIPS, and jointly provide a more efficient service to our customer base, those adversely affected by natural and man-made disasters. As highlighted in the U.S. military’s joint publication, “Successful interagency, IGO [International Government Organizations], and NGO coordination enables the USG [U.S. Government] to build international support, conserve resources, and conduct coherent operations that efficiently achieve shared international goals.”⁶¹

G. IS THIS NOT ALREADY BEING DONE?

Since we have begun our research, we have been asked the question; are there not existing sites on the web that do this already? The answer is both yes and no. There are

⁶⁰ Wells bcatanza@nps.edu “Worth Sharing”. Email to Sue Higgins, 25 January 2006.

Dr. Lin Wells “Re: Worth Sharing”. Email to Sue Higgins (forwarded to author), 25 January 2006. Wells, who at the time was the acting Assistant Secretary of Defense - Networks, Interoperability, Integration (ASD-NII), recently commented that if “network-centric operations” traditionally have focused on our NIPRNET/SIPRNET/JWICS “INTRANETS,” SSTR ops must also include one or more “EXTRA-NETS” to engage with non-traditional partners like NGOs, aid organizations, indigenous security forces, commercial firms, etc. We must work to integrate information across these two groups of nets.

⁶¹ Joint Publication 3-08, vii.

web sites that do share information. The competitors are, for example, ReliefWeb,⁶² Humaninet,⁶³ Aidworker,⁶⁴ Development Gateway⁶⁵, Interaction,⁶⁶ and over 200 other “area specific” – “one-way” sites. These sites offer Regional Overviews (Country Studies, Maps, Charts, and Links); one specific area of study or interest, specific “organization” related information, news, and current events. What makes ICIN different? It is designed for the “On-The-Ground” responder; it’s collaborative, interactive, a one-stop-shop, and collates information from all other sites (to be discussed in more detail later in thesis).

Collaboration is a relatively new phenomenon on the web. With collaboration, the web has entered into a new stage of evolution in what experts now call Web 2.0. When the World Wide Web (WWW) was first created, it simply provided one-way communication; this was the first generation of the web. The second generation began when the web became a platform, whereby blogging and collaborative capabilities are prevalent.⁶⁷ An example between the first and second generation of the web is the

⁶² Reliefweb is a site that the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) operates. It is the one site that nearly every NGO, IO, or government agency looks to for information and it is the standard bearer of websites in that community. Reliefweb.int [Website]; available from: <http://www.reliefweb.int/rw/dbc.nsf/doc100?OpenForm>; Internet; accessed 10 January 2006.

⁶³ HumaniNet is another site like Reliefweb but privately run. It is a cooperative network of over 50 field organizations, several supporting technology businesses, and a group of expert volunteers who help with research. Humaninet.org [Web site]; available from: <http://www.humaninet.org/>; Internet; accessed 10 January 2006.

⁶⁴ This web site provides a comprehensive resource for busy field workers needing practical advice and proven resources to help with their current work. Aidworkers.net [Web site]; available from: <http://www.aidworkers.net/>; Internet; accessed 29 April 2006.

⁶⁵ Development Gateway provides innovative Internet solutions for effective aid and e-government – increasing access to critical information, building local capacity and bringing partners together for positive change. Developmentgateway.org [Web site]; available from: <http://www.developmentgateway.org/>; Internet; accessed 12 May 2006.

⁶⁶ With more than 160 members operating in every developing country, InterAction works to overcome poverty, exclusion and suffering by advancing social justice and basic dignity for all. Interaction.org [Web site]; available from: <http://www.interaction.org/>; Internet; accessed 3 May 2006.

⁶⁷ Tim O’Reilly, 30 September 2005, *What is Web 2.0, Design Patterns and Business Models for the Next Generation of Software*. O’Reilly [Web site]; available from: <http://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html>; Internet; accessed 12 April 2006.

difference between *Encyclopedia Britannica* and Wikipedia.⁶⁸ The former is simply an on-line encyclopedia that provides information while the latter is collaborative.⁶⁹

As we have already shown, NGOs and IOs need to maintain their neutrality. Failing to do so could jeopardize their work and quite possibly their lives. For this reason, ICIN would provide an excellent venue for share information and TIPS in a benign environment, without compromising any mandates, beliefs, or values.

H. CONCLUSION

In the last few decades, the U.S. military, NGOs and IOs have operated in the same locations, conducting similar types of operations, and have sometimes helped one another to accomplish their respective missions. In spite of this, they have developed walls that separate them, often resulting in degraded efficiency of their capabilities. If these organizations continue to operate with this separation, they will struggle and falter as they attempt to meet the needs of local populations and accomplish their missions. However, if the military, NGOs, and IOs work together and cooperate by sharing information, TIPS, and resources, they cannot help but improve their performance. As Abiew argues, “a well-planned and coordinated combination of civilian and military measures can create the conditions for long-term stability and peace in societies torn apart by war.”⁷⁰

There is a great requirement for all parties involved to recognize and address this need. Virtually no organization has yet to fill this need. For this reason, we have embarked on a mission to build ICIN and ultimately help the victims of various crises. Through the sharing and collaboration of TIPS, ICIN will empower these organizations to provide effective relief to those in need.

⁶⁸ Wikipedia is a wiki that is also an on-line encyclopedia that anyone can add to or edit. Wikipedia contributors, "Main Page," *Wikipedia, The Free Encyclopedia*, [wiki online]; available from: http://en.wikipedia.org/w/index.php?title=Main_Page&oldid=55170709; Internet; accessed 1 June 2006.

⁶⁹ We will provide a more detailed explanation of Web 2.0, history of the Internet, and the WWW in the next chapter.

⁷⁰ Abiew, 5.

III. NETWORKS

One of the cardinal rules of human networks is

‘Birds of a feather flock together’⁷¹

In the previous chapter, we posited that information sharing and collaboration on lessons learned can be accomplished through a Web-based network. To refer to a network is not enough by itself, however. We must identify what type of network we are proposing. In this case, we have identified a community of interest (COI) as the type of network that would best suit our needs.

In proposing a web-based network, or more specifically a COI, we need to ask two additionally pertinent questions: what is a network and why a web-based network? In this chapter, we will address these two questions. We will devote the first section of this chapter to a discussion of networks. We will define networks, discuss different types of networks and their topologies, to include COIs, and discuss the fact that networks are not entirely new phenomena.

In the second section, we will address why the Internet is a suitable home for our COI. We will begin this section by presenting how technologies throughout history have evolved, specifically, the Internet and the World Wide Web, and the effects they have had on networks, how networks have become tremendously popular with the advent of Web 2.0, and finally, why the Internet is the best place to host ICIN.

A. WHAT IS A NETWORK?

If someone were to ask you, “what is a network”, how would you answer? Would you talk about computer networks in your office, a terrorist network, or business contacts? Are any of these correct? The answer is yes, networks are all of these things and much more. Networks can also be a social network of friends, sexual partners,

⁷¹ Valdis Krebs “The Social Life of Books” Orgnet.com,1999 [Web site]; available from: <http://www.orgnet.com/booknet.html>; Internet; accessed 11 November 2006.

religious affiliations, and the list goes on. As Williams explains, networks are the most common form of social organization”.⁷²

One of the most popular on-line dictionaries, Dictionary.com, provides, among other, the following definitions of the word “network” (these are a just a few examples):

net·work 'nɛt,wɜrk –noun

1. Any netlike combination of filaments, lines, veins, passages, or the like: a network of arteries; a network of sewers under the city.

2. An association of individuals having a common interest, formed to provide mutual assistance, helpful information, or the like: a network of recent college graduates.

–verb (used without object)

3. To cultivate people who can be helpful to one professionally, esp. in finding employment or moving to a higher position: ***His business lunches were taken up with networking.***⁷³

Since we are concerned with “social” networks, we will focus our attention on them vice computer networks, sewer networks or the like. However, regardless of the type of network, all networks are made up of the same components and are comprised of two main building blocks, nodes and links. Nodes may be a myriad of objects. As Arquilla and Ronfeldt explain, “[A] node ... may refer to an individual, a group, an organization, part of a group or organization, or even a state.”⁷⁴ The link is that which connects the nodes together. For example, if we were talking about a person as a node, the link would be his or her relationship with other nodes in their network. As Scott explains,

⁷² Phil Williams “Transnational Crime Networks,” as quoted by John Arquilla and David Ronfeldt, *Networks and Netwars* ed., (Santa Monica: RAND, 2001), 61.

⁷³ Network. Dictionary.com. *Dictionary.com Unabridged (v 1.0.1)*, Based on the Random House Unabridged Dictionary, © Random House, Inc. 2006[dictionary online]; available from: <http://dictionary.reference.com/browse/network>; Internet; accessed: 26 October 2006.

⁷⁴ John Arquilla and David Ronfeldt *Networks and Netwars: the Future of Terror, Crime, and Militancy* (Santa Monica: RAND, 2001), 8.

The social field is seen as comprising “points” connected by “paths”. The points represent individual persons, their goals, or their actions, and the paths represent the interactional or causal sequences, which connect them.⁷⁵

Although Scott uses the terms “points” and “paths” vice nodes and links (he is speaking specifically about social network analysis), the terms are synonymous. As depicted in Figure 4, each circle represents a node and each arrow represents a link.

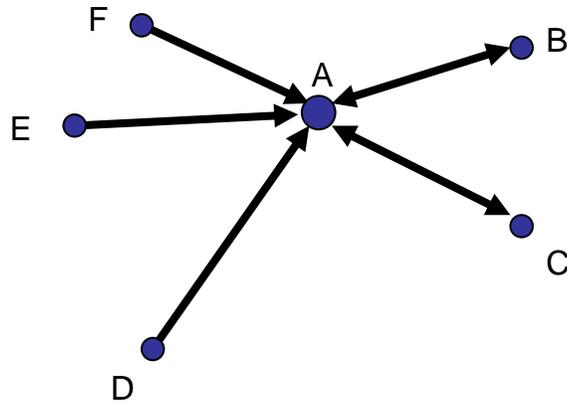


Figure 4. A Simple Network.⁷⁶

B. NETWORK TOPOLOGIES

A network topology refers to the configuration of the nodes and links within the network. While Arquilla and Ronfeldt define three main topologies, chain, star, and all channel⁷⁷, there are many more as illustrated in Figure 5. Each of these topologies has advantages and disadvantages. For example, a star group, or hub as some refer to it, is wholly dependent on the center node. If the center is removed, destroyed, or broken down, the entire network falls apart. In a fully connected network however, you can remove any one of the nodes and the network would continue to function.

⁷⁵ John Scott *Social Network Analysis: a Handbook* (Newbury Park: Sage Publications, 1991), 11.

⁷⁶ *Ibid.*, 11.

⁷⁷ Arquilla and Ronfeldt, 7-8.

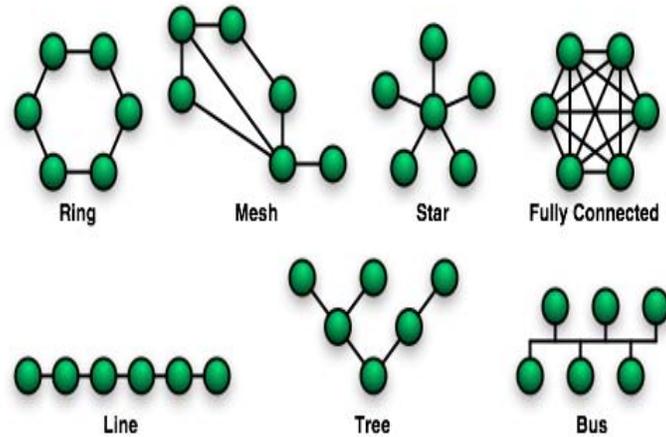


Figure 5. Network Topologies.⁷⁸

Networks may also exist on different levels. For instance, in turbulent societies there are networks in the general population, amongst the legitimate government, and in a subversive group or “counter state.” This concept is depicted in Figure 6 below. Notice that the links not only connect the nodes in the individual networks, but they also connect nodes from one network to another.

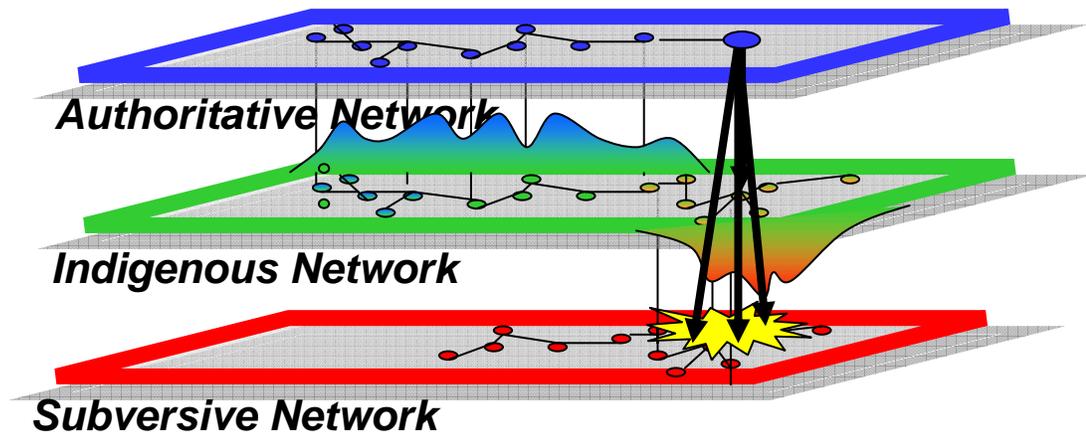


Figure 6. A multi-layered network.⁷⁹

⁷⁸ Florida Center for Instructional Technology College of Education, University of South Florida, [Web site]; available from: <http://fcit.usf.edu/network/chap5/chap5.htm>; Internet; accessed 21 August 2006.

⁷⁹ This model was developed by Major Catanzaro and two other colleagues for a Math Modeling project at the Naval Postgraduate School.

The topology of a network will depend on the network's purpose. A terrorist network will use communications that are more clandestine. Its topology will vary but may look like a series of interconnected star networks so that each person will know only one to three nodes in the network, thereby creating more security for the network. Other common terrorist topologies include a line or chain and hybrids of the all channel and hub.

A hub is a centrally located node that is highly connected. Not only is it connected to many other nodes within its own network, but it is also connected to other clusters of nodes in different networks, though those clusters may not be connected to each other. An example is Osama bin Laden's global Salafi network. This network, as seen in Figure 7 below, depicts bin Laden's social network. As Sageman explains,

The Central Staff, Core Arab, Maghreb Arab, and Southeast Asian are large clusters built around hubs: Osama bin Laden, Khalid Sheik Mohammed, Zein al-Abidin Mohammed Hussein (a.k.a. abu Zubaydah), and Abu Bakar (a.k.a. Usatz abu Somad), respectively.⁸⁰

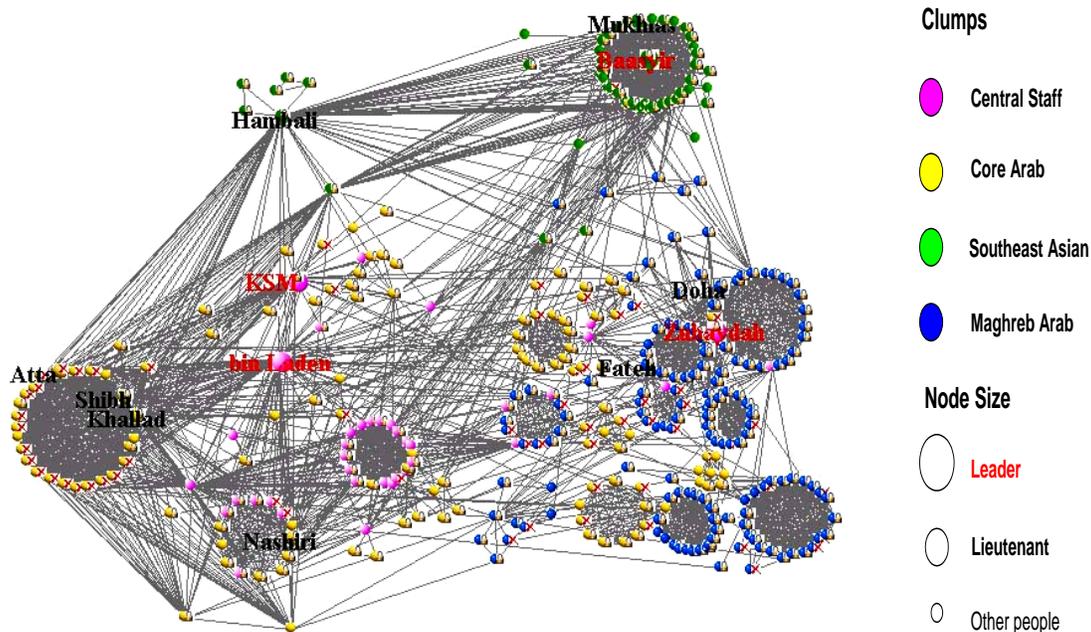


Figure 7. Osama bin Laden's Social Network.⁸¹

⁸⁰ Marc Sageman *Understanding Terror Networks* (Philadelphia: University of Pennsylvania Press, 2004), 138.

⁸¹ Marc Sageman *Global Salafi Jihad: Empirical Assessment & Social Network Analysis*, [Power Point brief]; April 2005.

A social network, however, may look more like a fully connected network whereby all nodes or friends know each other. If one friend should happen to move, have a falling out, or die, the network will continue to function.

We have already identified various types of networks, computer networks, sewer networks and social networks to name a few. Social networks are in themselves varied from one type to another. Social networks may include sexual partners (there have been many studies on social networks and sexual partners to analyze the spread of infectious diseases for example),⁸² business networks, and finally, communities of interest or COIs, where we will now focus our attention.

According to Wikipedia, “A community of interest is a community of people who share a common interest or passion, such as rugby fans on Rugby365.com, or music lovers on MP3.com. These people exchange ideas and thoughts about the given passion.”⁸³ The DoD, for its part, defines COIs as such:

COI is a term used to describe any collaborative group of users who must exchange information in pursuit of their shared goals, interests, missions, or business processes, and who therefore must have shared vocabulary for the information they exchange.⁸⁴

There is one main difference between these two definitions, that being compulsion. In the Wikipedia definition, no mention is made of an obligatory sharing of information; hence, it is voluntary. In the DoD version, however, the collaborative users *must* share information. This raises the question as to whether or not networks and COIs can be created, or whether they simply occur, or both.

⁸² Garnett and Ghani conduct research to identify the risks of sexually transmitted diseases (STDs). By applying social network analysis (SNA) to sexual partners, they found that previous studies on the spread of STDs were largely underestimated based on gaps in that data. G. P. Garnett and A. C. Ghani “Measuring Sexual Partner Networks For Transmission of Sexually Transmitted Diseases,” *Journal of the Royal Statistical Society*, 1998 [journal online]; available from: <http://www.jstor.org/view/09641998/di993096/99p07514/0>; Internet; accessed 18 November 2006.

⁸³ Wikipedia contributors, "Community of interest," *Wikipedia, The Free Encyclopedia*, [wiki online] available from: http://en.wikipedia.org/w/index.php?title=Community_of_interest&oldid=67422403; Internet; accessed 6 November 2006.

⁸⁴ Department of Defense, “Communities of Interest in the Net-Centric DoD Frequently Asked Questions (FAQ),” information paper, 19 May 2004 [article online]; available from: http://colab.cim3.net/file/work/Expedition_Workshop/2005-12--6_Advancing_Information_Sharing_And_Data_Architecture/DoD/COI_FAQ.doc; Internet; accessed: 25 October 2006.

In Figure 5 above, we depicted a simple network of six nodes. The links were portrayed with arrows, some were unidirectional, and others were dual-headed. This simple diagram speaks volumes to the question at hand. Nodes D, E, and F may have been introduced to node A, but if A does not reciprocate, there will be no relationship. However, B and C may have been introduced to A, and if A likes both B and C, they will then begin to build a relationship, hence, a network. Denning explains this in more detail. According to Denning,

Al-Qa'ida, [sic] for example, did not set out to create a network, plan its structure (e.g., to be resilient), and then populate it with people and links. Their network just emerged from relationships that have come and gone over the years.”⁸⁵

Conversely, Williams gives an exception by explaining that, “a network can be created and directed by a core of organizers who want to use it for specific purposes (a ‘directed network’).”⁸⁶ In agreement with Williams, Sageman argues that Osama bin Laden actively recruited members for al Qaeda. In his book *Understanding Terror Networks*, Sageman describes the process for joining, or rather, being invited to join al Qaeda. He explains that people do not simply join al Qaeda. You cannot go to the local mosque and sign up. Sageman continues,

No aggressive ‘publicity’ campaigns targeted potential recruits; no dedicated recruitment committee had full time staff at al Qaeda headquarters (except a reception committee in Peshawar for people already on their way to the camps).⁸⁷

Sageman adds that recruits are drawn from terror training camps around the Muslim world (Afghanistan, Malaysia, Sudan, and Muslim controlled areas in the Philippines for example). From this pool of trainees, “al Qaeda offered the opportunity to join its ranks to only 10 to 30 percent of its trainees.”⁸⁸ Denning does, however,

⁸⁵ Dorothy Denning, “Re: Creating Networks.” E-mail to author, 21 October 2006.

⁸⁶ William, 69.

⁸⁷ Sageman, 123.

⁸⁸ Ibid., 121.

somewhat agree by stating, “There are some exceptions. If you look at the hierarchical network of ‘reports to’ relations in an organization, it is something that is created from a plan.”⁸⁹

It is safe to say, though, that we can facilitate social networks and COIs. As Denning explains, “[if you] put two work groups in the same physical location, relationships will be formed between people in the two groups. Or, introduce people to each other so that some new links will be established.”⁹⁰

One example of a COI comes from the Bradford, England, called BradfordInfo. This particular web site breaks down COIs into two different groups, “communities who share an identity and communities who share an experience and concern.”⁹¹ They give examples of the first as people who share an identity like race or ethnicity, sexual orientation, or people with a disability. The second group they identify as refugees or asylum seekers, the homeless, people who care for the elderly or disabled.

C. NETWORKS IN HISTORY

Social networks are not new; they have existed throughout history. As Castells explains, “Networks, however, are not specific to twenty-first century societies”.⁹²

Probably one of the most recorded examples of a social network in ancient times (though no one regards it as a social network) was that of the Apostle Paul. Paul was once a Pharisee, or Jewish priest, and a member of the Sanhedrin (a ruling body of priests and lay elders forming a council). After his conversion, he became one of the greatest Christian missionaries in history and, in a period of 35 years, created a social network that expanded throughout almost the entire Roman Empire, from Spain to Egypt. He did not accomplish this with the use of the Internet, telephone calls, or mass letter mailing vis-à-vis the post office. Paul created such a network through building personal relationships and by traveling the expanse of the Roman Empire and through hand delivered letters. The postal system of the Empire provided service for official business

⁸⁹ Denning e-mail 2006.

⁹⁰ Denning, 2006.

⁹¹ Bradford Info “What Are Communities of Interest?,” BradfordInfo.com [Web site]; available from: <http://www.bradfordinfo.com/themes/CoI/WhatAreCoIs.cfm>; Internet; accessed 7 November 2006.

⁹² Manuel Castells *The Network Society: A Cross-cultural Perspective* Edward (Cheltenham UK: Elgar Publishing Limited, 2004), 4.

only. As Halley explains: “There was no postal service in the Roman Empire except for official business. Public Postal Service [sic] as we know it is of modern origin. Then personal letters had to be carried by friends or chance travelers.”⁹³

Paul began his ministry in approximately AD 32 and continued until he was beheaded in 67 AD. In this 35-year history, he conducted three missionary journeys. During these journeys, Paul traveled from modern-day Israel to Syria, Turkey, Greece, Malta, Italy, and tradition says Spain, though the last is unconfirmed.⁹⁴ In each of these cities, as well as scores of others, Paul developed a social network remarkable even by today’s standards.

Paul’s social network is exemplified in his letters. In his book to the Romans, Paul sends greetings to 25 friends and relatives, each of whom he identifies by name.⁹⁵ In other letters, he identifies colleagues and associates further demonstrating his connectedness throughout the Roman Empire. In the book of Philippians, Paul even identifies fellow Christians in Caesar’s household.⁹⁶

Social networks have indeed evolved since the early church. Since the first century AD, the world has seen the development of numerous, incredible technological advances and innovations, thus aiding in communication. In the 1440s, Gutenberg invented the printing press. In the 1960s, we saw the beginnings of the Internet, which ultimately brought about unprecedented levels of worldwide communication. Hence, in today’s society, people are able to develop social networks with others on the opposite side of the world without leaving their house. One example is a web site named LinkedIn. According to Wikipedia, “LinkedIn is a business oriented [sic] social networking site, mainly used for professional networking. As of September 2006, it had more than 7 million registered users, representing 130 industries.”⁹⁷ LinkedIn also provides users the ability to connect with colleagues and friends from past military

⁹³ H.H. Halley, *Halley’s Bible Handbook* (Grand Rapids, Michigan: Zondervan Publishing House, 1965), 584.

⁹⁴ H.H. Halley, *Halley’s Bible Handbook* (Grand Rapids, Michigan: Zondervan Publishing House, 1965), 582.

⁹⁵ Romans 16:3-15 *Thompson Chain Reference Bible*, New International Version.

⁹⁶ Philippians 4:22 *Thompson Chain Reference Bible*, New International Version.

⁹⁷ Wikipedia contributors, "LinkedIn," *Wikipedia, The Free Encyclopedia*, [wiki online] available from: <http://en.wikipedia.org/w/index.php?title=LinkedIn&oldid=84760116>; Internet; accessed 7 November 2006.

assignments, colleges, or to connect with someone in another person’s network.

LinkedIn advertises five benefits for joining the web site:

- Get introduced to the people you need. When you need to reach a professional, LinkedIn will tell you who can introduce you to the person you need.
- Find professionals your friends can vouch for. Don’t just search the web for people. Search the people your friends know and can recommend.
- Keep up with friends and colleagues. LinkedIn makes it easy to hear news about their careers, projects and professional lives.
- Don’t miss professional opportunities. With LinkedIn, you hear about opportunities in your network, even if your friends don’t tell you about them.
- Build your relationships. When a connection asks you to make an introduction, you build that relationship.⁹⁸

We first joined LinkedIn at the invitation of NPS professor Dr Dorothy Denning, who teaches courses on networks for the Department of Defense Analysis. As of 7 November 2006, Major Catanzaro had 29 people in his network on LinkedIn (see Table 2). From those 29, he was able to connect to nearly 40,000 other people vis-à-vis the web site.

	1 Your Connections	<u>29</u>
	Your trusted friends and colleagues	
	2 Two degrees away	176
	Friends of friends; each connected to one of your connections	
	3 Three degrees away	39,700+
	Reach these users through a friend and one of their friends	
	Total users you can contact through an Introduction	39,900+

Table 2. LinkedIn Connections.⁹⁹

⁹⁸ LinkedIn Corporation, LinkedIn.com [Web site]; available from: http://www.linkedin.com/home?trk=tab_h; Internet; accessed 5 November 2006.

⁹⁹ Ibid.

D. KEVIN BACON?

Table 2 depicts these connections in a concept known as degrees of separation. This concept was popularized by the trivia game *Six Degrees of Kevin Bacon*. The game presumes that every actor in Hollywood can be connected to the actor Kevin Bacon within six steps and its goal is to find the shortest path from that actor to Kevin Bacon. For example, Jennifer Lopez was in *U Turn* (1997) with Sean Penn and Sean Penn was in *Mystic River* (2003) with Kevin Bacon.

We tried to see if this concept worked from someone outside of Hollywood as well. We both know Major Catanzaro's sister, Domenica, who is married to a gentleman named Derek Pisani (1). Derek is cousins with the actor Stan Tucci (2). Stan Tucci was in *Billy Bathgate* (1991) with Nicole Kidman (3). Nicole Kidman was in *Far and Away* (1992) with Tom Cruise (4). Tom Cruise was in *A Few Good Men* (1992) with Kevin Bacon (5); it worked!

We tried it another way. We both attend NPS with a Major Cameron Sellers (1). Major Sellers worked as a Congressional Aide for Senator John McCain of Arizona (2). Senator McCain knows Californian Governor Arnold Schwarzenegger (3). Governor Schwarzenegger was in *Batman Legacy* (2000) with Jack Nicholson (4). Jack Nicholson was in *A Few Good Men* (1992) with Kevin Bacon (5); worked again!

A Harvard psychologist, Stanley Milgram, conducted a similar experiment in 1967 based on the concept of six degrees of separation. Milgram "sent hundreds of letters to people in Nebraska, asking them to forward the correspondence to acquaintances who might be able to shepherd it closer to a target recipient: a stockbroker in Boston."¹⁰⁰ Of the letters that arrived, Milgram found the average letter went through six individuals.

E. THE WORLD IS FLAT

We will now transition from a discussion of networks and COIs to the advancement of technologies, the popularity of the Internet and why it is a suitable place for ICIN. In his book *The World is Flat*, Thomas Friedman argues that the world has

¹⁰⁰ Eric Bonabeau and Albert Laszlo, "Scale-Free Networks," *Scientific American* May 2003, 68.

gone through three stages of globalization, culminating in the flattening of the world. The result is that world is now “connecting all the knowledge centers on the planet together in a single global network.”¹⁰¹

Friedman explains that the first phase, Globalization 1.0, covered the era from 1492 through 1800, thus shrinking the world from large to medium. The significance of this period lays in the fact that Columbus paved the way for the old world to open trade with the new world. In Globalization 2.0, which lasted from 1800 to 2000, the world then became small. The factor in this epoch was that multinational companies brought about global integration. Finally, in Globalization 3.0, which began in 2000, the world became flat. The impetus behind 3.0 was that individuals found power to compete through global collaboration.¹⁰²

The seams between each of these periods might seem strange to some. Some would think that the creation of the Internet or the World Wide Web (WWW) would provide a good transition from Globalization 2.0 to 3.0. However, the real change was with the advent of what experts call Web 2.0 (as previously discussed in chapter 2). We will now address this evolution.

The Internet had its beginnings as a DoD project as far back as the 1960s. The Defense Advanced Research Projects Agency (DARPA) created a network, called ARPANET, which was meant to counteract a Soviet disruption or destruction of our communications.¹⁰³ The first public use was not until the mid 1970s, however. While the first stages of the Internet were, by today’s standards, quite basic, they had unprecedented effects. As Castells offers, “ultimately ARPANET...became the foundation of a global, horizontal communication network of thousands of computer networks...that has been appropriated for all kinds of purposes.”¹⁰⁴ Then came the WWW.

Many people today often mistakenly refer interchangeably to the Internet and the WWW; but they are different. In fact, the WWW, or simply the Web, is a component of

¹⁰¹ Thomas Friedman. *The world is flat: A brief history of the twenty-first century*. 2nd ed. (New York: Farrar, Straus and Giroux, 2005), 8.

¹⁰² Thomas Friedman. *The world is flat: A brief history of the twenty-first century*. 2nd ed. (New York: Farrar, Straus and Giroux, 2005), 9-10.

¹⁰³ Castells, 6.

¹⁰⁴ Castells, 7.

the Internet that provides access to documents. As Friedman explains, the WWW is “a system for creating, organizing, and linking documents so that they can be easily browsed over the Internet.”¹⁰⁵ Wikipedia further explains that the Web,

Is a global, read-write information space. Text documents, images, multimedia and many other items of information, referred to as *resources*, are identified by short, unique, global identifiers called Uniform Resource Identifiers (URIs) so that each can be found, accessed and cross referenced in the simplest possible way.¹⁰⁶

Tim Berners-Lee, a British computer scientist, developed the concept of the WWW and posted the very first Web site on the Internet in 1991.

The WWW grew in popularity almost overnight. As Friedman continues, “Within five years, the number of Internet users jumped from 400,000 to 40 million. At one point, it was doubling every 53 days.”¹⁰⁷ Today, as depicted in Figure 8, there are over one billion users of the Internet located throughout the entire world.¹⁰⁸

In discussing a free software program called Linux, Friedman discusses that even the remotest countries in the developing world have the Internet. He explains that Malians in Timbuktu make “antennas out of plastic soda bottles and mesh from window screens”¹⁰⁹ to create wireless networks via satellite. Though more prevalent in some parts of the world, as depicted in Figure 8, the Internet is virtually everywhere. This does not mean, however, that Africa is on par with the more developed world. Africa still lags far behind others on the information superhighway.

¹⁰⁵ Friedman, 59.

¹⁰⁶ Wikipedia contributors, "World Wide Web," *Wikipedia, The Free Encyclopedia*, [wiki online] available from: http://en.wikipedia.org/w/index.php?title=World_Wide_Web&oldid=87507535; Internet; accessed November 18, 2006.

¹⁰⁷ Friedman, 61.

¹⁰⁸ Wikipedia contributors, "Global internet usage," *Wikipedia, The Free Encyclopedia*, [wiki online] available from: http://en.wikipedia.org/w/index.php?title=Global_internet_usage&oldid=83143401; Internet; accessed 9 November 2006.

¹⁰⁹ Friedman, 106.

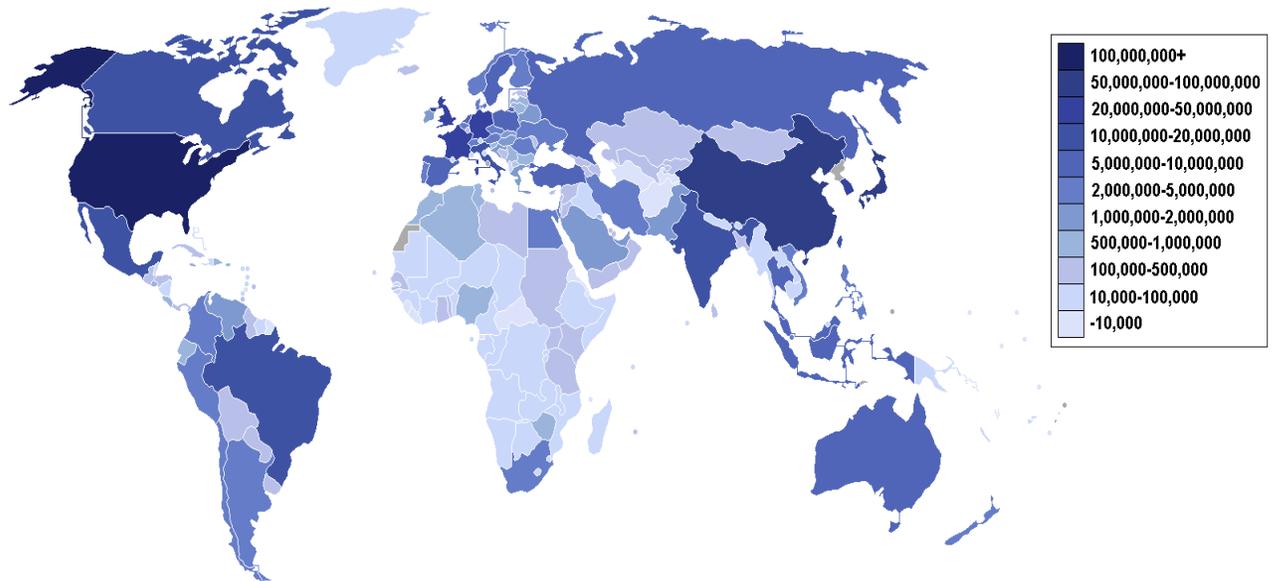


Figure 8. Number of Internet Users Worldwide.

To understand why Globalization 3.0 did not start until 2000, we need explain the difference between the Internet and the WWW of the 20th Century and the advent of Web 2.0. We addressed this briefly in Chapter 2, but we will now go in to more detail. In its infancy, the Internet simply linked together computers and provided a means to transfer information like e-mails or documents. While the precursor of the Internet, ARPANET, was established for the DoD, it quickly became a venue for educational and research institutions to communicate as well. As Castells explains,

Scientists started to use it [ARPANET] for all kinds of communications purposes. At one point it became difficult to separate military-oriented research from scientific communications and from personal chatting.¹¹⁰

Many other groups became involved in ARPANET, and by the 1980s, it was called the ARPANET-INTERNET. Finally, it was simply INTERNET.

F. THE DOT-COMS

In the 1990s, many businesses and organizations began to see the potential of the Internet. This realization occurred nearly at the time when Berners-Lee created the WWW and the first Web site. Castells highlights this evolution by relating the following:

¹¹⁰ Castells, 352.

The peaceful coexistence of various interests and cultures in the net took the form of the World Wide Web (WWW), a flexible network of networks within the Internet where institutions, businesses, associations, and the individuals create their own 'sites' on the basis of which everybody with access can produce her/his/its 'homepage,' made of a variable collage of text and images.¹¹¹

As the 20th Century and Globalization 2.0 began to wane, the world saw a new stage in the advancement of the WWW, the dot-com bubble. Dot-com refers to the Web address that Web sites used on the WWW, for example www.Amazon.com. With popularization of the WWW, businesses quickly began to see the profit potential in selling on the WWW. These businesses were called the dot-coms. As these companies began to make money, the stock market increased creating the dot-com bubble. Overinvestment in the Internet soon began to spread fears that the bubble was soon to burst.

In response to the media's prodding, Bill Gates, of Microsoft, confirmed their fears by stating the dot-com bubble would indeed burst, but that did not matter. Friedman explained Bill Gates perspective: "Gates compared the Internet to the gold rush, the idea being that more money was made selling Levi's, picks, shovels, and hotel rooms to the gold diggers than from digging up gold from the earth."¹¹² In mid-2000, the bubble did burst and the market dropped nearly 2000 points, as depicted in Figure 9.



Figure 9. Graph of Dot-com Burst.¹¹³

¹¹¹ Castells., 355.

¹¹² Friedman, 71.

¹¹³ Wikipedia contributors, "Dot-com bubble," *Wikipedia, The Free Encyclopedia*, [wiki online] available from: http://en.wikipedia.org/w/index.php?title=Dot-com_bubble&oldid=86622230; Internet; accessed 9 November 2006.

Castells above description is exactly why the Internet and the WWW are not a part of Friedman's Globalization 3.0. The Internet, although it may have changed the history of technology, and the WWW, although was a dramatic improvement on the Internet, simply put information out for all to see. Web sites provided information, they offered up text and images, but it was all one-way communication. The real change came with Web 2.0.

G. WEB 2.0

O'Reilly Media first coined the phrase Web 2.0 in 2004, although the era started in 2001 with the bursting of the dot-com bubble. Incidentally, the dawn of Globalization 3.0 and Web 2.0 roughly coincide with each other. O'Reilly Media gathered a number of experts of the Internet, to include Media Live International, in an attempt to brainstorm on the future direction of the Internet. They concluded that rather than crashing after the dot-com burst, the Internet actually reached some type of a turning point. Since then, the term Web 2.0 has become increasingly popular. For example, we "Googled"¹¹⁴ the term Web 2.0 and came up with the following results: "Results 1 - 10 of about 667,000,000 for web 2.0. (0.06 seconds)," that is over half a billion references to Web 2.0.

So how does Web 2.0 differ from Web 1.0?¹¹⁵ Three main factors distinguish these two generations of the Web. First, the Web has evolved from pulling information to pushing it. Second, users went from readers to editors. Finally, the Web morphed from a high-speed post office to on-line communities.

In Web 1.0, people had to look for information and pull it off the Internet. With the advent of Web 2.0, information is pushed to the user. The best example of pushing information is the new technology call "rich site summary" or RSS. RSS works in two ways. First, any Web site can set up an RSS feed to draw information into the web site to update it. For example, the Naval Postgraduate School's Cebrowski Institute has built a Web site, which is a COI for energy enthusiasts. On the web site, they have an RSS feed,

¹¹⁴ The term "Google", which means to search for information about a specific person through the Google search engine, has entered into the American vernacular as a result of Web 2.0. It has already been accepted by Webster's New Millennium™ Dictionary of English. Google. Dictionary.com. *Webster's New Millennium™ Dictionary of English, Preview Edition (v 0.9.6)*, Lexico Publishing Group, LLC. [dictionary online] available from: <http://dictionary.reference.com/browse/google>; Internet; accessed: 9 November 2006.

¹¹⁵ The term Web 1.0 was not invented until after O'Reilly made up the term Web 2.0. Hence, Web 1.0 received its name after the fact.

based on certain key words, which searches the Internet for any news, articles or information dealing with energy. Once it is found, it draws that information into the Web site.

Additionally, RSS will work for individual users as well. Any user may go onto the Web site and sign up for a RSS feed. By submitting certain key words, the user is then able to have the site notify them vis-à-vis their e-mail of any updates.

Web 2.0 changed the Web from a centrally run entity to a flat or non-hierarchical entity. Under Web 1.0, anyone could set up his or her own web site, in this respect everyone was on equal footing. At that time, bandwidth was not the same for uploading as was for downloading. As Friedman explains, “the bandwidth on cable phone lines was asymmetrical; download rates far exceeded upload rates. The dogma of the age held that ordinary people had no need to upload; they were consumers, not producers.”¹¹⁶ However, with Web 2.0, anyone is now able to edit, alter, or add to these Web sites as well.

With this evolution, everyone can be an editor. This is done through many technologies like Wikis and Blogs. The Pew Internet and American Life project found that “44% of adult American Internet users – more than 53 million people – have contributed material to the online world.”¹¹⁷

Finally, Web 2.0 changed the Web from a better method of communicating with others to facilitating virtual communities and social networks. When the Internet was in its infancy, people could send out e-mail, which was nothing more than high-speed mail service. Today, however, the Web is populated with countless COIs dedicated to enriching social networks.

H. WHY USE THE INTERNET FOR ICIN?

The Internet provides numerous advantages for virtual communities. Three advantages we will focus on here are that forming a COI on the Internet saves resources

¹¹⁶ Friedman, 95.

¹¹⁷ Pew Internet and American Life Project, *Content Creation Online* 29 February 2004 [journal online]; available from: http://www.pewinternet.org/pdfs/PIP_Content_Creation_Report.pdf; Internet; accessed 8 November 2006.

(time and money); the Internet is increasingly popular, especially with the younger generations; and finally, the Internet is increasingly popular for communications, Wikis, Blogs, and the like.

A facet of Web 2.0 is that social networks can form and exist in the virtual world. In the past, social organizations met at a certain time and space. People traveled to meet each other, whether it was to a palace court, the town pub, or the local meeting hall. In today's environment, people can build social networks on the Web from the comfort of their living rooms, at the airport while traveling, or from the local library. This saves both time and money.

When compared with running an actual event where these people could meet, virtual communities are far more efficient. As Mr Nick Tomb from the Center for Stabilization and Reconstruction Studies explains;

It is very expensive to run a conference/workshop. My experience from conducting a variety of events in Monterey is that they run from \$25,000 - \$100,000 for a 4 – 5 day event, depending on the labor costs (volunteer vs. paid staff) the venue (hotels here are pricey), participant accommodations (who pays), event development, etc.¹¹⁸

In addition to fees, participants must also take time out of their busy schedules to attend these workshops. Attendance is also limited as well. The CSRS workshops for example, are usually limited to 30-40 participants. Virtual communities are limitless on members, though.

Since its inception, the Internet and the Web have increased in popularity exponentially, and interest and participation will not wane any time soon. As stated previously, there are currently over one billions Internet users worldwide. Of those users, a large percentage are spending their time Online engaged in some type of communication. According to Cymfony.com, people spend over a third of their time involved in communicating (see Figure 10 below).

¹¹⁸ Nicholas Tomb, "Re: Workshop Costs." E-mail to author, 24 October 2006.

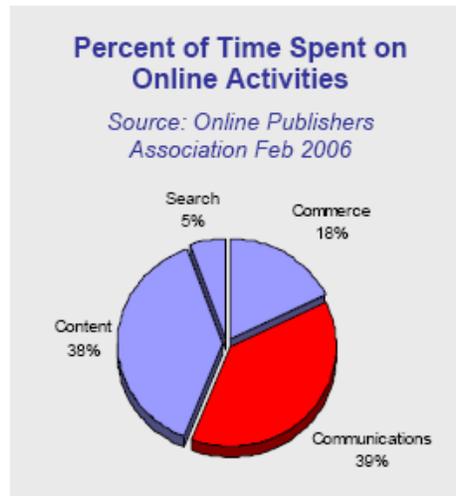


Figure 10. Percent of Time Spent on Online Activities.¹¹⁹

The popularity of the Internet does not rest solely with professionals or the dot.coms. In fact, it is quite trendy for teens and even pre-teens. For kids, the Internet is second nature, much like television was for us and radio for our parents. Friedman explains how the next generation is growing up online. He explains that “more than 2 million children aged 6-17 have their own Web site... [and] twenty-nine percent of kids in grades K-3 have their own e-mail address.”¹²⁰ Why do we care about kids? They are the next generation of service men and women, as well as NGO, IO, and government workers. If ICIN does not provide a medium that is relevant and technologically advanced, it will be useless and passé. Hence, the next generation will not use it. ICIN must be forward looking.

Finally, individuals and communities are not attracted to the Internet for simply sending e-mails and reading web sites; rather, people are gravitating to technologies from the Web 2.0 era like Wikis and blogs. For instance, according to the Pew Internet and American Life Project, “44% of American Internet users post on blogs, discussion boards or engage in other social media outlets.”¹²¹ Furthermore, Cymfony.com explains that:

¹¹⁹ Cymfony, “*Making the Case for a Social Media Strategy*” Cymfony.com [white paper online]; July 2006 available from: <http://www.cymfony.com/files/pdf/making%20the%20case.pdf>; Internet; accessed 10 November 2006.

¹²⁰ Friedman, 120.

¹²¹ Pew Internet and American Life Project, 10 November 2006.

The dramatic growth of social media sites shows that while the form may change, participatory content is a powerful draw: comScore reports that MySpace grew 318% and broke into the top ten Web sites (measured by unique visitors) in 2005. Wikipedia grew 275% to surpass popular sites like ESPN.com and in May 2006 ranked just behind The Weather Channel. YouTube, which wasn't even around a year ago, now attracts 12.6 million users.¹²²

I. CONCLUSION

As explained in Chapter I, our research has shown that those in the humanitarian assistance and disaster relief communities can conduct information sharing and collaboration on lessons learned through a web-based network. Therefore, in this chapter we have defined networks, discussed various types of networks, including COIs, and network topologies. We have provided examples of networks in history, thereby showing that they are not new phenomena. Finally, we have provided a synopsis of the evolution of technologies, how they have affected networks, specifically through the development of the Internet and the WWW, culminating in why the Internet is most suitable for ICIN. In the next chapter, we will advance a business model of how to implement a web-based information-sharing network.

¹²² Cymfony.com.

IV. ICIN COMPONENTS

Communities thrive in the “passionate zone,” not the “bureaucratic zone.”
Keep the passion, spread the passion, and your community’s knowledge
can make a great *impact*.¹²³

This chapter of the thesis we will highlight the specific design, concepts, and components of the ICIN website. The structure and organization of the website is paramount to its function. The first section of this chapter will be devoted to the organizational model and descriptions of the tasks to be accomplished, attributes of the website and the environment in which it will operate. This portion of the thesis is loosely fashioned after a business plan, in that it will address the stakeholders, mission and values of ICIN.

A. ORGANIZATIONAL MODEL

The model in Figure 11 illustrates the network form of management and structure that we envision for ICIN. It will be used throughout the discussion of Chapter 4.

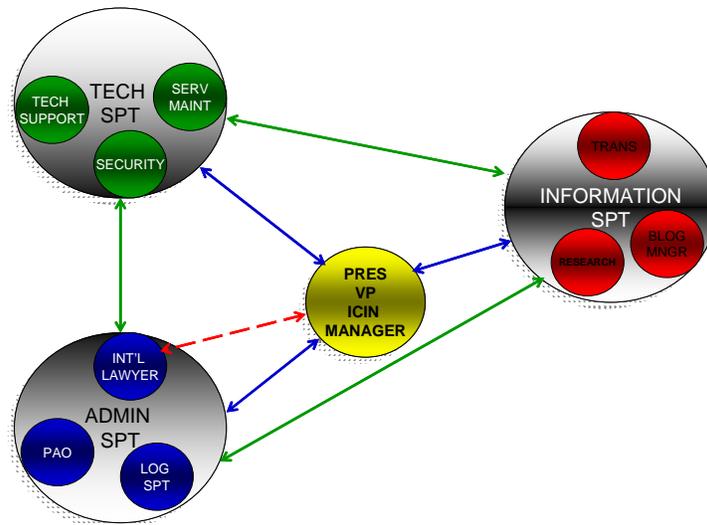


Figure 11. ICIN Organizational Model.

1. Human Resources

As shown in the Figure 11, the construct of the website staff is simple and follows a basic network pattern. This model stresses support, technological knowledge and

¹²³ Dixon, 175.

information sharing amongst those personnel who operate within the network. A budgetary analysis outlining the costs associated with tasks and jobs titles will not be discussed as such costs will vary with position, location, and experience. The tasks for each of these positions are outlined below:

a. Tasks

(1) President / Vice President. The decision to have a president and a vice president (VP) was intentional as the thesis team envisions the organization as having the ability to be a stand-alone entity from its inception. The president and VP would be responsible for the organization's stability, both financial and personnel, and ensuring that ICIN fulfills its mission, follows its strategy and reaches its goals.

(2) Press / Media Representative. The Press / Media Representative would be responsible for advertising about ICIN. This individual would attend workshops and conferences (most likely with either the president or VP) in order to distribute literature, gather perceptions as to changes that need to be made to ICIN and to educate the humanitarian community about the website.

The humanitarian community in general does not produce fancy commercials or spend funds on radio airtime. Rather, they distribute information using the Internet (through their websites) and by word-of-mouth. Therefore, the main focus for the press / media representative would be to go forth and spread the word about the website and encourage people to use it.

(3) ICIN Manager. The key to the stability of the website and the day-to-day management of the organization is the ICIN Manager. This person will be responsible for the 24/7 management of the website. This will be the person who the notification in the middle of the night that the site is not functioning, and who then figures out what is being done to correct the problem.

This person will be responsible for the hiring/firing of employees and ensuring that the 24/7 shifts are working with clock-like precision. This individual

will work a 9 to 5 shift, but manage around the clock. In the early stages of ICIN, this person will need to bear the burden of the tasks associated with the President, VP and Press / Media Representative.

(4) Office Support / Clerical / Finance. This support section of ICIN is responsible for the day-to-day office functions associated with a simple business. They will handle travel arrangements, payroll, and routine secretarial duties. In short, all the administration, clerical, and logistical functions of the organization will be fulfilled by this section of the organization.

(5) International Lawyer. An acknowledgement and understanding of international law and matters that involve answering questions related to international law is the main concern of those who have been interviewed by the thesis team.

Whenever an organization expands beyond the borders of its individual country, the roles and responsibilities of that organization change. The organization must learn to adapt to the laws of the countries with which it associates. This assurance of legal conformity will be the focus for the international law representative. Initially, this position may not be full time, but rather involve a close relationship with someone of counsel. This position is also necessitated by the possibility of multiple workers in various locations around the world working as part of a virtual networked organization.

(6) Network Administrator. The network administrator (or Webmaster) is responsible for the 24/7 operation and management of the website, servers and technological assistance for ICIN. The network administrator would report directly to the ICIN manager and would be responsible for all things technical within the organization. The goal is to have the ability to respond to technical concerns on a 24/7 basis.

(7) Help Desk. The help desk would be available either online or via a toll-free number to ascertain and remedy concerns of remote users of the website. The Help Desk personnel would be also be available 24/7 and would be responsible for the operation of the website during the absence of the Network Administrator.

(8) Security Manager. The security manager would be responsible for ensuring the security of the profiles, passwords and access to the website. The security manager would be responsible for the internal training of the ICIN personnel and the attendance of security conferences and workshops. The Security Manager will also be responsible for the investigation of violations of security protocols, intrusions from hacking and the submission of requests to the ICIN Manager to have profiles deleted based on posted violations.

(9) Server Maintenance. The Server Maintenance personnel will be highly trained and skilled in server technology and be responsible for the maintenance of the physical servers, the web space, and the transfer and backing-up of information. These personnel can be utilized both from on-site and remote locations.

(10) Researchers. The research personnel will be responsible for actively searching for new information to post on the website. In addition to the Wiki function of the website, the information will need to be manually verified and updated. The researchers will also be responsible for locating and posting information related to “events” that occur in a disaster or emergency situation.

The researchers will verify the information being posted on the website prior to verification by the ICIN Manager. Once finalized by the ICIN Manager, it will be translated and posted on the website.

(11) Translation Services. The translation of the information will truly enable the website to be accessed and utilized by an international community of humanitarian and first responder personnel. Once verified by both the researchers and the ICIN Manager, the translators, along with translation software, will change English into French and German. The rationale for choosing French and German for the next two languages (aside from English) to be used by ICIN is due to the locations where the offices of humanitarian organizations are based, namely the United States and Switzerland. In Switzerland, both German and French are official languages with 63.7%

and 20.4% respectively.¹²⁴ Future languages would be based on the languages of additional prevalent humanitarian organizations and on formal surveys conducted through the website.

(12) Forum / Blog Manager. The Forum / Blog Manager will be responsible for the monitoring the blog submissions from authorized users and administering, facilitating, and monitoring scheduled discussion forums. This individual can be a researcher, but it would be optimal to have a position that does the sole task of monitoring the submission of information.

b. Motivation

As mentioned previously, the theories as to “why” a person puts his/her thoughts onto the Internet have their premise in the work of Victor Vroom in the 1960’s¹²⁵. Dr. Victor Vroom’s expectancy theory was that a person will do those things that make him/her feel good. That is the core of the process for the website. People must feel that they have been empowered to contribute to the greater good of humanitarian assistance by adding their thoughts to a blog.

In 2006, a study conducted by James Kinniburgh and Dorothy Denning through the Joint Special Operations University (JSOU), *Blogs and Military Information*, highlighted some very pertinent information about the use and fidelity of blogs. The “blogosphere”,¹²⁶ or the multitude of locations on the Web that support the free-flow of thoughts and ideas doubled in size every six months between March of 2003 and April of

¹²⁴ The CIA World Factbook lists German 63.7% (Official), French (official) 20.4%, Italian (official) 6.5%, Serbo-Croatian 1.5%, Albanian 1.3%, Portuguese 1.2%, Spanish 1.1%, English 1%, Romansch 0.5%, other 2.8% (2000census) *note*: German, French, Italian, and Romansch are all national languages, but only the first three are official languages. The World Factbook, *Switzerland*, 14 November 2006 [Web site]; available from: <https://www.cia.gov/cia/publications/factbook/geos/sz.html> ; Internet; accessed 16 November 2006.

¹²⁵ Victor Vroom, *Expectancy Theory; Motivation and Management*, Value Based Management 2006, [Web site]; available from: http://www.valuebasedmanagement.net/methods_vroom_expectancy_theory.html; Internet; accessed May 15, 2006.

¹²⁶ The “blogosphere” is the world of blogs, bloggers, and their interconnections. It lies mostly on the Web, but it intersects traditional media and social networks as well. David Sifry, “State of the Blogosphere, Part 2,” Technocrati, 13 February 2006 [Weblog online]; available from: <http://www.sifry.com/alerts/archives/000420.html> ; Internet; accessed 8 May 2006.

2006.¹²⁷ This shows that an amazing amount of information is being shared by individuals who are now linked in informal networks for whatever reason they see fit.

Five motivations for blogging were identified:

- Documenting the author's life and experiences
- Expressing opinions and commentary
- Venting strong emotions
- Working out ideas through writing
- Forming and / or maintaining virtual communities¹²⁸

These five factors give great credence to the notion that if ICIN is built, the humanitarian community will see it as a viable outlet to discuss, address, document, network and express emotions (either good or bad) about humanitarian operations.

Motivation is a personal as well as psychological human quality. Essentially, humans want to have a vehicle to express their ideas, concerns, experiences and goodwill to the masses. ICIN will be a conduit for that goodwill, in that the website will allow people who have similar perspectives and ambitions to share information related to humanitarian assistance.

B. THROUGHPUT AND COMPONENT ATTRIBUTES

This section of the thesis will focus on the throughputs that the thesis team anticipates will need to occur in order for the website to provide the requisite information to the user.

Figure 12 (page 62) illustrates the flow of information from the global community, through the technology (Internet), utilizing the website (ICIN), the validation by human counterparts and the return to the website for user interface.

¹²⁷ ¹²⁷ The "blogosphere" is the world of blogs, bloggers, and their interconnections. It lies mostly on the Web, but it intersects traditional media and social networks as well. David Sifry, "State of the Blogosphere, Part 2," Technocrati, 13 February 2006 [Weblog online]; available from: <http://www.sifry.com/alerts/archives/000420.html>; Internet; accessed 8 May 2006.

¹²⁸ Bonnie Nardi et al. "I'm Blogging This: A Closer Look at Why People Blog," University of California, Irvine, 2004 [article online]; available from: <http://www.ics.uci.edu/~jpd/classes/ics234cw04/nardi.pdf>; Internet; accessed 15 September 2006.

1. Hardware / Software

The technology used for the creation of the website will be commercial-off-the-shelf (COTS) and will be compatible with both Microsoft and Macintosh operating systems.¹²⁹ The server that will host the website is managed by Mr. Charles Herring, a contractor hired by the Cebrowski Institute at the Naval Postgraduate School. The server was originally going to be managed by Mr. Chris Gunderson, an NPS research associate professor, and maintained by the Cebrowski Institute. His server, located in Reston, Virginia, is known as W2COG or World Wide Consortium of the Grid, and hosts a number of educational, private and governmental entities.

This server is essentially “attached” to NPS by funding, personnel and professional relationships. The decision to utilize the NPS server was based on availability, cost [the thesis team is being hosted free of charge], and *credibility*. The website could easily be hosted on a commercial server, such as Yahoo™, but the thesis team elected to utilize an environment that would be free from outside influences. Despite being funded and housed in a Navy Installation, the website and server will in no way be used for data-mining or any other type of subversive actions. The server will simply be a physical location for the website to reside until the website can be migrated to another server for further use and expansion. A prototype website will be created and tested at NPS. The thesis team realizes that the short time spent at NPS will not allow ICIN to reach its full capability.

The technological variants that could be used to manage the data would be located in at least three locations around the globe. The technology that once took up entire floors in office buildings now only takes up the space of a hall closet. The technological aspects of the project will come in time and will change drastically in the course of the coming months. The focus of this section of the thesis is the organization.

2. Website Component Attributes

Throughout the research development process, specific attributes came to light that were very desirable for both civilian and military persons. The following section

¹²⁹ The server to be used is a Dell™ Power Edge 850, Intel Pentium® D Processor 830 at 3.0 Ghz/2X1MB Cache, 800 MHz FSB, 2GB DDR2, 533 MHz, 2X1GB Dual Ranked DIMMs, 160 GB, Serial ATA Hard Drive, 1X64-bit/133 MHz PCI-X

will focus on those specific attributes in a non-technical manner. Areas that will be expanded upon are the foundation on which the website is situated, the contents of the open portion (non-password protected area), the specific features that are designed to attract users, the core-members area and the technological aspect of the website.

a. *Foundation*

Throughout the research conducted, especially during interviews with both military and NGOs, it was conveyed that the primary domain through which to operate the website would be through a “.org” (dot-organization) site or a “.int” (dot-international) web address, as opposed to a “.mil”, “.state” or “.gov”. The use of an “.org” or “.int” enhances the anonymity of the site and its users. The foundation of the website rests on this fact. ICIN will continually strive to set itself apart from the military, government, or state influence.

b. *Open-Source Portion*

This area of the website will be completely unclassified and will be based upon open source information. It will in no way, shape, or form include military maps, charts or other items that are normally classified. The intent is to share information freely. The only way to share such information is to ensure that the information is void of any information that may be used against a military or civilian force. Too often, especially in a combat situation where humanitarian aid is being conducted, the military tends to over-classify information, to include the daily weather reports. This section will be based on open-source information only.

In order for the website to truly be international, it must be multi-lingual. The thesis team originally has designed the website in English. As previously described, the most prominent additional languages for future expansion should include French and German as a vast majority of the humanitarian organizations use offices that are based in Europe. Additional languages to consider would be Spanish, Japanese, Russian and Italian.

In addition to being multi-lingual, the website must have the ability to operate in both high and low bandwidths. This feature would be selected on the website homepage and allow users to choose the best dial-up or internet connection for their specific location. For example, if you were in your office in New York City and

preparing for a humanitarian mission, you should have no problem accessing all of the features of the website, normally through a high-speed connection. However, if you were in Darfur, Sudan, for example, you would have a completely different situation where you would simply want to access the website using a low bandwidth in order to send and receive text-only messages.

The website would utilize a web-ticker, similar to news broadcast stations that will contain humanitarian specific information on a continuous basis. This feature would allow the user to gain a quick overall summary of situations around the globe. The homepage would also contain real-time updates on current humanitarian activities through the use of “hot-buttons”. These “hot-buttons” would link the user to the latest information about an ongoing crisis.

Past disasters would include archival information on a “hot-button” page. The user could utilize this area to begin research on a specific type of disaster (earthquake, tsunami) in preparation for future responses and planning purposes. The open portion of the website would incorporate multiple outside links to websites that provide excellent resources for the user. It is the intent of the thesis team to avoid recreating a product that another organization administers appropriately.

c. Attraction Features

In order to attract users to the website, the thesis team drew upon the experiences of humanitarian professionals to design attributes of the website that would entice the user to visit our web address and provide a free exchange of information for the community to use. The main attraction features of the website are a consolidated events calendar, online certification courses, and advocacy postings.

Humanitarian organizations spend a lot of time and energy communicating what they do, when they do it, and how others can assist them. A very good example is the Mercy Corps website (www.mercycorps.org). Mercy Corps has a very professional website with photos and links through which the user can access a great deal of information about Mercy Corps. The website is very focused in its purpose, as it should

be. It does, however, have to be viewed in order to communicate its information, as the humanitarian community does not collate information from multiple sources into one site for the benefit of the larger group.

For example, at no single location on the Internet can you retrieve information on currently planned events in the humanitarian community. A consolidated events calendar would fill that need and attract many users to the website. The calendar will be designed so that the user can simply select a specific date, or range of dates, and view a short description of the events occurring. Once the user locates a topic that interests him or her, they simply double-click on the reference and they will be hyperlinked to the website of the host organization. It will contain descriptions, information abstracts and links to the host websites so that the user can see what conventions, seminars and conferences are available in their immediate vicinity or in their particular line of work.

In the initial phase, this calendar would be physically created by the research team members. The researchers would go to each organizations webpage, locate and collate the information and then post it on the website. It is the hope of the thesis team that once ICIN becomes popular in humanitarian circles, that the organizations will provide ICIN with the information for their upcoming events; in effect free advertising for the participants.

The second attractive feature is the online certification courses. The military provides opportunities for its personnel to attend educationally advancing schools and institutions throughout their career. Humanitarian organizations do not have the ability to conduct college-level courses or post graduate work for their volunteers or employees. Online certification courses are available in areas that include Emergency Management, NATO CIMIC and various courses offered by the United Nations. While these courses are generally free, they do, however, require a certain amount of finesse to locate the correct weblink or web address. The certification portion of the website would essentially, “break the code” for these courses and enable the user to gain a better understanding of the world in which they work.

The final feature through which the thesis team expects to attract users is the “Advocacy Postings” section. Here, the user can view postings from specific regions and countries around the world to see what needs exist. For example, a user who is preparing a humanitarian aid package can research the needs of the people in the area. If a local NGO (most likely functioning as a guide for much larger NGOs) sees a need for propane stoves as compared to plastic sheeting for dwellings, they can post that information. The NGO that is preparing their relief package can alter the shipment and get the appropriate equipment to the area. The idea of this portion of the website is similar to eBay™, except that those in need can actually communicate with those who provide the assistance. This has never been attempted before in this type of collaborative setting.

d. Core-Members Area

The Core-Members area is the heart of the website. This is where participants can share information and experiences with each other. This will be self-perpetuated by the individual users or members who feed the information into the website. This area will be protected by a secure login procedure. The thesis team debated over whether or not to utilize a password protected area of the website, but the majority of the interviews conducted recommended that the comments that were made by the users should be protected from outside influence.

The login procedure will include the creation of a profile. The user will be encouraged to create a profile that does not connect them with their parent institution, in order for a free-flow of information to occur. The user then will be sent a temporary password to an approved, working email and will be routed back to the website to create a new password. This simple security feature will keep at bay persons who may wish to harm the website or its contents.

The hinge of the core-members area is the blog¹³⁰ section. Here the user can leave a message pertaining to a specific region, topic or country. The blog also

¹³⁰ A blog is a frequent, chronological publication of personal thoughts and Web links. It is commonly a mixture of what is happening in a person’s life as a hybrid diary/guide. Marketing Terms. “*Blog Weblog.*” 2006 [Web site]; available from: www.marketingterms.com/dictionary/blog ; Internet; accessed 17 September 2006.

allows users to find each other each time they login to the website. The blog section is intended to focus on user-to-user conversations and the creation of working networks.

At least monthly, ICIN will host mediated Online Discussion Groups. These discussions will be hosted by subject matter experts (SME) in the field related to the topic at hand. Suggested topics will be submitted by the core members. The intent of the discussion groups is threefold; 1) to bring together users who are interested in or have experience with a particular topic, 2) to gain a heightened awareness of the topic discussed and 3) to build networks of users who will continue to communicate with each other based on those shared/common experiences.

In addition to the availability of the blog and the discussion groups, a completely new feature will be utilized. The thesis team wanted to encourage users to provide information to each other that they could not find in a manual, on another website or from the journal left behind by the person whom they were sent to replace. Normally this type of information would be called After Action Reviews, Best Practices, Lessons Learned or Debriefs. All of the previous terms are simply too militaristic to be used on ICIN. As discussed in Chapter II, the thesis team created the acronym “TIPS”™, or Techniques, Insights and Problems Solved. The intention is to convey to the user that the site was in need of information that could not be derived from a book, report or other website.

The information that is encouraged to be shared in this portion of the website would consist of those things that a person who is working in a particular area would only know if they were actually in the country. For example, a person who is in Bangladesh could post the appropriate amount a person should pay for a taxi from the airport to the city center. A user in Afghanistan could post TIPS about the true level of the current water table and encourage those that want to dig wells to expect to dig up to 250 feet deep instead of 100 feet due to a drop in the water table. The postings that give structure to TIPS are those things that are normally not passed onto the incoming personnel, are not relayed back to the headquarters of a responding NGO or other service, and often cause doubling of work effort in numerous areas.

e. Technological Aspects

The website will be built using the latest technological apparatuses and features in order to prolong the usefulness of ICIN. The reason to incorporate the following features in ICIN is based on the analogy that the personal computer upon which this thesis was written was outdated the minute it was purchased. ICIN will also need to evolve and change over time.

ICIN will have the ability to use Rich Site Summary Feeds, more commonly referred to as RSS. These feeds will be programmed directly into the website to gather information about specific topics. The RSS feed act like a fishing net that catches only one kind of fish...the others pass right through. Users will also have the ability to alter their ICIN Profile to send RSS updates directly to their email addresses. For example, if the user wanted automatic updates on the number of refugees displaced in Darfur, Sudan, the RSS feed would search for that information and when it was located would send it to an email address.

Discussed previously was the concept of the website being self-regulatory. In essence, the members will have the ability to alter, modify and update the website through the use of Wiki. Wiki (Hawaiian word for “quick”)¹³¹ allows the user of the internet to change the content of the website. To date, the most common format for the wide use of Wiki is Wikipedia.com. Wikipedia was created on January 15, 2001 by Jimmy Wales and has grown to contain over 3.5 million entries and appears in 123 different languages. The use of Wiki technology will give the user an opportunity to make a functional update or change to the website, thus giving them a sense of “belonging” to the experience. Jimmy Wales was asked “why” people post submissions and make updates to the contents of Wikipedia, he stated that, “They view this as a charitable and worthwhile mission. They believe that sharing knowledge is beneficial for society.”¹³² That is what the thesis team wants to enable the users of ICIN to do...share information that is beneficial for the humanitarian community.

¹³¹ Brian Greencard, “There’s No Such Thing as Too Much Word Play”, *American Way* (2006).

¹³² *Ibid*, 2006.

A third technological aspect of ICIN that will be used is the use of Drupal, an open source content management platform. According to the Drupal.org website, Drupal is,

software that allows an individual or a community of users to easily publish, manage and organize a great variety of content on a website. Tens of thousands of people and organizations have used Drupal to set up scores of different kinds of web sites, including:

- community web portals and discussion sites
- corporate web sites/intranet portals
- personal web sites
- aficionado sites
- e-commerce applications
- resource directories

Drupal includes features to enable

- content management systems
- blogs
- collaborative authoring environments
- forums
- newsletters
- picture galleries¹³³

Lastly, the use of Text and Blackberry™ compatibility is being explored. Based on personal interviews, the majority of humanitarian workers in the field today range between the ages of 20 and 45. The next generation of humanitarian workers is currently 12-20 years of age. This next generation of humanitarian workers is accustomed to sending and receiving messages in text and email, unlike a number of older humanitarians who still cling to the age of typewriters and carbon paper. ICIN must be designed with this new generation in mind.

The usefulness of text and Blackberry™ technology will greatly assist in the collection and dissemination of information from around the globe. While workers may not have access to an internet connection, they may have access to a local country or

¹³³ Drupal is open source software licensed under the GPL, and is maintained and developed by a community of thousands of users and developers. Drupal is free to download and use. Drupal, [Web site]; available from: <http://drupal.org/about> ; Internet; accessed 20 September 2006.

international cell phone. Those phones have the capability to send and receive messages and ICIN will have the ability for a user to dial-in information that will subsequently be posted on the website.

This design quality is attributed to personal experiences. During the Indonesian Tsunami that occurred in December 2004 a member of the 96th Civil Affairs Battalion (Airborne) was responding to the disaster. Devoid of internet or other military communication devices enroute to Banda Aceh Province, this individual contacted his parent unit at Fort Bragg, North Carolina using text messages. These messages were sent from a local Indonesian Cell Phone (SIM Card, Pay-As-You-Go variant) to a personal cell phone in the United States. All message traffic was short and unclassified; however, the information sent was very timely and important to those personnel responding to the disaster.

These attributes described above utilize the latest technology, concepts and suggestions and have been assimilated and structured within ICIN and will be discussed at length in the following section.

3. Structure

The ICIN structure follows the model in Figure 12. It illustrates that information from the global community is brought to the website. ICIN then provides an open access area where users can select the use of numerous tools to assist them in conducting humanitarian work. These open access tools are designed to attract users to the website and solicit them to create an ICIN Profile in order for them to share further information. If the user decides to go further than the open access area, they will be prompted to create an ICIN Profile.

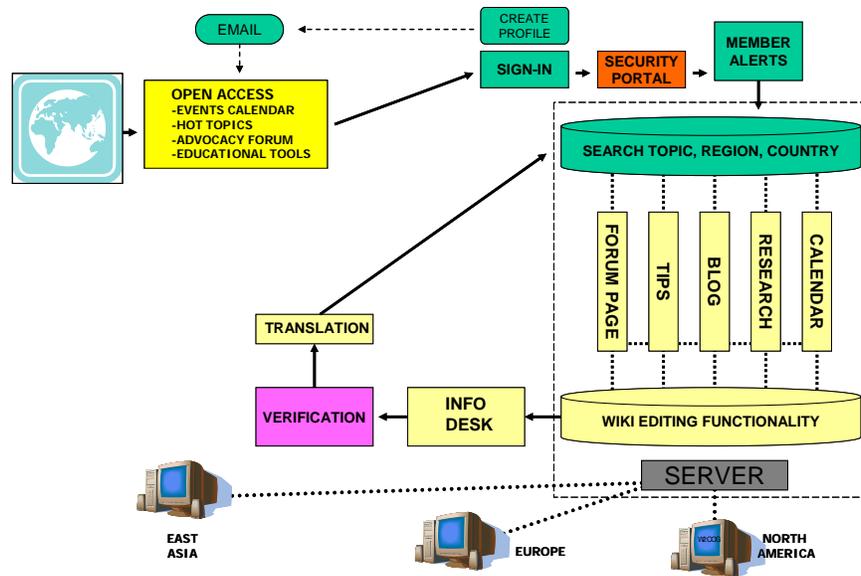


Figure 12. ICIN Structure.

When creating a profile, prospective members will be encouraged to create an anonymous screen name, if they so desire. An anonymous screen name will prevent users from being constrained by their agency, company, NGO, unit, etc. and will heighten the free-flow of information between networked entities. Each profile will then be approved and routed back to the respective user using a working email address. Once the confirmation email is received, each user will be prompted back to ICIN.

Once the approved ICIN user gains entry to the members-only portion of the website, the user will pass through a Security Portal. This area will be used to inform ICIN users that information shared on the website is scrutinized to the best of the ability of the ICIN manager and that ICIN cannot be held liable for any falsely posted information. The portal will also be used as a reminder that information shared on the website should not contain date/time specifics as those entries may risk the security of one agency or another. For example, ICIN users should not post the following: *“Tomorrow at eight o’clock, a convoy of ten trucks will be heading North up Route #1 to deliver 50 tons of grain to city X.”* They can however ask other ICIN users if they have resources that could assist in the movement of humanitarian aid, if they have items that need to be moved and so forth. These “intimate exchanges” of information can occur once ICIN users begin to create their network and they can chose to share their emails or other contact information directly with each other.

Once through the Security Portal, the ICIN users will have a wealth of knowledge and abilities at their fingertips. A Member Alerts page will inform users of future discussion groups and changes being made to ICIN. Each ICIN user can then select a specific topic, region or country through the use of “drop-down” windows. These are simple click and select options that assist in the navigation of the website. The ICIN user can then post a BLOG, TIPS, conduct research or participate in a forum or discussion group.

The postings will then be open to WIKI editing. This will allow other users to review, and add/edit to a posting. The intent is to make the website self-functioning in that the researchers will not be burdened with populating the website. ICIN users will maintain the integrity of the contents through interactions with other users. Postings will not appear automatically. They will be filtered through a review process, first by the researchers at the information desk and then verified, translated and routed back to the main site. ICIN users will also have the capability to “flag” a posting and signal to the researchers that someone is not following the rules.

The thesis team envisions the servers being located in three main areas around the world; North America, Europe and East Asia. Access to a server in the direct region of the world is much easier than having to download information from half way around the globe. This facet of the structure of ICIN will be discussed in greater detail later in the thesis.

C. INPUTS

1. Environment

When discussing ICIN’s environment, there are actually three different environments that we need to address. The first two are in the ICIN domain in which it functions as a business, specifically, as a web site in the World Wide Web. These two environments are the task environment and the general environment, both part of ICIN’s domain. The third one is the environment which ICIN aims to affect, that being the unstable regions caused by natural and manmade disasters around the world where the military, governmental agencies, NGOs and IOs operate.

Currently there are over 200 various web sites that provide information to those in the business of relief, stabilization and reconstruction, and humanitarian activities.

However, all of these sites are focused upon their particular organization and simply provide information. There remains then only a couple of sites that provide the services that ICIN will offer, thus making our domain very small and unique. One example is the website Aid Workers Network.¹³⁴

This unique domain is further broken down into two sub-divisions in what Daft refers to as the task environment and the general environment, each with five sub sectors.¹³⁵ Of these ten sectors, we will now address four from both the task environment and four from the general environment.

a. Task Environment

(1) Raw Materials Sector. For ICIN, the most pertinent raw material is simply information. While ICIN will provide some information, the bulk of it will come from our customers. Part of ICIN's tasks will be to collate information from other web sites, organizations, universities and institutes. For example, we will have sections of the web site that advertise events from all around the world; this will include seminars, symposiums, and training programs. The crux of the website, however, will be the lessons learned that our customer base would contribute to the site in the Wiki¹³⁶ portion or through on-line discussion forums based on their institutional knowledge but mostly drawn from their operational experiences.

(2) Human Resources Sector. ICIN will be a start up company operating in a simple stable dimension. As such, it will have a small staff (as described above). All personnel hired will have a high level of education. The techno structure of the company, for example, will be constituted by what Daft calls "gold-collar workers",¹³⁷ individuals who are highly educated in information technologies. Employees will have the requisite amount of education and training prior to their

¹³⁴ This web site provides a comprehensive resource for busy field workers needing practical advice and proven resources to help with their current work. Aidworkers [Web site]; available from: <http://www.aidworkers.net/>; Internet; accessed 29 April 2006.

¹³⁵ Richard Daft, *Essentials of Organization Theory and Design* (Ohio: South-Western College Publishing, 2003), 51-52.

¹³⁶ A wiki is a type of website that allows users to add, remove, or otherwise edit all content very quickly and easily, sometimes without the need for registration. Wikipedia contributors, "Wiki," *Wikipedia, The Free Encyclopedia*, <http://en.wikipedia.org/w/index.php?title=Wiki&oldid=57120412> (accessed June 6, 2006).

¹³⁷ Daft p 52.

employment with ICIN. The only additional training required will be to keep up with innovations and to attend sporadic seminars and workshops to remain abreast of current trends in the relief and humanitarian assistance community.

(3) Market Sector. Unlike a normal commercial business, ICIN does not seek to earn revenues. Therefore, it will operate much like a not-for-profit organization. Our product, as previously stated, is information. Our customers will provide that information. Therefore, there will be a type of symbiotic relationship between ICIN and our customers. ICIN will simply be the host for the information our customers provide in the form of TIPS. We will simply collect, synthesize, and then present the information the customers share. Once a customer offers his/her TIPS, we will make it available for the rest of our customer base.

(4) International Sector. While there are virtually no other web sites that provide the services that ICIN will provide; it is a start up business and will need to gain recognition and build client base above its closest competitors. The most respected and well-known competitor is the United Nations run Reliefweb.

The other factor in the international sector will be the establishment of multiple servers overseas. As ICIN grows, we will utilize a minimum of three servers. The multiple server concepts are based on the principle of locality. The mirror sites could mirror the production server such that those individuals who are overseas could have access to a server that is closer to them. One server will be in the US, one in Western Europe, and one in East Asia, India for example. The multiple servers will provide redundancy, in case one goes down, and will allow users to download files quicker. The multiple servers will serve three distinct purposes. One will be used as a development server which will be used for testing the website, a second server will be a production server that contains a final product website, and the third will be maintained as a redundant server for backup.

b. General Environment

(1) Financial Resources Sector. The start up costs for ICIN will be next to nothing. The initial web design and technical aspects of building the site will be free due to summer interns from the Information Sciences department at the Naval

Postgraduate School (NPS). Majors Catanzaro and Horine will complete the work with the actual content of formation as part of their thesis. The real costs will be incurred once we have built the site and it is operating. At that point, we will hand the site over to another organization, institute, or company.

Once the site is completed, we envision having four courses of action (COA) from which to choose. The option that is decided upon will determine the funding requirements.

The first COA is to create a company solely to run ICIN. This would be the most financially taxing. For this COA, we would need to locate donors who are willing to support the entire cost to run ICIN. Therefore, this is the least preferred COA.

The following COAs are based upon the premise that the thesis team would provide the hosting organization with the research that was generated throughout the thesis process and access to the prototype website for migration to a separate server. The following COAs are also submitted with the knowledge that they can be operated in a location other than the United States.

The second COA is to provide the prototype website to an existing website such as Reliefweb or HumaniNet.¹³⁸ In this case, the financial obligation these organizations would incur would simply be to increase their existing staff to meet the demands of an upgraded web site.

The third course of action would be to pass off the site to an educational institution, which already has programs or a curriculum related to relief or humanitarian operations, such as George Mason University in Fairfax, Virginia.¹³⁹ or to the Monterey Institute of International Studies (MIIS). Utilizing this COA, the university

¹³⁸ HumaniNet is another site like Reliefweb but privately run. It is a cooperative network of over 50 field organizations, several supporting technology businesses, and a group of expert volunteers who help with research and analysis, finding the best practices, and sharing field results in global information and communication technologies to those in humanitarian organizations. Humaninet [Web site]; available from: <http://www.humaninet.org/>; Internet accessed 2 February 2006.

¹³⁹ George Mason has two degree programs: one is the Peace Operations Policy Program, available from: <http://popp.gmu.edu/>; Internet; accessed 10 March 2006; the other is the Institute for Conflict Analysis and Resolution, George Mason University [Web site]; available from: <http://icar.gmu.edu/>; Internet; accessed 10 March 2006, which offers masters and doctoral degrees in conflict analysis.

would be required to develop a staff to run the site. Students as part of their degrees, however, could do much of the work. Additionally, universities generally have access to funds and grants that other organizations do not have for specific projects dealing with humanitarian related endeavors.

The fourth option is to offer our research and website specifically to a non-US organization. The use of an NGO or other organization that is located in Canada or Japan for example, would ostensibly increase the site's while seemingly sever the ties to the US, military or government.

(2) Technology Sector. One of the reasons ICIN is so unique is that it does not simply provide information, rather, it is a collaborative network and an online community. Experts call this Web 2.0. When the World Wide Web was first created, it simply provided one-way communication; this was the first generation of the web. The second generation began when the web became a platform, in that blogging and collaborative capabilities are prevalent.¹⁴⁰ An example between the first and second generation of the web is the difference between Encyclopedia Britannica and Wikipedia. The former is simply an on-line encyclopedia that provides information while the latter is collaborative, as discussed in Chapter II.

A recent study conducted by *Nature*, an on-line science journal, found some rather interesting data comparing Wikipedia with Encyclopedia Britannica. The study included 42 articles from both Wikipedia and Encyclopedia Britannica and compared them to each other for errors. "All told, Wikipedia had 162 such problems, while Britannica had 123. That averages out to 2.92 mistakes per article for Britannica and 3.86 for Wikipedia."¹⁴¹ This is a difference of only .94 more mistakes in Wikipedia articles than in Britannica.

(3) Economic Conditions Sector. One of the best features about ICIN is that the products are free. The only resources we ask of our customers are time and intellectual contributions. The only costs to run the company will be salaries,

¹⁴⁰ Tim O'Reilly, 30 September 2005.

¹⁴¹ Giles, Jim. "Internet Encyclopedias Go Head to Head," *Nature* 14 December 2005 [article online]; available from: <http://www.nature.com/news/2005/051212/full/438900a.html>; Internet; accessed 18 August 2006.

daily operating costs, occasional business trips, and the occasional upgrade in equipment. Referring back to the Financial Resources section, these costs will be dependent on who runs the company once we build it.

(4) Socio-Cultural Sector. ICIN's success will be wholly dependent on whether people will be willing to engage in and join an on-line community and contribute to it. There are many aid workers who are older and grew up without the internet. Many from this generation are not comfortable with the Web. However, members of the younger generation not only have grown up with the internet, for them it is second nature. This younger generation is perfectly comfortable with sites like Wikipedia and MySpace.¹⁴²

Having discussed the general and task environment in detail, we will now turn to the third environment that we need to address. The third environment in which ICIN operates is the one it hopes to affect, that is the communities struck by natural and manmade disasters. The purpose of ICIN is to empower the military, governmental agencies, NGOs and IOs to conduct effective humanitarian operations in a cooperative manner. These operations are conducted in extremely unstable and dynamic environments; examples of these environments are areas affected by earthquake, tsunamis, famine, domestic instability, civil war or conflict.

When a natural or manmade disaster strikes a community, country, or region, relief agencies deploy to meet the needs of those suffering. In some cases there may be multiple disasters occurring simultaneously within a conflicted area. For example, when the tsunami struck Southeast Asia, part of the region was already immersed in the conflict between the Tamil Tigers (Liberation Tigers of Tamil Eelam – LTTE) and the government of Sri Lanka. In Somalia, US forces deployed to curb the famine, this operation very quickly turned into a manhunt for Mohamed Farrah Aidid.

Before the 1990s however, when NGOs deployed to these regions, they could conduct their operations without regard to the military. Since then, these communities (military, governmental agencies, IO, and NGOs) have worked more

¹⁴² MySpace is a web site that provides a meeting place for its users. The site has blogs, instant messaging, and chat rooms. It is mainly used by the younger generation, teens and those in their twenties. MySpace [Web site]; available from: <http://myspace.com/>; Internet; accessed 25 April 2006.

closely and actually in cooperation with one another. It is in this environment ICIN will work to bring these communities together, for failure to do, will lead to poor air and humanitarian support to the most important stakeholders, the victims. We will now address the stake holders.

2. Stakeholders

As Figure 13 depicts, ICIN’s stakeholders come from many parts of society both domestically and internationally. The ICIN staff (located in the center) will serve a boundary-spanning¹⁴³ role between all the outside agencies, as depicted by the solid lines intersecting the various entities. Even persons affected by a disaster will have a function in the sharing of information. For example, there will be a portion of the site that they can go to and identify needs in their community. The relief agencies could then read of these needs and coordinate to meet those needs, similar to an eBay™ type business. This is another aspect of ICIN that is unique.

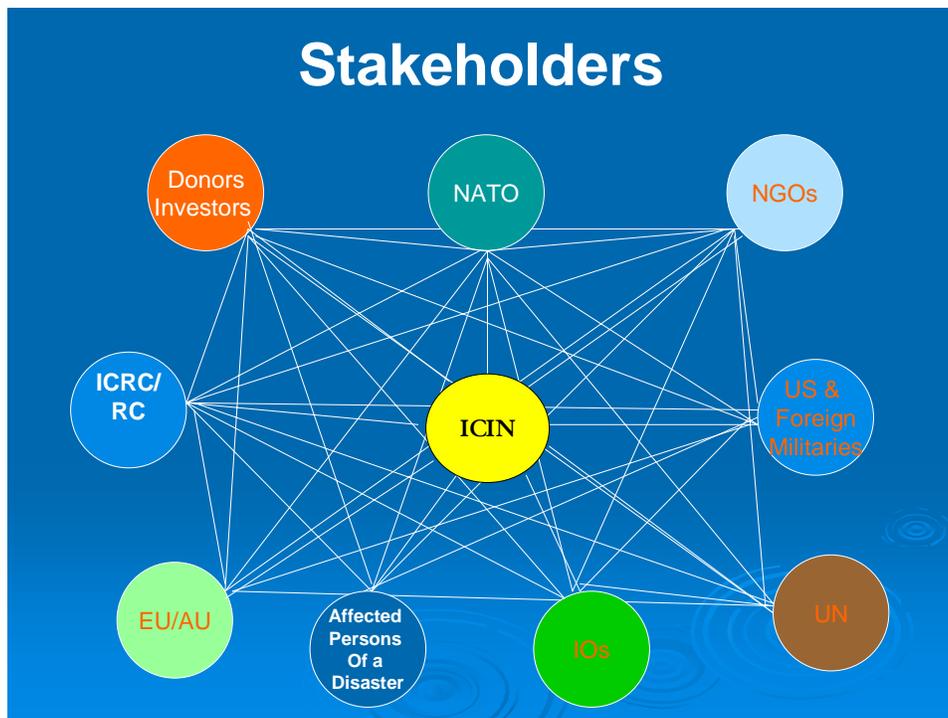


Figure 13. Stakeholders Model.

¹⁴³ A boundary spanner is person who brings others together to solve a problem; a counselor, mediator, facilitator. ICIN will bring together people from multiple agencies, entities and sectors of the humanitarian community.

3. Strategy

Our organizational effectiveness is wholly dependent on our stakeholders, more specifically, our customers and those persons affected by natural and manmade disasters. If ICIN is not facilitating the sharing of TIPS, which will lead to our customers providing a more efficient service to the beneficiaries of our customer base, those victims affected by natural and man-made disasters, then we have failed in our mission. Therefore, we developed, and initiated an effective strategy to ensure our success.

We started our work with interviews and exhaustive research much along the lines of a market analysis to identify the demand, identify the competitions, and identify the available resources to meet those demands. From this research, we have determined what content the ICIN web site needs.

The recent need or demand is for a web-based information-sharing network to collaborate TIPS. The competitors are for example, ReliefWeb, Humaninet, Aidworker, Development Gateway, Interaction, Gulf 2000, and over 200 other “area specific” – “one-way” sites. These sites offer Regional Overviews (Country Studies, Maps, Charts, Links), one specific area of study or interest, specific “organization” related information, news, and current events. What makes ICIN different is that its designed for the “on-the-ground” responder. The site will be collaborative, interactive, a one-stop-shop, where information is collated from all other sites.

4. Mission and Values

a. Mission Statement

ICIN will operate a web-based collaborative network to facilitate the sharing of techniques, insights, and problems solved (TIPS) between the US and foreign militaries, government agencies, international organizations, non-governmental organizations, and first responders, both domestically and internationally, to empower these communities to conduct effective humanitarian assistance and relief operations in a cooperative manner.

The operative goals of this network will be to reduce the separation between these communities (though that gap will most likely never be removed completely), capture lessons learned or TIPS, and jointly provide a more efficient service

to our customer base, those adversely affected by natural and man-made disasters. As highlighted in the U.S. military's joint publication 3-08, "Successful interagency, IGO [international government organizations], and NGO coordination enables the USG [U.S. Government] to build international support, conserve resources, and conduct coherent operations that efficiently achieve shared international goals".¹⁴⁴

These operative goals may be better understood in terms of ways, ends, and means. Reducing the separation would be the ways, capturing lessons learned through TIPS would be the means, and providing effective service to those affected by disaster would be the ends.

b. Values

This mission statement is predicated upon a value that all these communities have in common, that we all desire to assist those in need. There are some conflicting values, however, that have led to this separation between the communities. As JP 3-08 explains,

Each agency has core values and legal requirements that it will not compromise. These values form the foundation upon which key functions of the agency grow. In any interaction, all participants must be constantly aware that each agency will continuously cultivate and create external sources of support and maneuver to protect its core values.¹⁴⁵

Most notable is the NGOs' value of neutrality. As stated previously, NGOs believe their neutrality is a fundamental precept, which gives them access to parties in a conflict environment and provides the NGOs with personal security. Violations of the NGOs neutrality could endanger the lives of NGO personnel if hostile groups perceive that the civilian agencies are collaborating with any military personnel.

This principle of neutrality is most often perceived to be in conflict with the military which, in a hostile or conflicted environment, is opposing one belligerent or another. When the US provides disaster relief in benign environments, like the Pakistan earthquake relief or the tsunami and earthquake relief in Indonesia, the military is not conducting combat operations and therefore, an enemy does not exist, hence, the military

¹⁴⁴ Joint Publication 3-08, vii

¹⁴⁵ Ibid p. 18

is also neutral and provides relief indiscriminately. In such cases, IOs, and NGOs may be more willing and open to overtly cooperate and collaborate with the military. The issue of neutrality arises in combat operations and operations and in peacekeeping or peace enforcement operations.

In the latter environments, the military will no doubt take sides. In the Balkans for example, we were protecting innocent civilians from warring factions, mostly the Serbs, thereby demonstrating our allegiance to one side. In high intensity conflict or open warfare, the lines are even more distinct. In Operation Desert Storm (ODS) we had a clear enemy, the Iraqi Army, but in Operation Iraqi Freedom (OIF) the Iraqi Army melted into the countryside and an insurgent force eventually formed to take its place, blurring the lines of combat and humanitarian assistance. It is in these situations that relief groups take issue with the military and espouse their neutrality.

D. CONCLUSION

Numerous organizations in the world are trying to provide aid and relief to those who are suffering from natural and man-made disasters. While this is an extremely noble effort, there are countless occasions when these efforts have been futile because agencies will not cooperate or collaborate. The result has been the duplication of effort, aid or relief not being delivered, or the loss of time and resources because organizations are reinventing the wheel. For these reasons, it is imperative that militaries, government agencies, NGOs, IOs, and FRs come together and share information.

There is a great requirement for all parties involved to recognize and address this need. The thesis team has embarked on a mission to build ICIN and ultimately help the victims of various crises. Through the sharing and collaboration of TIPS, ICIN will empower these organizations to provide effective relief to those in need.

V. SUMMARY

The Law of Win/Win says, Let's not do it your way or my way; let's do it the best way.

Greg Anderson¹⁴⁶

A. PURPOSE REVISITED

Throughout the thesis, we have endeavored to answer the question: *How can we develop a system for the sharing of lessons learned between the military, NGOs, IOs and government agencies?* ICIN provides that answer in the form of a viable prototype which can be used to test our theory and meet our goals of: establishing a network that will allow military and civilian organizations to collaborate on lessons learned from operations in the civilian sector and areas of conflict in order to break down the cultural and stereotypical barriers between them that currently exist. ICIN will also achieve the goal of empowering individuals from the military and NGO/civilian community to conduct effective humanitarian operations in a cooperative manner

B. RESEARCH QUESTIONS REVISITED

We began this thesis by asking four questions that were established to guide us throughout the thesis process. The answers to those questions are as follows:

- *Can a web site bridge the gap between the military and other agencies?* Yes it can. ICIN has the ability to bridge the separation between the military and other relief agencies by establishing a “clearing house” of information that can be easily accessed, searched, and edited for the humanitarian community.
- *How has this separation inhibited operations?* The separation commonly occurring in areas of relief is caused by the lack of information sharing. NGOs and the military see each other as competitors, enemies, and the root cause for their lack of mission accomplishment rather than as partners in the situation. ICIN can facilitate communication and span the boundaries between these communities.

¹⁴⁶ Answers.com, [Web site]; available from: <http://www.answers.com/topic/anderson-greg>; Internet; accessed 21 November 2006.

- *Can we develop a system by which CA soldiers and the international community share lessons learned and collaborate on humanitarian missions?* Yes. ICIN would be the first site that would be a repository for lessons learned or TIPS in the area of humanitarian relief specifically tailored for both military and civilian agencies.

- *Who will maintain and fund the site, once we have created it?* The courses of action presented in the thesis outline possibilities for a number of entities (educational, private sector) that would be excellent sponsors of the ICIN project.

C. CONCLUSION

Throughout this journey, we have discussed and presented evidence on the issue of civilian-military relations. We addressed the history of civilian and military relations and determined that there is a separation between these communities. We identified the effects of the separation and determined that there was a need for increased cooperation between civilian and military agencies. ICIN was proposed as a solution to the problem.

The thesis illustrated the effectiveness of networks in history, identified network topologies, and described the rapid expansion of networks due to the increase of information technology and globalization. Other areas presented were “communities of interest” and Web 2.0, both crucial to the next generation of ICIN.

In the fourth chapter, a complete description of the components of the web site was discussed in finite detail and an organizational model was presented that illustrated the internal flow of information in and through ICIN. This flow of information facilitates the self-regulating aspect of ICIN.

In conclusion, we both have learned a tremendous amount about the possible uses of technology, the interaction between military and civilian agencies and the limitations on effectiveness when information is not shared. Throughout our discussions with multiple agencies, entities and personnel it has been overwhelmingly agreed upon that a system like ICIN needs and should be used by the community as a whole.

The questions remain: Will ICIN be used when created? Will ICIN be effective? Who will use it? These questions cannot be answered in the timeframe available for this thesis, but they lend themselves very well to the next level of research.

APPENDIX A: MULTI-LATERAL PEACE MISSIONS AND US COMBAT OPERATIONS, PAST AND CURRENT

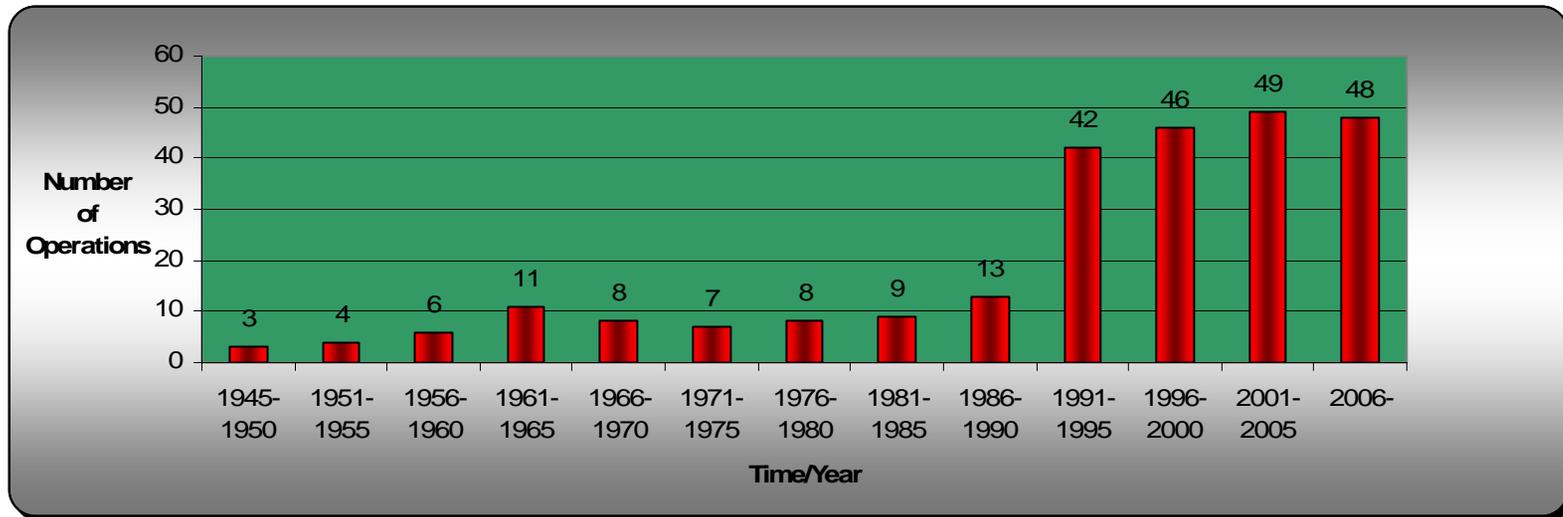


Figure 14. Multi-lateral peace missions and US combat operations, past and current

Figure 14 above, summarizes the following data. It depicts, for each five-year period, the number of operations that were ongoing at any one time. For example, from 1961-1965 there were eleven missions. However, that does not mean that those missions started and stopped in that time period. The UN mission in Western Sahara (MINURSO) began in 1991 and continues to this day. Therefore, that mission is counted in the last four sets of data. Conversely, UNSF in West New Guinea lasted only six months from October 1962 to April 1963. Hence, it is only counted in the 1961-1965 period.

The most remarkable data of this chart is that in the Post-Soviet era, the number of operations throughout the world increased dramatically. This increase in military operations, coupled with the increase in NGO and IO missions, results in tremendous congruency of work.

Table 3. Post-Soviet Era Peace Missions and US Combat Operations

United Nations (54 Operations) (By Region)¹⁴⁷			
<u>Africa</u>		<u>Asia</u>	
Angola - UNAVEM I,	December 1988 to May 1991	Afghanistan/Pakistan - UNGOMAP	May 1988 to March 1990
Angola - UNAVEM II	May 1991 to February 1995	Cambodia - UNAMIC	October 1991 to March 1992
Angola - UNAVEM III	February 1995 to June 1997	Cambodia - UNTAC	March 1992 to September 1993

¹⁴⁷ United Nations Peace Keeping Operations, [Web site]; available from: <http://www.un.org/Depts/dpko/dpko/ops.htm>; Internet; accessed 8 September 2006.

Angola – MONUA	June 1997 to February 1999	East Timor - UNTAET	October 1999 to May 2002
Central African Republic - MINURCA	April 1998 to February 2000	India/Pakistan - UNIPOM	September 1965 to March 1966
Chad/Libiya - UNASOG	May 1994 to June 1994	Tajikistan - UNMOT	December 1994 to May 2000
Congo – ONUC	July 1960 to June 1964	West New Guinea - UNSF	October 1962 to April 1963
Liberia – UNOMIL	September 1993 to September 1997	East Timor- UNMISSET	May 2002 --
Mozambique - ONUMOZ	December 1992 to December 1994	India-Pakistan - UNMOGIP	January 1949 --
Namibia – UNTAG	April 1989 to March 1990	<u>Americas</u>	
Rwanda – UNAMIR	October 1993 to March 1996	Central America - ONUCA	November 1989 to January 1992
Rwanda/Uganda - UNOMUR	June 1993 to September 1994	Dominican Republic - DOMREP	May 1965 to October 1966
Sierra Leone - UNOMSIL	July 1998 to October 1999	El Salvador - ONUSAL	July 1991 to April 1995
Somalia - UNOSOM I	April 1992 to March 1993	Guatemala - MINUGUA	January 1997 to May 1997
Democratic Republic of the Congo – MONUC	December 1999 --	Haiti - UNMIH	September 1993 to June 1996
Ethiopia and Eritrea - UNMEE	July 2000 --	Haiti - UNSMIH	July 1996 to July 1997
Sierra Leone - UNAMSIL	October 1999 --	Haiti - UNTMIH	August 1997 to November 1997

Western Sahara - MINURSO	April 1991 --	Haiti - MIPONUH	December 1997 to March 2000
<u>Europe</u>		<u>Middle East</u>	
Croatia – UNCRO	March 1995 to January 1996	Iran/Iraq - UNIIMOG	August 1988 to February 1991
Croatia – UNTAES	January 1996 to January 1998	Lebanon - UNOGIL	June 1958 to December 1958
Croatia – UNPSG	January 1998 to October 1998	Middle East - UNEF I	November 1956 to June 1967
Former Yugoslavia - UNPROFOR	February 1992 to March 1995	Middle East - UNEF II	October 1973 to July 1979
Former Yugoslavia Republic	March 1995 to February 1999	Yemen - UNYOM	July 1963 to September 1964
Bosnia & Herzegovina - UNMIBH	December 1995 --	Golan Heights - UNDOF	June 1974 --
Cyprus – UNFICYP	March 1964 --	Iraq/Kuwait - UNIKOM	April 1991 --
Georgia – UNOMIG	August 1993 --	Lebanon - UNIFIL	March 1978 --
Kosovo – UNMIK	June 1999 --	Middle East – UNTSO	June 1948 --
Prevlaka Peninsula - UNMOP	February 1996 --		

<u>Non-UN Missions</u> ¹⁴⁸¹⁴⁹			
<u>OSCE Operations (9 Operations)</u>	(The Organization for Security and Co-operation in Europe)	<u>NATO (4 Operations)</u>	
Mission to Skopje	September 1992 --	STAFOR (Bosnia/Herzegovina)	December 1996 --
Mission to Georgia	December 1992 --	KFOR (Kosovo)	June 1991 --
Mission to Moldova	February 1993 --	Allied Harmony (Macedonia)	December 2002 --
OCSE Centre in Dushanbe	February 1994 --	ISAF (Afghanistan)	December 2001 --
Presence in Albania	April 1997 --	<u>European Union (5 Operations)</u>	
Mission to Bosnia and Herzegovina	December 1995 --	EU Monitoring Mission (Albania)	June 1991 --
Mission to Croatia	July 1996 --	EU Police Mission (Bosnia/Herzegovina)	January 2003 --
Mission in Kosovo	July 1997 --	EU Operation (Macedonia)	March 2003 --
Mission to Serbia and Montenegro	March 2001 --	EU Operation (Dem Rep of the Congo)	June 2003 --
		EU Police Mission (Macedonia)	December 2003 --
<u>Russia and CIS (3 Operations)</u>		<u>Other Operations (7 Operations)</u>	
South Ossetia Joint Force	July 1992 --	Neutral Nations Supervisory Commission (N/S Korea)	July 1953 --

¹⁴⁸ SIPRI (Stockholm International Peace Research Institute) Yearbook Armaments, Disarmament and International Security, (New York: Oxford University Press, 2006, 164 - 182.

Peacekeeping Force (Moldova)	July 1992 --	Multi National Force and Observers (Sinai)	April 1982 --
Peacekeeping Force (Georgia)	June 1994 --	International Presence (Hebron)	January 1997 --
		Peace Monitoring Group (Papua New Guinea)	July 2003 --
<u>CEMAC</u>			
Multi National Force (Central African Republic)	December 2003 --	Protection and Support Detachment (Burundi)	November 2001 --
<u>ECOWAS (2 Operations)</u>		Transition Team (Papua New Guinea)	July 2003 --
Mission in Cote d' Ivoire	February 2003 --	Regional Assistance (Solomon Isles)	July 2003 --
Mission in Liberia	July 2003 --		
<u>African Union</u>			
Mission in Burundi	April 2003 --		

<u>US Combat Operations</u>	(This does not include multi-lateral peace listed missions above, nor operations in the Balkans).
Korean War	1950 – 1953

Vietnam War	1965 – 1975
Grenada Invasion	October 1983 -
Beirut	1983
Panama Invasion	1989 - 1990
Desert Shield/Storm	1990 – 1991
Somalia	1993
Afghanistan	2001 --
Iraq	2003 --

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX B: GAME THEORY

A Theoretical Analysis of the Information Sharing Between Military and Non-Governmental Entities

A. BACKGROUND

Historically, there has been a separation between military personnel and Non-Governmental Organizations (NGO). Both of these communities are stigmatized by misconceptions, biases, and stereotypical perceptions of each other. Ironically, these communities have been working in the same areas on the same type of operations.

The result has been a breakdown of communications, repetitive work, loss of lessons learned and ultimately the non-facilitated assistance to those in need. It is in this frame of reference that we ask the following question: Given a country in conflict with intertwined combat and humanitarian assistance needs, what is the best way, using game theory, for military and NGO entities to maximize the information shared and preserve their individual interests. This game will be based on the personal experiences and accounts from the field of humanitarian aide workers and volunteers.

B. SITUATION

In country “X”, a conflict rages with both combat and humanitarian areas. The military and NGOs both have mandates to assist the host nation populace. Both groups have instructions from superiors regarding what information can and cannot be shared.

The military has been instructed by Department of Defense (DoD) Directive 3000.05 to work with the NGO community in order to assist the effected population.

The NGO entities have strict instructions not to interact with the military directly as they may be viewed by hostile groups as “sympathetic” towards the military and therefore, may become targets as well. NGOs are commonly instructed, by their donors, not to interact with military personnel.

C. ASSUMPTIONS

- Both the military and NGO entities are rational actors.
- Both entities are attempting to maximize their information position while minimizing the other player's information position in accordance with their instructions in a zero-sum situation. In a partial-conflict situation, both players maximize their individual positions.
- Information shared will be of an unclassified / open-source nature.
- Information sharing takes place in a "safe area" of Country "X".

D. THE ANALYSIS

The analysis will utilize a Partial Conflict game, and a breakdown of each player's Strategic Moves in order to determine the best situation for each entity and when both sides can equally share information.

E. THE ACTORS

The scale values listed below (Figure 15) are ordinal¹⁵⁰ in nature and represent a "Worst" being 1 and "Best" being 4.

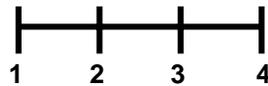


Figure 15. Ordinal Scale Rankings

a. Military Ranking Options

Ranking of 4 (Best): Sharing ALL but "Classified Information", while maintaining close contact with NGOs.

Ranking of 3 (Next Best): Sharing pertinent humanitarian information with NGO through the CMOC (Civil Military Operations Center). Doctrinally, this is how the military communicates with NGOs, either through the CMOC, the HOC (Humanitarian

¹⁵⁰ Wikipedia contributors, "Ordinal Scale," *Wikipedia, The Free Encyclopedia* [wiki online]; available from: http://en.wikipedia.org/wiki/Ordinal_scale; Internet; accessed 24 August 2006. An ordinal scale defines a total preorder of objects; the scale values themselves have a total order; names may be used like "bad", "medium", "good"; if numbers are used they are only relevant up to strictly monotonically increasing transformations (order isomorphism). See also level of measurement.

Operations Center) or the HIC (Humanitarian Information Center). The US uses the term CMO (Civil-Military Operations) to describe the task of Army Civil Affairs. European militaries use the term CIMIC (Civil-Military Coordination) to describe its functions on the battlefield.

Ranking of 2 (Next): “Unscheduled” and “When Available” sharing of information. This is a common form of communication between the military and NGOs as the NGOs often see the CMOC as another “target” for hostile forces, so information is exchanged in an ad hoc manner.

Ranking of 1 (Worst): No sharing of information with NGOs, No coordination, NGOs place themselves in harms way by not being informed of possible military actions in their areas. Military is not aware of NGO’s actions and does not integrate relief assistance.

b. NGO Ranking Options

Ranking of 4 (Best): Receiving 100% of military information and sharing 85% of NGO information, maintaining contact in an anonymous manner. NGOs often consider some of their information “Classified” as well. For example, an NGO may have the demographics of a refugee population including names and ages. This information, which the NGO may regard as “classified”, would be very useful to a military searching for possible terrorists, political threats, etc.

Ranking of 3 (Next Best): Receiving 100% / Sharing 100% of information, maintaining direct contact through the CMOC, HOC or HIC.

Ranking of 2 (Next): “Tit-For-Tat” Sharing, coerced situations and meetings. Similar to the ad hoc information sharing by the military. This sharing of information would happen by chance. The sharing of information has the possibility of being useful, and it would not endanger the credibility of the NGO.

Commonly, NGOs do not want to have any semblance of association with the military because of the perception that they may be targeted by hostile forces. This *perception* has proven to be false by recent events in Iraq and Afghanistan. All persons in the battlespace are fair game; combatants, women, children, weddings, and funerals.

Ranking of 1 (Worst): No sharing of information and operating independently. Information is not shared, NGOs conduct operations as they see need.

The military is not informed of NGO whereabouts and cannot provide security for humanitarian missions.

F. THE GAMES

The matrix is designed to reflect the SHARE or HOLD positions of both “players” according to their specific choices, best to worst. Figure 16 illustrates the matrix template that will be used throughout the discussion.

		C Share	D Hold
A Share		3 , 4	2 , 2
B Hold		4 , 3	1 , 1

Figure 16. Game Matrix Template

Referring to Figure 17, the security position of the military is identified as 2, and the security position of the NGO is identified as 3. This result is reached by maximizing the position of one player while minimizing the opponent’s position. The Security Position indicates the *worst* that each player can do given the Partial Conflict game.

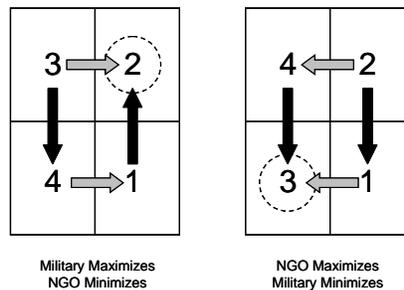


Figure 17. Matrix Security Positions

In the partial conflict game, both players attempt to maximize their own position. This combination illustrates what can happen when both players elect to make the most of the situation. Figure 18 illustrates the results of a Partial Conflict game where both players attempt to maximize their individual positions.

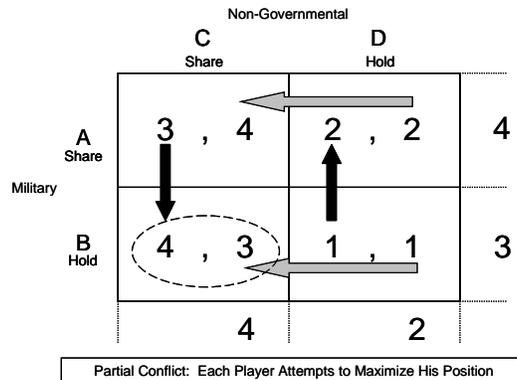


Figure 18. Partial Conflict

- Analysis of military game: The military player maximizes from 3 to 4 and from 1 to 2 in each prospective columns. The best resulting quadrant, is therefore, BC where the military player achieves the “best” amount of 4.
- Analysis of NGO game: The NGO player maximizes from 2 to 4 and from 1 to 3. However, in this case, the location that is most likely to be chosen has a value of 3 for the NGO, as the military is most likely to choose row “B” if the NGO chooses column “C”.

The partial conflict Game results in a Nash Equilibrium existing in quadrant BC with a value of (4 Military, 3 NGO). The military shares all unclassified information with the NGO and the NGO in return also shares all related humanitarian information with the military in order to successfully attend to the crisis and population in need.

In this Partial Conflict game, the players reach a Nash Equilibrium in quadrant BC (4,3). This is an example of what Philip Straffin in his book, *Game Theory and Strategy*, defines as a two-person game that is “Solvable in the Strict Sense” or SSS.¹⁵¹ This game is SSS because one equilibrium is Pareto optimal,¹⁵² and if there is more than

¹⁵¹ Straffin, 1993.

¹⁵² Wikipedia contributors, “Pareto Optimality” *Wikipedia, The Free Encyclopedia* [wiki online]; available from: http://en.wikipedia.org/wiki/Pareto_optimality; Internet; accessed 24 August 2006. **Pareto efficiency**, or **Pareto optimality**, is an important notion in [neoclassical economics](#) with broad applications in [game theory](#), [engineering](#) and the [social sciences](#). Given a set of alternative allocations and a set of individuals, a movement from one allocation to another that can make at least one individual better off, without making any other individual worse off, is called a **Pareto improvement** or **Pareto optimization**. An allocation of [resources](#) is **Pareto efficient** or **Pareto optimal** when no further Pareto improvements can be made.

one Pareto optimal equilibrium, all of them are equivalent and interchangeable. A graphic representation of the Partial Conflict game is illustrated in Figure 19.

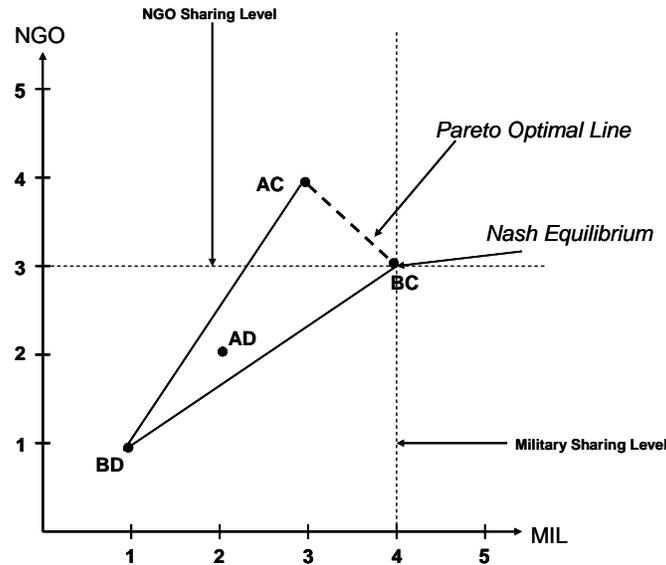


Figure 19. Nash Equilibrium Outcome

By intersecting the Nash Equilibrium of (4,3) with the respective axis of the players [military at x and NGO at y], the maximum sharing levels are evident. The military exhibits a maximum sharing level of 4 and the NGO exhibits a maximum of 3, intersecting at (4,3). The line that is created from (4,3) to (3,4) illustrates the Pareto Optimal Line. This line graphically represents the coordinates from which both players have the best results without degrading the outcome of the other player. In this case, (4,3) represents the best that both players can achieve.

It is crucial to understand that the above games involved simultaneous moves by each player without communication. In that respect it is necessary to evaluate the game from the perspective of each player independently. This evaluation will demonstrate dominant strategies, Nash equilibriums, likely outcomes, and whether the player should elect to go first or second, given the opportunity for communication.

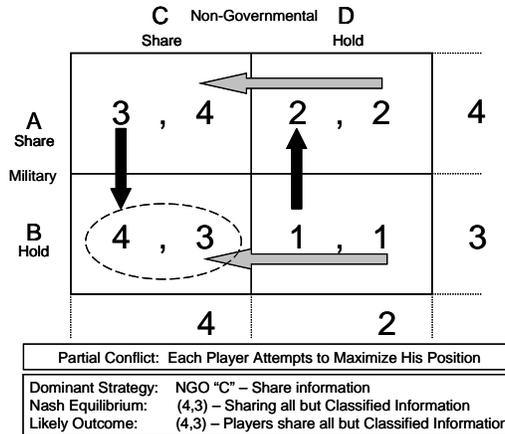


Figure 20. Strategic Moves

- Analysis of military game: The partial conflict game shows evidence that the military has the ability to reach its “best” outcome of the game by choosing “B” and sharing all but “Classified” information with NGOs.
- Analysis of NGO Game: The NGOs can improve both of their positions by choosing to share their information with the military. The most likely result is BC. The NGOs have a dominant strategy in that both positions improve in the “C” column.
- Analysis of Strategic Moves: Since the NGOs are dominant to “C”, it is in the interest of the military to choose their “best” position in row “B”. This strategy is used without communication and simultaneously by both players. Movement to BC has been predetermined by both players to be their best move. For example, referring to Figure 20, if the military chooses row “A”, then the NGO will choose column “C”. If the military chooses row “B”, then the NGO will again choose column “C” and vice versa. Both players wish to improve their individual positions. The last option occurs when the NGO chooses column “D”. The military attempts to maximize its position by moving to row “A.”

G. SUMMARY

Throughout the process, the game has indicated that both players had the opportunity to adequately and effectively share information with the other player according to their individual criteria. The best option for both players was a situation

where the military would share all but “Classified” information and would maintain close contact with the NGO. Conversely, the NGO would freely receive and share information with the military and would maintain direct contact through the CMOC, HOC or HIC.

The sharing of humanitarian information between respondents is critical to fulfilling the needs of the affected population. An example of this is illustrated in the works of Robert Axelrod¹⁵³. In his book, *The Evolution of Cooperation*, he found that by performing multiple iterations of the Prisoners Dilemma, that the game actually produced a long-term incentive for cooperation, while a short-term game provided an incentive to defect. Theoretical models of human behavior and actions can assist in determining the best outcome for a plausible situation. The misperceptions, attitudes and biases of one organization to another need to be put on hold and all parties must work together in order to accomplish the mission at hand...saving lives.

¹⁵³ Axelrod, Robert. *The Evolution of Cooperation*. New Jersey: Princeton University Press, 1997.

APPENDIX C: TIMELINE

The following timeline illustrates the persons and agencies that were involved, either directly or indirectly, by participating in interviews and support throughout the thesis research process. The intent is to identify these entities to eliminate redundancy in future research efforts.

19 November 2005

Phone Conversation with Tony Burgess, Co-Creator of Company Command.com

12 January 2006

Meeting with Dr. Peter Denning, Professor, Chair, Director of the Cebrowski Institute

13 January 2006

Phone Conversation with Chris Gunderson – W2COG

15 January 2006

Phone Conversation with CPT Don Smith CPE and ACTD connection at Ft Leavenworth

26 January 2006

Thesis Support Concept Discussion with Sue Higgins Lecturer of IS, Deputy Director of Cebrowski Institute

19 – 25 March TDY

20 March 2006

Interview with COL Ferdinand Irizarry, G-3, USACAPOC

21 March 2006

Interview with LTC James Wolff, Commander, 96th Civil Affairs Battalion

22 March 2006

Thesis Concept Brief with Peter Ganz / Joel Chaney, Refugees International

23 March 2006

Thesis Concept Brief with Rebecca Linder, Steven Siegel, CSIS

Thesis Concept Brief with MAJ Angela Burth, LTC Dickens Office Chief Information Joint Staff – Pentagon

24 March 2006

Thesis Concept Brief with Dave Davis, George Mason University, POP

Thesis Concept Brief with George Devendorf, Mercy Corps

Thesis Concept Brief with Jim Bishop, Interaction

6 April 2006

Meeting with Sue Higgins

Meeting with Freddy Polk

12 April 06

Thesis Concept Discussion with Josh O'Sullivan – NPS Student

27 April 2006

Thesis Concept Brief with Miguel Tirado – CSUMB (California State University Monterey Bay)

18 April 19, 2006

Meeting with Chris Gunderson – W2COG

16 May 2006

Thesis Concept Brief with Dr Erik Jansen, NPS School of Business and Public Policy

31 May 2006

Phone Conversation with Tony Burgess

2 June 2006

Thesis Concept Brief with Sue Hocesvar / Nancy Roberts, NPS School of Management

10 – 14 July TDY

10 July 2006

Thesis Concept Brief with Kevin “Spanky” Kirsch, Integrated ICT Support, OSD OASD/NII/IIS

Thesis Concept Brief with Bailey Hand, Navy CPT Smallwood, USAF LTC Hermsmeyer, Mike McNerny OSD, SOLIC

Thesis Concept Brief with Tom Baltazar, Civil-Military Liaison, USAID

11 July 2006

Thesis Concept Brief with Dennis King (Formerly worked as part of ReliefWeb), Paul Bartel and Lowry Taylor (Head Coordinator) State Department – Humanitarian Information Unit

Thesis Concept Brief with USAF MAJ Tammi Peacock, Erin Masly, NDU Curriculum Developer - National Defense University, Fort Meyer, Virginia

12 July 2006

Thesis Concept Brief with LTC James Brown (CA), USMC COL Dave Harlan - Peace Keeping Stability Operations Institute, Carlisle Barracks, PA

14 July 2006

Thesis Concept Brief with Suha Ulgen and Patrick Gordon Technical Coordinator, UN Field Information Support Unit, Advocacy and Information Management Branch, Office of the Coordination of Humanitarian Affairs

Thesis Concept Brief with Sebastian Naidoo, Managing Editor, ReliefWeb

Thesis Concept Brief with Tony Burgess - Co-Creator of Company Command.com

1 August 2006

Thesis Concept Brief with Mr. (BG Retired) Robert Gard – Former President of the MIIS, Monterey Institute of International Studies

17 August 2006

Thesis Concept Brief with Dr. Michael Laurence – Dean, Graduate School of International Policy Studies and Professor

20 August 2006

Meeting with Sue Higgins regarding the use of NPS Interns and Web Server

24 August 2006

Thesis Concept Brief with George Lober, NPS Defense Analysis Department

5 September 2006

Thesis Concept Brief with Matt Vaccaro and Nick Tomb, NPS Center for Stabilization and Reconstruction Studies

13 October 2006

Meeting with CAPT (RET) Larry Seaquist (USN), member of the Highlands Group, candidate for Washington State Representative in the 26th District, and the founder and CEO of The Strategy Group.

13 November 2006-11-16

Meeting with Sue Higgins and Ann Gallenson (via teleconference) about the initial design of crisisinfonetWORK.org and preliminary concept discussions concerning layout and utilization of Drupal.

14-15 November 2006-11-16

Participation in the Sandia National Laboratories/Cebrowski Institute/Special Operations Command Pacific sponsored Collaboration Fest Conference. Representatives from NGOs, Military, Government and business leaders attended. Notable attendees include: LTC Krawchuk (SOCPAC SOJ39 IO), Jeff Won (JKDOC/JWFC, USPACOM Support Element, SCHOLAR), Armando De Rossi (3P Foundation).

20 November 2006

Website design begins. Initial website stood up at: www.crisisinfonetWORK.org.

APPENDIX D: HUMANITARIAN WEB SITES ¹⁵⁴

Adventist Development and Relief Agency International <http://www.adra.org>
Afghanistan Information Management Service (AIMS) <http://www.aims.org.af>
African Center for the Constructive Resolution of Disputes (ACCORD) <http://www.accord.org.za>
AidMatrix <http://www.aidmatrix.org>
Aid Workers Network: Practical advice for aid workers by aid workers <http://www.aidworkers.net/>
Aid World <http://www.aidworld.org>
Alertnet. The Internet service for the relief community and anyone interested in the world of aid agencies <http://www.alertnet.org>
American Council for Voluntary International Action (InterAction) <http://www.interaction.org/>
American Red Cross <http://www.redcross.org/>
American Jewish World Service <http://www.ajws.org/>
Amnesty International <http://www.amnesty.org/>
Army Corps of Engineers (USACE) <http://www.usace.army.mil>
Baptist World Alliance <http://www.bwanet.org>
CACI International Inc. <http://www.caci.com/>
Camber Corporation <http://www.camber.com/about.asp?l=b>
Canadian Center for Emergency Preparedness <http://www.ccep.ca>
CARE <http://www.care.org/>
Caribbean Disaster Emergency Response Agency, Managing Disasters with Preparedness <http://www.cdera.org>
Catholic Relief Services <http://www.catholicrelief.org/>
Center for Humanitarian Cooperation (CHC) <http://www.cooperationcenter.org>
Center for International Development and Conflict Management (University of MD) <http://www.cidcm.umd.edu>
Center for Research on the Epidemiology of Disasters (CRED/OFDA) <http://www.cred.be>
Center for Stabilization and Reconstruction Studies (CSRS), Naval Post-Graduate School <http://www.nps.edu/csrs>
Center for Strategic and International Studies (CSIS) <http://www.csis.org/>
Center for Technology and National Security Policy (CTNSP). Communications, Information Systems and Networks in Support of Stabilization and Reconstruction Operations Workshops http://www.ndu.edu/ctnsp/S&R_IT_workshop.htm

¹⁵⁴ This list of websites was produced by CSIS for the Department of Defense. It was instrumental in narrowing the list of humanitarian related websites. Department of Defense. "A Primer on ICT Support for Civil-Military Coordination in Disaster Relief and Stabilization & Reconstruction Operations." (Draft).

Center of Excellence in Disaster Management and Humanitarian Assistance <http://coe-dmha.org>

Centers for Disease Control and Prevention (CDC) <http://www.cdc.gov/>

Church World Service <http://www.churchworldservice.org/index.html>

CISCO Systems, Inc. <http://www.cisco.com/>

Civil Military and Coordination Section (CMCS) <http://ochaonline.un.org/mcdu>

Civil Protection within the European Countries <http://europa.eu.int/comm/environment/civil/>

Civilian and Military Cooperation in Complex Humanitarian Operations, by Sarah E. Archer
http://www.army.mil/professionalwriting/volumes/volume1/june_2003/6_03_2.html

Collaborative Learning Projects and the Collaborative for Development Action, Inc. A small consulting firm specializing in issues surrounding humanitarian assistance <http://www.cdainc.com>

Cranfield Disaster Management Center <http://www.rmcs.cranfield.ac.uk/dmc/ddmsa/dmc>

Crisis Management Initiative http://www.cmi.fi/?content=itcm_project

International Crisis Information Network <http://crisisinfonetwork.org>

Current Peacekeeping/Building Missions http://www.un.org/Depts/dpko/dpko/cu_mission/body.htm

Defense Information Systems Agency (DISA) <http://www.disa.mil>

DFI International <http://www.dfi-intl.com/>

Direct Relief International <http://www.directrelief.org/>

Disaster Management Center (DMC), University of Wisconsin/Madison <http://dmc.engr.wisc.edu/about/>

Disaster Management Institute of South Africa (DMISA) <http://www.disaster.co.za/index.php>

DisasterRelief <http://www.disasterrelief.org/>

Disaster Research Center (DRC) <http://www.udel.edu/DRC/>

Disaster Relief And Strategic Telecommunications Infrastructure Company (Drastic)
<http://www.drasticom.org>

E-Center provides distance learning training material for the Asia Region, the e-library provides material mainly from UNHCR. <http://www.the-ecentre.net/>

Emergency Preparedness Information Exchange (EPIX) <http://epix.hazard.net>

Ericsson Response Program <http://www.ericsson.com>

European Community Humanitarian Office (ECHO) http://europa.eu.int/comm/echo/en/index_en.htm

Federal Emergency Management Agency (FEMA) <http://www.fema.gov>

International Alert. Focuses on generating greater international and regional political awareness of the deep-seated causes of modern violent conflict. <http://www.international-alert.org/>

Food and Agriculture Organization of the United States (FAO) <http://www.fao.org>

Foundation Hironnelle <http://www.hironnelle.org>

Fritz Institute <http://www.fritzinstitute.org>

FSI International <http://www.fsi-intl.com/>

Geographic Information Support Team (GIST) <http://www.gist.itos.uga.edu>

Geneva Center for Security Policy (GCSP) <http://www.gcsp.ch/e/index.htm>

Geneva Center for the Democratic Control of Armed Forces (DCAF) <http://www.dcaf.ch>

Global Hand <http://www.globalhand.org>
Global Impact <http://www.charity.org/>
Global Internally Displaced Persons (IDP) Project <http://www.idpproject.org>
Global Map Aid <http://www.globalmapaid.rdvp.org>
GlobalsSecurity.org <http://www.globalsecurity.org/>
Global Relief Technologies <http://www.globalrelieftech.com/>
Global Strategies Group <http://www.gsghq.com/>
Grassroots International <http://www.grassrootsonline.org/>
Groove Networks virtual office <http://www.groove.net/home/index.cfm>
Gurtong Peace Project <http://www.gurtong.org>
Habitat for Humanity International <http://www.habitat.org/>
Harmonie Web <http://www.harmonieweb.org>
Headquarters, Department of the Army <http://www.hqda.army.mil/hqda/main/home.asp>
HumaniNet <http://www.humaninet.org>
Humanitarian Information Centers and Partners <http://www.humanitarianinfo.org>
Humanitarian Information Unit (HIU) <http://hiu.state.gov/>
Humanitarian Early Warning Service www.hewsweb.org
Humanitarian Policy and Conflict Research <http://www.hpcr.org>
Human Rights Watch <http://www.hrw.org/>
I-LINX <http://www.i-linx.net>
Information Management for Humanitarian Operations <http://www.currion.net/imho.htm>
Information Technology and Crisis Management (ITCM) <http://www.itcm.org/>
InfoShare <http://www.info-share.org>
Institute for Defense Analysis (IDA) <http://www.ida.org/>
Integrated Regional Information Network <http://www.irinnews.org>
Interagency Transformation, Education and After Action Review (ITEA) <http://www.ndu.edu/itea>
International Aid <http://www.internationalaid.org>
International Committee of the Red Cross and Red Crescent (ICRC) <http://www.icrc.org>
International Council of Voluntary Agencies (ICVA) <http://www.icva.ch/>
International Crisis Group <http://www.crisisgroup.org/home/index.cfm>
International Humanitarian Law and Research Initiative. Monitoring IHL in Iraq.
<http://www.ihlresearch.org/iraq/>
International Institute for Democracy and Electoral Assistance <http://www.idea.int/index.cfm>
International Institute for Disaster Risk Management (APDMC) <http://www.idrmhome.org>
International Justice Mission <http://www.ijm.org>
International Organization for Migration (IOM) <http://www.iom.int>
International Orthodox Christian Charities (IOCC) <http://www.iocc.org>

International Search and Rescue Advisory Group (INSARAG)

<http://www.reliefweb.int/insarag/>

International Rescue Committee **<http://www.theIRC.org>**

International Relief and Development, inc. **<http://www.ird-dc.org/>**

International Telecommunication Union (ITU) **<http://www.itu.int>**

Inter-Agency Standing Committee (IASC) **<http://www.humanitarianinfo.org/iasc/>**

Inveneo **<http://www.inveneo.org/>**

Islamic Relief **<http://www.islamic-relief.com/>**

Journal of Humanitarian Assistance (Bradford University) **<http://www.jha.ac/>**

<http://www.humanitarianinfo.org/iasc/publications.asp>

Luise Druke **<http://www.luisedruke.com>**

Lutheran Relief Services **<http://www.lwr.org/>**

Map Action **<http://www.mapaction.org>**

MapRelief **<http://www.maprelief.org>**

Martus Technology Non-Profit **<http://www.martus.org>**

Medecins Sans Frontieres **<http://www.doctorswithoutborders.org/>**

Mennonite Central Committee **<http://www.mcc.org/>**

Mercy Corps International (MCI) **<http://www.mercycorps.org>**

MorganFranklin Corporation **<http://www.morgan-franklin.com/>**

National Defense University (NDU) **<http://www.ndu.edu/>**

National Defense University Institute for National Strategic Studies (NDU INSS)

<http://www.ndu.edu/inss/insshp.html>

National Democratic Institute for International Affairs (NDI) **<http://www.ndi.org>**

National Geospatial Intelligence Agency (NGA) **<http://www.nga.mil>**

National Strategic Gaming Center **<http://www.ndu.edu/inss/nsgc>**

NATO/Military Acronyms **<http://www.nato.int/ifor/general/acronyms.htm>**

Naval Air Systems Command (NAVAIR) **<http://www.navair.navy.mil/>**

Navy Construction Forces (Seabees) **<http://www.seabee.navy.mil>**

Naval Postgraduate School, Center for Stabilization and Reconstruction Studies

<http://www.nps.edu/CSRS/>

Naval War College **<http://www.nwc.navy.mil/defaultf.htm>**

NetHope: Wiring the global village **<http://www.nethope.org/>**

Network Startup Research Center (NSRC) **<http://www.nsrc.org/>**

Nonprofit Technology Enterprise Network **<http://www.nten.org>**

Object Management Group (OMG) **<http://www.omg.org/>**

Office of the Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict (SOLIC) **<http://www.defenselink.mil/policy/solic>**

Office of the Assistant Secretary of Defense for Networks and Information Integration (ASD NII) **<http://www.defenselink.mil/nii>**

Office for the Coordination of Humanitarian Affairs. Best practices in humanitarian information management and exchange. **<http://www.reliefweb.int/symposium/>**

OneWorld.net **<http://www.OneWorld.net>**

Organization Economic Co-operation and Development (OECD) **<http://www.oecd.org/>**

Overseas Development Institute. Think-tank on international development and humanitarian issues **<http://www.odi.org.uk/about.html>**

OXFAM International **<http://www.oxfam.org/>**

Pacific Disaster Center **<http://www.pdc.org>**

Pan American Health Organization (PAHO) **<http://www.paho.org>**

Partnership for Peace Information Management System **<http://www.pims.org>**

Partners in Technology **<http://www.pactec.org>**

Peacekeeping and Stability Operations Institute (PKSOI), US Army War College **<http://www.carlisle.army.mil/usacsl/divisions/pksoi/default.htm>**

Prevention Consortium. A network to share knowledge and to connect and leverage resources to reduce disaster risk **<http://www.proventionconsortium.org>**

Proactive Communications Inc. **<http://204.200.201.151/>**

Refugees International **<http://www.refugeesinternational.org/>**

Relief Guide **<http://www.reliefguide.org>**

Reliefweb **<http://www.reliefweb.int>**

Report of the International Commission on Intervention and State Sovereignty, "The

RESPOND Humanitarian Geospatial Solutions <http://www.respond-int.org>

Responsibility to Protect" <http://www.iciss.ca/report-en.asp>

SAIC <http://www.saic.com/>

Sandia National Laboratories <http://www.sandia.gov/>

Save the Children <http://www.savethechildren.org/>

Search for Common Ground <http://www.sfcg.org/>

Standardized Monitoring and Assessment of Relief and Transition (SMART)

<http://www.smartindicators.org>

Status of Forces Agreement (SOFA), History

<http://www.globalsecurity.org/military/facility/sofa.htm>

Stockholm International Peace Research Institute (SIPRI) studies Conflict and Peace

Enforcement and the Conflict Prevention <http://www.sipri.org>

Swiss Peace <http://www.swisspeace.org>

Swiss Seismological Service, web links to other pages, list of most recent quakes

<http://www.seismo.ethz.ch>

Tele Communication Systems <http://www1.telecomsys.com/index.html>

Telecoms Sans Frontieres <http://www.tsfi.org/>

Thought Link <http://www.thoughtlink.com/>

Training Transformation <http://www.t2net.org/>

UK Post Conflict Reconstruction Unit <http://www.postconflict.gov.uk/>

UK Department for International Development <http://www.dfid.gov.uk/>

UN System, links to all entities <http://www.unsystem.org>

United Nations Non-Governmental Liaison Service (NGLS) Roundup is produced for

NGOs and others interested in institutions, policies and activities of the UN System

<http://www.un-ngls.org/>

UN Disaster Management Training Program, Training inventory UN Training Modules; 18 Modules

<http://www.undmtp.org>

UN Disaster Assessment and Coordination (UNDAC) <http://www.reliefweb.int/undac/>

Understanding the priorities for Civil-Military Co-operation (July 2001), The Journal of Humanitarian Assistance **<http://www.jha.ac/articles/a068.htm>**

UNICEF Humanitarian Principles Training, On-line session

<http://coe-dmha.org/Unicef/UNICEF2FS.htm>

United Nations Children Fund (UNICEF) **<http://www.unicef.org>**

United Nations Development Program (UNDP) **<http://www.undp.org.in/>**

United Nations High Commissioner for Refugees (UNHCR)**<http://www.unhcr.ch>**

United Nations Home Page **<http://www.un.org>**

United Nations Joint Logistics Center (UNJLC) **<http://www.unjlc.org>**

UN Office for the Coordination of Humanitarian Affairs (OCHA) **<http://ochaonline.un.org>**

UNOSAT (UN Satellite Imagery Organization) **<http://www.unosat.org>**

US Agency for International Development **<http://www.usaid.gov>**

US Air Force **www.airforce.com/**

US Army Peacekeeping & Stability Operations Institute (PKSOI)

<http://www.carlisle.army.mil/usacsl/divisions/pksoi/Welcome/welcomebody.htm>

US Army Civil Affairs and PsyOps Command (CAPOC) **<http://www.usacapoc.army.mil>**

US Army War College **<http://www.carlisle.army.mil/>**

US Institute of Peace **www.usip.org**

US Department of State **<http://www.state.gov>**

US Department of State Office of the Coordinator for Reconstruction and Stabilization

<http://www.state.gov/s/crs/>

US Geological Survey; Earthquakes, Hurricanes, etc. **<http://www.usgs.gov>**

US Marine Corps home page **www.usmc.mil/**

US Navy **<http://www.navy.mil/>**

US Office of Foreign Disaster Assistance (OFDA) **http://www.usaid.gov/hum_response/ofda**

US Joint Forces Command (JFCOM) **<http://www.jfcom.mil>**

US Northern Command (NORTHCOM) **<http://www.northcom.mil>**

US Southern Command (SOUTHCOM) **<http://www.southcom.mil>**

US European Command (EUCOM) <http://www.eucom.mil>

US Central Command (CENTCOM) <http://www.centcom.mil>

US Pacific Command (PACOM) <http://www.pacom.mil>

US Special Operations Command (USSOCOM) <http://www.socom.mil>

Virtual Operations On-Site Coordination Center <http://ocha.unog.ch/virtualosocc/>

War-Torn Societies Project (WSP) <http://www.wsp-international.org>

World Food Program (WFP) <http://www.wfp.org>

World Health Organization (WHO) <http://www.who.int>

World Relief <http://www.wr.org/>

World Vision <http://www.worldvision.org>

BIBLIOGRAPHY

- Abiew, Francis Kofi. "From Civil Strife to Civic Society: NGO-Military Cooperation in Peace Operations," Faculty Occasional Paper, Carleton University, 2003, [article on line]; available from: http://www.carleton.ca/csds/occasional_papers/NPSIA-39.pdf; Internet; accessed 10 February 2006
- Aidworkers. Web site. Available from: <http://www.aidworkers.net/>; Internet; accessed 29 April 2006.
- AirSevr. Web site. Available from: <http://www.airserv.org/>; Internet; accessed 28 May 2006.
- Answers.com, [Web site]; available from: <http://www.answers.com/topic/anderson-greg>; Internet; accessed 21 November 2006.
- Arquilla, John and Ronfeldt, David. *Networks and Netwars: the Future of Terror, Crime, and Militancy* Rand, Santa Monica 2001.
- Axelrod, Robert. *The Evolution of Cooperation*. New Jersey: Princeton University Press, 1997.
- Belasco, Amy. *The Cost of Iraq, Afghanistan, and Other Global War on Terrorism Operations Since 9/11*. CRS Report for Congress (2006).
- Bellamy, Alex J. and Williams, Paul D. "Who's Keeping the Peace?" *International Security* Vol. 29, No. 4, Spring 2005. Journal online. Available from: http://muse.jhu.edu/journals/international_security/v029/29.4bellamy.html Internet; accessed 14 May 2006
- Bonabeau , Eric and Laszlo, Albert. "Scale-Free Networks" *Scientific American* (May 2003).
- Bradford Info "What Are Communities of Interest?." BradfordInfo.com. Web site. Available from: <http://www.bradfordinfo.com/themes/CoI/WhatAreCoIs.cfm>; Internet; accessed 7 November 2006.
- Carey, Henry F. and Richmond, Oliver P. *Mitigating Conflict: The Role of NGOs*. London: Frank Cass Publishers, 2003.
- Castells, Manuel *The Network Society: A Cross-cultural Perspective*. Cheltenham UK, Edward Elgar Publishing Limited, 2004.
- Castells, Manuel *The Rise of the Network Society*. Malden, Massachusetts: Blackwell Publishers, 1996.

- CIA World Factbook. Web site. Available from:
<https://www.cia.gov/cia/publications/factbook/geos/sz.html>; Internet; accessed 29 August 2006.
- Communities of Interest in the Net-Centric DoD Frequently Asked Questions (FAQ)
Available from: http://colab.cim3.net/file/work/Expedition_Workshop/2005-12-6_Advancing_Information_Sharing_And_Data_Architecture/DoD/COI_FAQ.doc
; Internet; accessed 25 October 2006.
- Company Command Homepage. Web site. Available from:
<http://companycommand.army.mil>; Internet; accessed 12 November 2005.
- Cymfony, *Making the Case for a Social Media Strategy* Cymfony.com White paper online. July 2006. Available from:
<http://www.cymfony.com/files/pdf/making%20the%20case.pdf>; Internet; accessed 10 November 2006.
- Daft, Richard. *Essentials of Organization Theory and Design*. Ohio: South Western College Publishing 2003.
- Denning, Dorothy. "Re: Creating Networks." E-mail to author, 21 October 2006.
- Department of Defense. "A Primer on ICT Support for Civil-Military Coordination in Disaster Relief and Stabilization & Reconstruction Operations." (Draft).
- Department of Defense. "Communities of Interest in the Net-Centric DoD Frequently Asked Questions (FAQ)," information paper, 19 May 2004. Article online.
Available from: http://colab.cim3.net/file/work/Expedition_Workshop/2005-12--6_Advancing_Information_Sharing_And_Data_Architecture/DoD/COI_FAQ.doc
; Internet; accessed: 25 October 2006.
- Department of Defense Directive 3000.05 Military Support for Stability, Security, Transition, and Reconstruction (SSTR) Operations November 28, 2005.
- Department of Defense Joint Publication 3-08, *Interagency, Intergovernmental Organization, and Nongovernmental Organization Coordination During Joint Operations* Vol. I March 2006.
- Development Gateway. Web site. Available from:
<http://www.developmentgateway.org/>; Internet; accessed 12 May 2006.
- Dictionary.com. *Dictionary.com Unabridged (v 1.0.1)*, Based on the Random House Unabridged Dictionary, © Random House, Inc. 2006. Dictionary online.
Available from: <http://dictionary.reference.com/browse/network>; Internet; accessed 26 October 2006.

- Dictionary.com. *Webster's New Millennium™ Dictionary of English, Preview Edition (v 0.9.6)*, Lexico Publishing Group, LLC. Dictionary online. Available from: <http://dictionary.reference.com/browse/google>; Internet; accessed 9 November 2006.
- Dixon, Nancy M. et al. *Company Command: Unleashing the Power of the Army Profession*. West Point, NY. Center for the Advancement of Leader Development and Organizational Learning.
- Drupal. Web site. Available from: <http://drupal.org/about>; Internet; accessed 20 September 2006.
- Dziedzic, Michael J., Michael K. Seidl, and the United States Institute of Peace. "Provincial Reconstruction Teams and Military Relations with International and Non-governmental Organizations in Afghanistan," Special Report; 147; Washington, D.C: United States Institute of Peace, 2005. Article online. Available from: <http://www.usip.org/pubs/specialreports/sr147.html>; Internet; accessed 10 February 2006.
- Florida Center for Instructional Technology College of Education, University of South Florida. Web site. Available from: <http://fcit.usf.edu/network/chap5/chap5.htm>; Internet; accessed 21 August 2006.
- Fradsen, Grey. *A Guide to NGOs*. San Antonio: Uniformed Services University of the Health Science, 2002.
- Friedman, Thomas. *The world is flat: A brief history of the twenty-first century*. 2nd ed. New York: Farrar, Straus and Giroux, 2005.
- Garnett, G. P. and Ghani, A. C. "Measuring Sexual Partner Networks For Transmission of Sexually Transmitted Diseases." *Journal of the Royal Statistical Society*, 1998. Journal online. Available from: <http://www.jstor.org/view/09641998/di993096/99p07514/0>; Internet; accessed 18 November 2006.
- Giles, Jim. "Internet Encyclopedias Go Head to Head," *Nature* 14 December 2005. Article online. Available from: <http://www.nature.com/news/2005/051212/full/438900a.html>; Internet; accessed 18 August 2006.
- Greencard, Brian. "There's No Such Thing as Too Much Word Play", *American Way* (2006).
- Guttieri, Karen. "Humanitarian Space in Insecure Environments: A Shifting Paradigm" *Strategic Insights*, Volume IV, Issue 11 (November 2005).

- Halley, H. H. Halley's Bible Handbook Zondervan Publishing House Grand Rapids, Michigan 1965.
- Hawke, Chris. "School Security Beefed Up" *The Miami Herald*, 14 August 2006. Available from: <http://nl.newsbank.com/nl-search/we/Archives>; Internet; accessed 20 August 2006.
- Hayes, Richard and Landon, James *National Approaches to Civil-Military Coordination in Peace and Humanitarian Assistance Operations* Evidence Based Research, Inc. Article online. Available from: http://www.dodccrp.org/research/bosnia/landon_hayes.htm; Internet; accessed 12 March 2006.
- Humaninet. Web site. Available from: <http://www.humaninet.org/>; Internet; accessed 2 February 2006.
- Institute for Conflict Analysis and Resolution, George Mason University. Web site. Available from: <http://icar.gmu.edu/>; Internet; accessed 10 March 2006.
- InterAction. Web site. Available from: <http://www.interaction.org/>; Internet; accessed 3 May 2006.
- International Organization for Migration. Web site. Available from: <http://www.iom.int>; Internet; accessed 10 June 2006.
- International Rescue Committee. Web site. Available from: <http://www.theirc.org/>; Internet; accessed 10 June 2006.
- Jalovcic, Djenana. "Weak States and Sudden Disasters and Conflicts: The Challenge for Military-NGO Relations," Montreal, Quebec: Institute for Research on Public Policy, 2005. Article online. Available from: <http://www.irpp.org/events/archive/jun05NGO/jalovcic.pdf>; Internet; accessed 10 February 2006.
- Krebs, Valdis. "The Social Life of Books" Orgnet.com, 1999. Web site. Available from: <http://www.orgnet.com/booknet.html>; Internet; accessed 11 November 2006.
- Laipson, Ellen B. "Information-Sharing in Conflict Zones: Can the USG and NGOs Do More?" *Journal of the American Intelligence Professional* 2005. Article online. Available from: https://www.cia.gov/csi/studies/vol49no4/USG_NGOs_5.htm; Internet; accessed 15 August 2006.
- LinkedIn Corporation LinkedIn.com. Web site. Available from: http://www.linkedin.com/home?trk=tab_h; Internet; accessed 5 November 2006.

- Justin Logan and Christopher Preble, *Are Failed States a Threat to America? The Bush administration's nation-building efforts are a big mistake*, July 2006. Article online. Available from: <http://www.reason.com/0607/fe.jl.are.shtml>; Internet; accessed 15 August 2006.
- Marketing Terms. "Blog Weblog." 2006. Web site. Available from: www.marketingterms.com/dictionary/blog ; Internet; accessed 17 September 2006.
- McClellan, Joe. SCHR Position Paper on Humanitarian-Military Relations in the Provision of Humanitarian Assistance (18 October 2004).
- Mead, Walter Russell *Special Providence: American Foreign Policy and How it Changed the World*. New York: Routledge, 2002.
- Médecins Sans Frontières/Doctors Without Borders. Web site. Available from: <http://www.doctorswithoutborders.org/home.cfm>; Internet; accessed 1 June 2006.
- MySpace. Web site. Available from: <http://myspace.com/>; Internet; accessed 25 April 2006.
- Nardi, Bonnie et al. "I'm Blogging This: A Closer Look at Why People Blog," University of California, Irvine. Article online, 2004. Available from: <http://www.ics.uci.edu/~jpd/classes/ics234cw04/nardi.pdf>; Internet; accessed 15 September 2006.
- Oliker, Olga et al., *Aid During Conflict: Interaction Between Military and Civilian Assistance Providers in Afghanistan, September 2001–June 2002*. Santa Monica, RAND, 2004.
- O'Reilly, Tim, 30 September 2005, *What is Web 2.0, Design Patterns and Business Models for the Next Generation of Software*. <http://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html> (accessed on April 14, 2006).
- Presidential Directive, The White House. National Security Presidential Directive/NSPD-44, *Management of Interagency Efforts Concerning Reconstruction and Stabilization*. Washington D.C.: Government Printing Office, 7 December 2005.
- Proverbia.net. Web site. Available from: <http://en.proverbia.net/citastema.asp?tematica=258&page=2>; Internet; accessed 21 November 2006.
- Peace Operations Policy Program George Mason University. Web site. Available from: <http://popp.gmu.edu/>; Internet; accessed 10 March 2006.

- Pew Internet and American Life Project. "Content Creation Online," 2004. Report online. Available from: http://www.pewinternet.org/pdfs/PIP_Content_Creation_Report.pdf; Internet; accessed 10 November 2006.
- Ramarajan, Lakshmi et al. *Successful Conflict Resolution Between Peacekeepers and NGOs: The Role of Training and Preparation in International Peacekeeping in Bosnia*, January 2002. Article online. Available from: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=305206; Internet; accessed 25 September 2006
- Reliefweb. Web site. Available from: <http://www.reliefweb.int/rw/dbc.nsf/doc100?OpenForm>; Internet; accessed 10 January 2006.
- Sageman, Marc. *Global Salafi Jihad: Empirical Assessment & Social Network Analysis*, Power Point brief. April 2005.
- Sageman, Marc. *Understanding Terror Networks*. Philadelphia: University of Pennsylvania Press, 2004.
- Scott, John *Social Network Analysis: a Handbook*. Newbury Park, Sage Publications 991.
- Sifry, David. "State of the Blogoshere, Part 2: Beyond Search," Technorati. 13 February 2006. Weblog online. Available from: <http://www.sifry.com/alerts/archives/000420.html>; Internet; accessed 8 May 2006.
- SIPRI (Stockholm International Peace Research Institute) Yearbook Armaments, Disarmament and International Security. New York: Oxford University Press, 2006.
- Tanguy, Joelle, *Intervention, Protection and Humanitarian Assistance at a Crossroads*, Paper delivered by MSF at the World Affairs Council, San Francisco, 28 March 2000.
- Tomb, Nicholas "Re: Workshop Costs." E-mail to author, 24 October 2006.
- United Nations Peace Keeping Operations. UN.org. Web site. Available from: <http://www.un.org/Depts/dpko/dpko/ops.htm>; Internet; accessed 8 September 2006.

US Agency for International Development's Web page. Web site. Available from: http://www.usaid.gov/our_work/cross-cutting_programs/private_voluntary_cooperation/dentonguidelines.html; Internet; accessed 9 November 2006.

Rafa Vilasanjuan *The Increasing Presence of Military Forces and the Independence of NGOs: The NGO Perspective*. Article online. Available from: <http://www.icva.ch/cgi-bin/browse.pl?doc=doc00000996>; Internet; accessed 6 August 2006.

Vroom, Victor. *Expectancy Theory; Motivation and Management*, Value Based Management 2006. Web site. Available from: http://www.valuebasedmanagement.net/methods_vroom_expectancy_theory.html; Internet; accessed 15 May 2006.

Weiss, Thomas. *Military Civil interactions: Intervening in Humanitarian crises*. Lanham: Rowman & Littlefield Publishers, 1999.

Wells, Lin "Re: Worth Sharing". Email to Sue Higgins (forwarded to author), 25 January 2006.

Wikipedia contributors, "Wiki," *Wikipedia, The Free Encyclopedia*. Wiki online. Available from: <http://en.wikipedia.org/w/index.php?title=Wiki&oldid=90534233>; Internet; accessed 28 November 2006.

Wikipedia contributors, "Community of interest," *Wikipedia, The Free Encyclopedia*. Wiki online. Available from: http://en.wikipedia.org/w/index.php?title=Community_of_interest&oldid=67422403; Internet; accessed 6 November 2006.

Wikipedia contributors, "Dot-com bubble," *Wikipedia, The Free Encyclopedia*. Wiki online. Available from: http://en.wikipedia.org/w/index.php?title=Dot-com_bubble&oldid=86622230; Internet; accessed 9 November 2006.

Wikipedia contributors, "Global internet usage," *Wikipedia, The Free Encyclopedia*. Wiki online. Available from: http://en.wikipedia.org/w/index.php?title=Global_internet_usage&oldid=83143401; Internet; accessed 9 November 2006.

Wikipedia contributors, "LinkedIn," *Wikipedia, The Free Encyclopedia*. Wiki online. Available from: <http://en.wikipedia.org/w/index.php?title=LinkedIn&oldid=84760116>; Internet; accessed 7 November 2006.

Wikipedia contributors, "Main Page," *Wikipedia, The Free Encyclopedia.*, Wiki online. Available from: http://en.wikipedia.org/w/index.php?title=Main_Page&oldid=55170709; Internet; accessed 1 June 2006.

Wikipedia contributors, "Ordinal Scale," *Wikipedia The Free Encyclopedia.* Wiki online. Available from: http://en.wikipedia.org/wiki/Ordinal_scale; Internet; accessed 24 August 2006.

Wikipedia contributors, "Pareto Optimality," *Wikipedia, The Free Encyclopedia.* Wiki online. Available from: http://en.wikipedia.org/wiki/Pareto_optimality; Internet; accessed 24 August 2006

Wikipedia contributors, "World Wide Web," *Wikipedia, The Free Encyclopedia.* Wiki online. Available from: http://en.wikipedia.org/w/index.php?title=World_Wide_Web&oldid=87507535; Internet; accessed November 18, 2006.

Wolfson, Steven and Wright, Neill, *A UNHCR Handbook for the Military on Humanitarian Operations* (January 1995)

World Factbook, *Switzerland*, 14 November 2006. Web site. Available from: <https://www.cia.gov/cia/publications/factbook/geos/sz.html>; Internet; accessed 16 November 2006.

INITIAL DISTRIBUTION LIST

1. Defense Technical Information Center
Ft. Belvoir, Virginia
2. Dudley Knox Library
Naval Postgraduate School
Monterey, California
3. Dr John Arquilla
Naval Postgraduate School
Monterey, California
4. George Lober
Naval Postgraduate School
Monterey, California
5. Jennifer Duncan
Naval Postgraduate School
Monterey, California
6. Sue Higgins
Naval Postgraduate School
Monterey, California
7. Karen Gutierri
Naval Postgraduate School
Monterey, California
8. Colonel Brian Greenshields
Naval Postgraduate School
Monterey, California