NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

LEVERAGING CITIZENS AND CULTIVATING VIGILANCE FOR FORCE MULTIPLICATION IN THE MARITIME DOMAIN

by

Michael Andre' Billeaudeaux

September 2007

Thesis Advisor:	Richard Bergin
Second Reader:	Christopher Bellavita

Approved for public release; distribution is unlimited

THIS PAGE INTENTIONALLY LEFT BLANK

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188

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 September 2007	3. REPORT TYPE AND DATES COVERED Master's Thesis

4. TITLE AND SUBTITLE Leveraging Citizens and Cultivating Vigilance for Force Multiplication in the Maritime Domain	5. FUNDING NUMBERS
6. AUTHOR Michael Andre Billeaudeaux	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING /MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A	10. SPONSORING/MONITORING AGENCY REPORT NUMBER

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)

This thesis examines a Coast Guard-led networked community (Citizen's Action Network – CAN) by exploring the network's potential to augment the Coast Guard in managing its prodigious maritime domain risks. Through an expansive literature review, a survey and a set of semi-structured interviews, a proposed set of community-based structural components were identified and tested for strength and significant relationships using ANOVA, Regression and Student's T statistical testing methods. Findings suggest that component parts of CAN fit into a business-oriented networked management model called a Community of Practice (COP), with vigilance emerging as a sustainable, predictable and highly desirable post-9/11 networked community behavior. CAN's demographics were also examined to determine trends, such as above-average military veteran membership, which may support future targeted volunteer recruiting. Finally, various Coast Guard-initiated CAN communication methods were tested for significant impact; volunteers receiving phone calls correlated to higher levels of trust in the Coast Guard, while those receiving written communications maintained a heightened sense of access to the Coast Guard. These findings underscore the yet-untapped potential to groom grassroots vigilance, build trust in government and create a culture of prevention by sharing national challenges — ultimately putting the "home" back in homeland security.

14. SUBJECT TERMS Type Keywords Here Citizen, Vigilance, Network, Community, Collaboration, Corroboration, Security, Terror, Virtual, War on Terror, Volunteer, Trust, Social Identity, Social Networking, Community of Practice, Social Capital, Affect, Community Engagement, Mutual Understanding, Coast Guard, Maritime Domain Awareness, Ports, Waterways, Royal Canadian Mounted Police	15. NUMBER OF PAGES 155 16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	UU

NSN 7540-01-280-5500 Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std. 239-18

THIS PAGE INTENTIONALLY LEFT BLANK

Approved for public release; distribution is unlimited

LEVERAGING CITIZENS AND CULTIVATING VIGILANCE FOR FORCE MULTIPLICATION IN THE MARITIME DOMAIN

Michael A. Billeaudeaux
Lieutenant Commander, United States Coast Guard
M.A. University of Washington, 2003
B.A. California State University Fullerton, 1993

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF ARTS IN SECURITY STUDIES
(HOMELAND SECURITY AND DEFENSE)

from the

NAVAL POSTGRADUATE SCHOOL
September 2007

Author: Michael Andre' Billeaudeaux

Approved by: Richard Bergin
Thesis Advisor

Christopher Bellavita
Second Reader

Douglas Porch
Chairman, Department of National Security Affairs

THIS PAGE INTENTIONALLY LEFT BLANK

ABSTRACT

This thesis examines a Coast Guard-led networked community (Citizen's Action Network — CAN) by exploring the network's potential to augment the Coast Guard in managing its prodigious maritime domain risks. Through an expansive literature review, a survey and a set of semi-structured interviews, a proposed set of community-based structural components were identified and tested for strength and significant relationships using ANOVA, Regression and Student's T statistical testing methods. Findings suggest that component parts of CAN fit into a business-oriented networked management model called a Community of Practice (COP), with vigilance emerging as a sustainable, predictable and highly desirable post-9/11 networked community behavior. CAN's demographics were also examined to determine trends, such as above-average military veteran membership, which may support future targeted volunteer recruiting. Finally, various Coast Guard-initiated CAN communication methods were tested for significant impact; volunteers receiving phone calls correlated to higher levels of trust in the Coast Guard, while those receiving written communications maintained a heightened sense of access to the Coast Guard. These findings underscore the yet-untapped potential to groom grassroots vigilance, build trust in government and create a culture of prevention by sharing national challenges — ultimately putting the "home" back in homeland security.

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

I. INTRODUCTION 1
- **A. A SIGNIFICANT NATIONAL THREAT 1**
- **B. "IT TAKES A NETWORK TO FIGHT A NETWORK" 2**
- **C. HIERARCHIES ARE STRONG BUT SLOW, NETWORKS ARE SUPPLE AND NIMBLE 4**
- **D. NETWORKS AND GOVERNMENT 6**
- **E. COMMUNITIES OF PRACTICE 9**
- **F. TOOLS TO FIGHT A DIFFERENT KIND OF WAR 10**
- **G. RESEARCH GOALS AND RESEARCH QUESTIONS 12**

II. LITERATURE REVIEW 17
- **A. VOLUNTEERISM IN POST-9/11 AMERICA 17**
- **B. POST-9/11 CITIZEN ROLES IN HOMELAND SECURITY: 21**
  - **1. Community Policing 24**
    - ***a. Intelligence Gathering 24***
- **C. BUILDING A COST-EFFECTIVE CULTURE OF PREVENTION 26**
- **D. BUILDING TRUST 26**
  - **1. Citizen Corps 28**
- **E. UNDERSTANDING SOCIAL NETWORKS FOR DEVELOPING MDA-INSPIRED NETWORKED COMMUNITIES 30**
- **F. THE ROLE OF SOCIAL CAPITAL AND CIVIC ENGAGEMENT IN CULTIVATING NETWORKED COMMUNITIES FOR MDA 32**
- **G. A PRAGMATIC APPROACH – CAPITALIZING ON SOCIAL CAPITAL 34**
- **H. THE ROLE OF COMMUNITIES OF PRACTICE IN SHAPING NETWORKED COMMUNITIES FOR MDA 35**

III. COMMUNITY OF PRACTICE STRUCTURAL COMPONENTS 39

IV. METHOD 43
- **A. SAMPLE SELECTION 43**
- **B. INSTRUMENT 43**
- **C. QUESTIONNAIRE PREPARATION AND DELIVERY 44**
- **D. DATA ANALYSIS 44**

V. ANALYSIS 47
- **A. DEMOGRAPHICS 47**
- **B. COMMUNITY OF PRACTICE, COMMUNITY ENGAGEMENT AND COMMUNITY EFFICACY VARIABLES APPLIED TO CAN 47**
  - **1. Goal Clarity Index 48**
  - **2. Mutual Understanding Index 50**
  - **3. Social Identification 51**
  - **4. Trust/Social Capital 53**
  - **5. Government, Trust and the Coast Guard 55**

6. Access to Parties 55
7. Vigilance 57
8. Community Engagement 59
9. Community Efficacy 61

VI. RESEARCH QUESTION ONE 63
A. DO THE DEMOGRAPHICS OF THE CITIZEN'S ACTION NETWORK, A NETWORKED COMMUNITY, INDICATE TRENDS IN NETWORKED COMMUNITY VOLUNTEERISM?" 63
1. Veterans and Patriotism 64

VII. RESEARCH QUESTION TWO 67
A. DOES PARTICIPATION IN THE CITIZEN'S ACTION NETWORK, A NETWORKED COMMUNITY, INCREASE LEVELS OF SOCIAL CAPITAL AND CIVIC ENGAGEMENT? 67
1. Other Indicators 72
2. Independent Samples T Test 72

VIII. RESEARCH QUESTION THREE 75
A. DO HIGHER LEVELS OF SOCIAL CAPITAL, SOCIAL IDENTITY, GOAL CLARITY, ACCESS TO PARTIES AND EXPERTISE LOCATION LEAD TO INCREASED "INNOVATIVE VIGILANCE" AND INCREASE THE LIKELIHOOD TO REPORT? 75
1. Research Approach 75
2. Regression Analysis 76

IX. RESEARCH QUESTION FOUR 79
A. WHAT EFFECTS, IF ANY, DO COAST GUARD-LED COMMUNICATIONS HAVE ON THE NETWORK? 79
1. Written Communications 79
2. Person-To-Person Communications 80

X. RESEARCH QUESTION FIVE 83
A. DO MEMBERS POPULATING THE HIGHER RANGE OF ACCESS TO PARTIES OR TRUST BASED SOCIAL CAPITAL ALSO POPULATE THE HIGHER RANGE OF THIS STUDY'S OTHER INDEXES? 83
1. Communications as an Extrinsic Motivator 84

XI. DISCUSSION AND IMPLICATIONS 89
1. Findings 89
2. A New HLS Business Model 90
3. Can-Like Community Policing 91

BIBLIOGRAPHY 95

APPENDIX 101

INITIAL DISTRIBUTION LIST 139

LIST OF FIGURES

Figure 1. CAN Scatterplot.....14
Figure 2. The Police/Private Sector Information Sharing-ROI Triangle. 25
Figure 3. Network Types.....32
Figure 4. CoP Indexes Correlate to Vigilance.....75
Figure 5. Influences of CAN Communications on CoP Indices. 80
Figure 6. Receipt of CAN Communications Model.....81
Figure 7. High Access and Trust Means Correlation Model.....84

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF TABLES

Table 1. CoP Relationships. 41
Table 2. Goal Clarity Index. 48
Table 3. Mutual Understanding. 50
Table 4. Social Identity. 52
Table 5. Trust Based Social Capital. 54
Table 6. Access to Parties. 56
Table 7. Vigilance. 57
Table 8. Community Engagement. 60
Table 9. Community Efficacy. 61
Table 10. Citizen's Action Network Volunteer Demographics & Affiliation. 63
Table 11. CAN vs. Baseline Civic Engagement Measures. 67
Table 12. CAN vs. Time in CAN on Community Engagement Measures. 68
Table 13. CAN vs. Americorps Findings. 71
Table 14. Goal Clarity. 76
Table 15. Social Identity. 77
Table 16. Access to Parties. 78
Table 17. Mutual Understanding. 78
Table 18. Trust. 78
Table 19. This table shows t-test relationships when the Access Index is split at its mean and tested against all other CoP, Community Engagement and Community Efficacy indexed measures. Low/Hi Access was significantly correlated to receipt of CAN newsletters and CG News E-mails (yes or no). 86
Table 20. This table shows t-test relationships when the Trust Index is split at its mean and tested against all other CoP, Community Engagement and Community Efficacy indexed measures. Low/Hi Trust was significantly correlated to receipt of personal phone calls from the Coast Guard (yes or no). 87

THIS PAGE INTENTIONALLY LEFT BLANK

ACKNOWLEDGMENTS

To Kristin Rene Billeaudeaux, my wife of nearly fourteen years, for covering our home front with love, support and commitment in allowing my often arduous academic journey to take place. You put up with my overnights in the office, when I was away at school or some other far-off place. To my children Cutter and Chloe, for your patience and support in allowing me to lock myself in the office with minimum intrusions — I owe you guys!

My sincere thanks to those true believers, those who charged ahead with me on the theoretical vanguard, those who invested their time and talents in taking the network to where it is today when others didn't have time or the vision to do so. Bob Lyden, you have spent upwards of eight years working in the field, spending thousands of hours making CAN happen. To you I owe the most and I hope you realize how valuable you have been to me, the Coast Guard and the nation. Bruce Miller, your tenacity in overcoming our early network woes and building a useful common operating picture where none existed before was a tipping point in the network's lifeline. Had it not been for you, the network would be a very limited tool sequestered to paper charts and colored push pins. Anne Clark, you and the RCMP in British Columbia have been true visionaries in adopting and growing the CAN model — you are true partners.

To my academic guides and new friends at CHDS, I offer my gratitude. Richard Bergin, you have been a spiritual leader, the calm voice in the sometimes tempestuous and challenging world of academics. You always were there when I needed your sage advice, analysis and someone to paddle out with when the surf was running. Wendy Walsh, you have been my true Girl Scout/comedian over the past eighteen months since we met serendipitously, only twenty yards away from each other after you had been calling around the nation looking for me. I'll never forget your cheerleading the network amongst the right people at the right times and your undying support. Oh, thanks too for picking me up at 0530 rain or shine — I had forgotten what a great stress relief an early morning swim could be. Bob Bach, your impassioned teaching style and clear

understanding of what it means to have an engaged citizenry was truly inspiring. You've influenced me and given me hope for the network's future — thank you. Chris Bellavita, you were the academic drill instructor I needed to get the "Platonian" side of my brain up and running — thanks for leading me out of the cave. Heather Issvoran, your never-ending support and friendship are truly appreciated. I'll never forget the giggle fest we suffered at the moment where we most needed self control — oh well! I hope we can work together in the future. Alana Ringle, your spirit and wit were refreshing any time of the day; I enjoyed having you nearby, and your logistic support was superb. Kristin Darken, you went the extra mile in support of any hair-brained request I ever made of you. Thank you for your leadership and vision in leading the establishment of the Maritime Information Initiative.

To my fellow students who made the biggest impact on my academic life and are now called friends: Matt Simeone, Monica Kueny, Lanita Magee, John Donnelly, Nestor Duarte, Rodney Liberato, John Paczkowski, Tim Alben, Tommy Lee, Jeff Wrestling, Gabe Chrono, Brian Draper and Chris Holbrook. To the Coast Guard leaders and friends who have supported CAN in any number of ways, I owe you my gratitude: Dana Goward, Irene Hoffman-Moffat, Scott Wolland, RADM Jeff Garrett, RADM Robert Parker, CAPT Bill Devereaux, CAPT Mark D'Andrea, CDR Chris Woodley, CDR Eric Vogelbacher, LT Ron "Twinki" Owens (thanks for covering, we'll make a Seahawk fan of you yet), PACS Keith Alholm, PAC Paul Rozkowski, PA2 Adam Eggers and PA3 David Marin. A special thanks to David Domke to whom I owe much in my academic endeavors.

And a final special thanks to the interns of The Washington Center and Janis Higginbotham for your hands-on support.

I. INTRODUCTION

A. A SIGNIFICANT NATIONAL THREAT

The *National Strategy for Maritime Security* and its derivative *National Plan to Achieve Maritime Domain Awareness* attest that there are few areas of greater strategic importance than the nation's oceans and waterways. These defining documents claim that our nation's waterways present a broad array of potential targets where terrorists could inflict mass casualties or cause significant economic harm. The *National Plan to Achieve Maritime Domain Awareness*, for instance, emphasizes this risk as its primary argument for improving national security processes to better prevent maritime terror activity. This key concept is highlighted in this passage:

> The oceans are global thoroughfares that sustain our national prosperity and are vital for our national security. Distinct from other domains (e.g., air and space), the maritime domain provides an expansive pathway through the global commons. Terrorist organizations recognize this, and also realize the importance of exploiting the maritime domain for financial gain and movement of equipment and personnel, as well as a medium for launching attacks.[1]

Indeed, waterborne attacks on U.S. and European targets within the past few years illustrate how terrorists are capitalizing on the vast marine environment. The use of one or more small boats, similar to the attacks on the USS Cole in 2000 and the French tanker Limberg off the coast of Yemen in 2002, offer one example. Another involves the use of a single larger ship to come alongside a target and detonate onboard explosives. This strategy was used in 2004 when a fishing vessel attempted an attack on an Iraqi oil terminal.[2]

---

1 Department of Homeland Security, National Plan to Achieve Maritime Domain Awareness for the National Strategy for Maritime Security (Oct 2005), ii, http://www.dhs.gov/xlibrary/assets/HSPD_MDAPlan.pdf (accessed August 24, 2007).

2 Christopher Dickey, "Al-Qaeda at Sea," *Newsweek*, January 27, 2003, http://www.accessmylibrary.com/coms2/summary_0286-22203138_ITM (accessed November 29, 2006), 8.

While there remains a clear and present threat with the maritime domain, both internationally and domestically, the development and implementation of effective counterstrategies has been elusive. This issue was made clear in a December 2006 *New York Times* article, "Failure to Navigate,"[3] where the reporter imputes a confused federal hierarchical organization that divides control of the waterways among fifteen agencies and paints a desperate picture of interagency conflict and high-tech failures. These failures reportedly allow an average of "fourteen boats smuggling drugs, guns or immigrants or engaged in other crimes [to] reach United States shores every week." Hardly three months had passed from the publication date of this story when forty Cubans arrived undetected on two Florida beaches — ironically at the height of an anti-migrant training exercise dubbed "Operation Vigilant Sentry." The migrants actually made it past an anti-migrant drill that included 325 officers from eighty-five federal, state and local agencies. The migrants waded ashore to be identified only when a vigilant citizen called in what looked like an unusual situation.[4]

B. "IT TAKES A NETWORK TO FIGHT A NETWORK"

A growing body of evidence suggests that reliance on a traditional hierarchical structure will not generate the kind of results needed to win our current international conflict. One of acclaimed author John Arquilla's most enduring theoretical claims in this context — that of winning the Global War on Terror (GWoT) — is "it takes a network to fight a network."[5] He suggests national policy and military leaders need to move in the networking direction from one currently rich in hierarchical structure, saying, "it's the only sound basis for policy in this area."

---

3 Eric Lipton, "Failure to Navigate Security Effort by Coast Guard Is Falling Short," *New York Times*, December 30, 2006, http://fairuse.100webcustomers.com/sf/nyt12_30_6_2.htm (accessed August 18, 2007).

4 BBC World News, "Cubans Land During U.S. Coast Drill," http://news.bbc.co.uk/1/hi/world/americas/6434127.stm (accessed August 18, 2007).

5 Harry Kreisler, "John Arquilla Interview: Conversations with History; Institute of International Studies," UC Berkeley, March 17, 2003, http://globetrotter.berkeley.edu/people3/Arquilla/arquilla-con4.html (accessed June 16, 2007).

While Arquilla supports his claims with a variety of wartime cites, independent sources have validated his assertions. Consider, for example, the subject of the June 2007 *Newsweek Magazine* story, "Gathering the Tribes, U.S. Field Commanders are finally beginning to tap the traditional networks that helped Sadam stay in power." In it, the U.S. military's emerging networking efforts in Iraq have been credited in one city for reducing insurgent attacks from thirty to less than one a day.[6]

Closer to home, The *National Plan to Achieve Maritime Domain Awareness* is suggestive of a networked approach to help combat maritime threats in claiming that *all* members of the Global Maritime Community[7] (GMC), including "public" stakeholders, must have an *effective* understanding of maritime activities, garnered through persistent vigilance to increase detection, deterrence and interdiction opportunities. Without such wide-ranging, networked and vigilant relationships in place, the plan argues, "vital opportunities for an early response can be lost."[8] It calls on the Coast Guard and its GMC partners to develop creative programs with broader and more comprehensive scope and vision to enhance Maritime Domain Awareness (MDA), where MDA is defined as "the effective understanding of anything associated with the maritime domain that could impact the security, safety, economy, or environment of the United States."[9] The maritime domain itself is defined as, "all areas and things of, on, under, relating to, adjacent to, or bordering on a sea, ocean, or other navigable waterway, including all maritime-related activities, infrastructure, people, cargo and vessels and other conveyances."[10]

---

[6] Melinda Liu, "Gathering the Tribes, U.S. field commanders are finally beginning to tap the traditional networks that helped Sadam stay in power," *Newsweek Magazine*, http://www.msnbc.msn.com/id/18881803/site/newsweek/ (accessed June 16, 2007).

[7] National Plan, the Global Maritime Community of Interest (GMCOI) includes, among other interests: federal, state, and local departments and agencies with responsibilities in the maritime domain. Because certain risks and interests are common to government, business and citizen alike, community membership also includes public, private and commercial stakeholders, as well as foreign governments and international stakeholders. National Plan, 1.

8 Ibid.

9 Ibid.

[10] Ibid.

Other policy and strategy documents produced since 9/11, including The *National Plan to Achieve Maritime Domain Awareness*, stress the importance of networking citizens into a larger community of agencies and individuals. The *National Strategy for Homeland Security*, for instance, identifies citizens and first responders as key players in a concerted national effort that will win the GWOT.[11] Indeed, public safety officers at all levels of government have garnered the assistance of volunteers to provide adequate numbers of human resources needed to effectively and safely manage large-scale response and recovery evolutions.[12]

According to government statistics, there is one firefighter for every 280 citizens, one sworn police officer for every 385 citizens and one emergency medical technician/paramedic for every 325 people.[13] In the maritime domain, however, this ratio is not as forgiving, with only one Coast Guardsman for every 7,500 Americans.

Improvements in networking the non-affiliated or yet-to-be-formed community have the potential to be a highly important force multiplier as the ratio of citizen to professional officer is stark.

C. HIERARCHIES ARE STRONG BUT SLOW, NETWORKS ARE SUPPLE AND NIMBLE

While there have been successes in utilizing trained citizens in aiding first responders, there remains a notable national-level void in building networks of unaffiliated citizens within homeland security and prevention-centric missions — especially in the Maritime Domain. Arquilla suggests that while our nation might have

---

[11] Office of Homeland Security, National Strategy for Homeland Security (Washington, DC: Office of Homeland Security, July 2002) 2, http://www.whitehouse.gov/homeland/book/ (accessed July 20, 2006).

[12] Large-scale disasters, such as Hurricane Andrew that hit Homestead, FL in August 1992, the terrorist attack on the Alfred P. Murrah Federal Building in Oklahoma City on April 19, 1995, the terrorist attacks on New York and Washington D.C. on September 11, 2001, Hurricane Charley that hit Charlotte and Hardee counties, FL on August 13, 2004, Hurricane Frances that hit Palm Beach, FL on September 4, 2004, Hurricane Ivan that hit Pensacola, FL on September 15, 2004, and Hurricane Jeanne that hit near Stuart, FL on September 26, 2004 have taught response and recovery strategists the importance of integrating and coordinating civilian volunteers into disaster management planning. See Michael M. Gonzalez, "Citizen Involvement in Disaster Management" (master's thesis, Naval Postgraduate School, 2005), 1.

[13] Department of Homeland Security, "Citizen Corps Introduction" (PowerPoint Slide 10), http://www.citizencorps.gov/ppt/cc_overview_060804.ppt (accessed August 26, 2006).

embraced some level of networking in fighting the GWOT, government leaders do not network well in carrying out the domestic GWOT mission. He claims that the Department of Homeland Security relies on a "stove-piped" hierarchy and that it must be changed.[14] Moreover, Arquilla charges that the attacks of 9/11 came through, not just a failure of managerial imagination, but a failure to use networked information properly due to a national hierarchical-based organizational structure. "This should be a lesson to us, one that at the domestic level we still haven't gotten."[15]

So, while the notions of a networked community that fosters citizen vigilance and creative problem solving are touted in national strategy documents, movement towards implementing, formalizing, exploiting or effectively studying a national-level MDA-inspired networked community remains elusive.[16] Senior Research Fellow for National Security and Homeland Security James Carafano agrees. He suggests that only marginal efforts have been made to coordinate research and development of MDA techniques and tactics among myriad federal agencies since 9/11. Further, he says the disparate lot of pilot projects, experiments and ongoing initiatives lack coordination and clear plans to operationalize the research results.[17]

As a DHS agency, the Coast Guard is charged with protecting the nation's 95,000 miles of shoreline, including ports, cities and critical infrastructure. There is much hanging in the balance between the Coast Guard's decision to rely on standard hierarchical practices or adapt to a more networked approach.

---

[14] Kreisler, "Arquilla interview."

[15] Ibid.

[16] The Coast Guard provides a passive reporting phone number and encourages all Americans to use it. However, the program, "America's Waterway Watch (AWW)," lacks the information distribution, collaboration and common operating picture tools and technologies demanded by the National Strategy for Maritime Security, the National Plan to Achieve Maritime Domain Awareness, or the Secure Seas, Open Ports Strategy. Boaters and beachgoers (among others) are requested to report suspicious activity by calling a toll-free hotline. This campaign relies on word of mouth, brochures and a web site as its primary means for educating the boating and seaside publics. As a campaign, it has no methodologies for contact or follow-up with the citizens who fall under its programmatic umbrella; users are not members and there is no training.

[17] James Jay Carafano, "Small Boats, Big Worries: Thwarting Terrorist Attacks from the Sea," The Heritage Foundation, *Backgrounder*, no. 2041, June 11, 2007, http://www.heritage.org/Research/HomelandDefense/bg2041.cfm (accessed June 15, 2007).

D. NETWORKS AND GOVERNMENT

In the days and weeks following 9/11, our national leaders sought to form networks of trained citizens under a new program called Freedom Corps, with a mission of responding to a crisis at home, rebuilding communities and extending American compassion throughout the world. President George Bush discussed the need for volunteers servicing government needs in a 2002 State of the Union Speech:

> Time and distance from the events of September the 11th will not make us safer unless we act on its lessons. America is no longer protected by vast oceans. We are protected from attack only by vigorous action abroad, and increased vigilance at home… My call tonight is for every American to commit at least two years — 4,000 hours over the rest of your lifetime — to the service of your neighbors and your nation…America needs retired doctors and nurses who can be mobilized in major emergencies; volunteers to help police and fire departments; transportation and utility workers well-trained in spotting danger.[18]

The call to national service within a volunteer network is not new. Calls to volunteer in unique, non-hierarchical government networks, however, have been around for only about a decade.

Government-led networking is defined as: "…[N]etworks of public organizations …[involving] formal and informal structures, composed of representatives from governmental and nongovernmental agencies working interdependently to exchange information and/or jointly formulate and implement policies that are usually designed for action through their respective organizations."[19] In 1997, researcher Lawrence O'Toole explained these networks as:

> Structures of interdependence involving multiple organizations or parts thereof, where one unit is not merely the formal subordinate of the others in some larger hierarchical arrangement…The institutional glue

[18] The White House, State of the Union Speech, 2002, http://www.whitehouse.gov/news/releases/2002/01/20020129-11.html (accessed August 21, 2007).

[19] Robert Agranoff, *Leveraging Networks: A Guide for Public Managers Working across Organizations.* In Collaboration: *Using Networks and Partnerships*, ed. John M. Kamensky and Thomas J. Burlin (Lanham, MD: Rowman & Littlefield Publishers, 2004), 63.

> congealing networked ties may include authority bonds, exchange relations, and coalitions based upon common interest, all within a single multiunit structure. In networks, administrators cannot be expected to exercise decisive leverage by virtue of their formal position.[20]

O'Toole claims that government's increased responsibility, for managing multi-faceted and multi-jurisdictional issues, presents challenges to which no single organization could comprehensively respond. Also, growing government complexity is catalyzing growth of broad, multi-dimensional, collaborative networks[21] because problems are now more prevalent.[22]

Professors William Snyder and Xavier de Souza Briggs pragmatically highlight the opportunities of a broad government-to-citizen approach, emphasizing a bottom-up networked solution to solving national challenges in their 2003 report, *Communities of Practice: A New Tool for Government Manager*:

> The local players must be treated as equal partners in a larger governance system that serves and engages all citizens. This is a crucial mind-set to establish in order to elicit the foundation of trust, reciprocity, and shared values that will facilitate knowledge flows and collaboration across agencies, sectors, and levels. Current institutional silos are embodied not only in the informal elements of the organizational culture, but also in the formal structures, systems, and procedures by which federal officials are typically constrained.[23]

This transitional phenomenon is evidenced by the post-9/11 U.S. National Intelligence Community shakeups — restructuring to maximize collaboration and sharing

---

20 Lawrence J. O'Toole Jr., "Treating Networks Seriously: Practical and Research-Based Agendas in Public Administration," *Public Administration Review* 57 (January/February 1997): 45

21 Brinton H. Milward and Keith G. Provan, "A Manager's Guide to Choosing and Using Collaborative Networks," IBM Center for the Business of Government, 2006, http://www.businessofgovernment.org/main/winners/index.asp (accessed May 10, 2007).

22 Joop Koppenjan and Hans-Erik Klijn, "Managing Uncertainties in Networks: A Network Approach to Problem Solving and Decision Making," in "Leveraging Collaborative Networks in Infrequent Emergency Situations," by Donald P. Moynihan, IBM Center for the Business of Government, June 2005, http://www.businessofgovernment.org/main/winners/index.asp (accessed May 10, 2007).

23 William M. Snyder and Xavier de Sousa Briggs, "Communities of Practice: A New Tool for Government Managers, IBM Center for the Business of Government," November 2003, http://www.businessofgovernment.org/main/publications/grant_reports/details/index.asp?GID=159 (accessed May 10, 2007), 51.

among many diverse partners.[24] Another example includes the networked goal of the Intelligence Reform and Terrorism Prevention Act of 2004 (IRTPA),[25] which promotes the establishment of a broad and informed environment that will link people, systems, databases and information from all levels of government. Finally, the networked approach is forwarded in the National Strategy for Homeland Security's reliance on "…principles of shared responsibility and *partnership* with the Congress, state and local governments, the private sector and *the American people*."[26] (emphasis added)

Despite the upward trend in network utilization, some argue that government leaders should move more quickly into this nascent arena, repeatedly citing the daunting needs and mission-driven objectives of the twenty-first century.[27]

Enhanced access to knowledge through new technologies has increased public uncertainty to a point that government agencies, more than ever, need to rely on networks of skilled and resourceful actors.[28] Snyder suggests that our government institutions need to be creative in developing these tools as they provide the cornerstones for mitigating national-level threats (through international relations and providing for the national defense), enacting supporting legislation and their affiliated protocols and methods.[29]

---

24 Snyder and de Sousa Briggs, "Communities of Practice." See also COP Theory by Etienne Wenger at http://www.ewenger.com/theory/.

25 U.S. Congress, Intelligence Reform and Terrorism Prevention Act of 2004: The Interim Implementation Plan Report in Support of the Information Sharing Environment (Washington DC: United States Government Printing Office, 2004) Congressional Reports: H.Rpt. 108-796 – ,http://www.ise.gov/Q&A%20ImplementationPlan2-3-06.pdf (accessed November 27, 2006).

26 The National Strategy for Maritime Security. Washington D.C: Office of Homeland Security, September 2005. http://www.whitehouse.gov/homeland/maritime-security.html (accessed August 14, 2006), 2.

27 Ibid.

28 Donald P. Moynihan, "Leveraging Collaborative Networks in Infrequent Emergency Situations," IBM Center for the Business of Government, June 2005, http://www.businessofgovernment.org/main/winners/index.asp (accessed May 10, 2007).

29 William M. Snyder and Etienne Wenger, "Communities of Practice in Government, The Case for Sponsorship," an executive unpublished memo, Dec 2003. Provided by the author, May 11, 2007.

E. COMMUNITIES OF PRACTICE

A continued threat in the post-9/11 environment has created pressure for all levels of government to introduce niche products and service innovations to maintain a safe and secure public environment. In response, some government organizations charged with homeland security missions are attempting to leverage shared knowledge creation within social network-driven communities, or networked communities, referred to as communities of practice (CoP).[30]

A community of practice (CoP) is a group of individuals who come together to learn by sharing knowledge and experiences related to their activities. Participants at all levels can benefit from their community relationship; questions can be answered, new insights are provided and broad support can be offered. Originally, the term was used to include communities that met or communicated about a specified business or community-oriented topic.[31] "Typically, the term is now associated with professional, work-oriented groups that may be associated with a professional organization, a company or government agencies."[32]

Popular definitions of CoP concepts refer to the process of collective social learning that occurs when people have a common interest in "some subject or problem, collaborate over an extended period to share ideas, find solutions or build innovations."[33]

More sophisticated explanations showcase these communities as core elements of society that steward knowledge assets, thus becoming a "social learning system" where

---

30 Snyder and de Sousa Briggs, "Communities of Practice." See also Department of Defense, Communities of Interest, http://www.defenselink.mil/cio-nii/coi/index.shtml (accessed May 10, 2007).

31 Jennifer Preece, (2004) Etiquette and trust drive online communities of practice. Journal of Universal Computer Science (draft / accepted, in press), http://www.ifsm.umbc.edu/~preece/Papers/Tacit_Know_COPs.pdf (accessed August 26, 2007).

32 Ibid., 1.

33 Wikipedia, Community of Practice, http://en.wikipedia.org/wiki/Community_of_practice (accessed May 13, 2007).

networked participants or practitioners collaborate to develop standards and relationships, problem solve and share ideas.[34]

In line with this thesis, CoP theory holds that an essential dimension of a CoP is a reliance on voluntary community participation. The voluntary aspect acts as the catalyst for members to best learn and relate to their roles in ways that ultimately add value to the whole network of participants.

In line with the spirit of this thesis, government agencies are said to have the opportunity to capitalize on a CoP in times like ours as "communities of practice often form in response to some catalytic event that increases attention to a strategic civic issue and gets the attention of sponsors."[35]

F. TOOLS TO FIGHT A DIFFERENT KIND OF WAR

Ample evidence suggests that, in the weeks and months after 9/11, most Americans were greatly and forever affected by that day's violence. The loss of nearly three thousand U.S. civilian lives and the very real possibility of more terrorist attacks (such as Anthrax in 2001) initiated an era of extended and heightened domestic anxieties. Frank G. Hoffman of the Foreign Policy Research Institute suggests the new American normalcy must include a mindset of preparation and flexibility:

> In the new normalcy we already face an implacable, cunning enemy who is completely ruthless, constantly learning and altering his tactics to secure any advantage he can. We have to be prepared to face this adaptive enemy, and be equally prepared to out-think and out-adapt an elusive opponent. There are no simple solutions or templates against such adversaries. Rigid approaches and non-adaptive institutions fare poorly against this protean form of enemy.[36]

A question resonating on the minds of many, in the post-9/11 era, is whether America will ever get back to normal. Simply searching the phrase, "A new American

---

34 Snyder and de Souza Briggs, "Communities of Practice."

35 Ibid., 3.

36 Frank G. Hoffman, "The New Normalcy, Foreign Policy Research Institute," http://www.fpri.org/enotes/20060512.americawar.hoffman.newnormalcy.html (accessed June 24, 2007).

normalcy" in an academic search engine turns up nearly 19,000 hits.[37] The days of the U.S. military carrying the fight to hotspots outside of our nation's borders are over. The battlefront, and the fear and tensions that go along with a battlefront, is now the homeland — our cities, communities and waterways.

Today's enemy uses technology, wide-ranging and diverse social contacts and web resources to form nimble and capable networks that can act as highly effective force multipliers. Researchers warn that we have a long way to go in adapting ourselves to a networked approach that can counter the networked threat. Academics say government agencies must give up our Cold War-era hierarchies, and the networking pump is primed as citizens are looking for leadership.

That said, this thesis proposes that the Coast Guard adopt a nationwide citizen-based network approach to assist in managing many of its near-shore all-hazards missions through the use of a CoP that stresses engagement, education and, most importantly, vigilance as common denominators across a broad spectrum of waterfront homeowners, businesses, tribal leaders and boat owners.

The transition to a CoP will not be easy — the Coast Guard has relied on celebrated and capable hierarchies for more than two hundred years of service. Its post-9/11 transition to DHS from the Department of Transportation, however, has increased its oversight of maritime security-related missions and duties. This transition has included heavy investments in high-tech solutions to managing a sophisticated, ever-changing and challenging mission set.

Some of these high-visibility investments have yielded poor or questionable outcomes that have left holes in the nation's maritime defenses. This issue surfaced in the aforementioned article, "*Failure to Navigate.*"[38]: The Coast Guard installed long-range surveillance cameras, coastal radar and devices that automatically identify approaching vessels to help search out possible threats. But the radar confuses waves with boats. The

37 "A new American normalcy," typed into Google Scholar on June 24, 2007, returned 18,800 research options.

38 Lipton, "Failure to Navigate."

cameras cover just a sliver of the harbor and coasts. And only a small fraction of vessels can be identified automatically….Work is far behind schedule and over budget.

The article quotes a federal official acknowledging the limited progress made toward creating a viable defense at harbors, nationwide, against a maritime attack, despite the billions invested in port security since 2001. The Coast Guard's spokesperson reflected this sentiment…

> The more vigilant and alert you are, the less likely the adversary will decide this is a good way to strike at you. For now, there are lots of cockpit doors that have not been reinforced.
>
> —Capt. Dana A. Goward, director of the Coast Guard project, Maritime Domain Awareness.

Like most Americans, the Coast Guard is wrestling with a new normalcy in a time of change. That said, a maritime CoP could enhance the Coast Guard's prevention and response capabilities while exponentially expanding its near-shore sensory capabilities. This potential is important for study in today's dynamic, fluid and fast-paced environment. As a small agency with a large mission, the Coast Guard needs to work beyond traditional barriers to solve problems, share ideas or respond to threats with informed, committed and capable stakeholders.

G. RESEARCH GOALS AND RESEARCH QUESTIONS

The goal of this research is to contribute to the understanding of how government organizations might better engage in implementing homeland security innovations via non-formulaic innovative practices that facilitate service efficiencies and enable broad problem-solving capabilities that ultimately act as force multipliers at the citizen level.

This thesis will utilize CoP components and attributes as a basis from which to provide theoretical support, evaluation and understanding of how a national-level CoP could act as a grassroots force multiplier for the Coast Guard. This relevancy of this approach is multifold:

- First, the Coast Guard has no CoP doctrine or research to implement a national-level citizen-based CoP. Simply, there is a lack of pragmatic, homeland security-centric networked community guidance.
- Second, researchers suggest there is continuing confusion about how CoPs should be managed, despite published guidance in non DHS/CG endeavors.[39]
- Third, theory suggests that mismanagement of a CoP can have significant consequences — especially at the governmental level where homeland security agencies are challenged to cope with an ever-changing threat, limited resources and high stakes for failure. Lawrence O'Toole notes this potential: "Conventional theory (traditional hierarchy management) may actually be counterproductive when applied inappropriately to network contexts."[40]

This study will explore and identify the theoretical attributes of a CoP. These CoP attributes will then be used to evaluate a unique regional[41] maritime collaboration and corroboration "community" called Citizen's Action Network (CAN) with an emphasis toward a national implementation.

I will endeavor to identify a new CoP outcome tailored for homeland security purposes: Vigilance. I suggest vigilance is the lowest, but most valuable, common denominator for homeland security leadership to engender within citizens across all domains.

Finally, I will attempt to showcase how government leadership can engage citizens, bolster or strengthen its CoPs, and improve vigilant capabilities and behavior. With this in mind, I will attempt to answer the following research questions:

39 Milward and Provan, "A Manager's Guide to Choosing and Using Collaborative Networks."

40 O'Toole, "Treating Networks Seriously."

41 The Citizen's Action Network only services the states of Washington, Oregon and the Canadian province of British Columbia. It is not a national program.

1. **Do the demographics of the citizen's action network, a networked community, indicate trends in networked community volunteerism?**

2. **Does participation in the citizen's action network, a networked community, increase levels of social capital and civic engagement?**

3. **Do higher levels of social capital, social identity, goal clarity, access to parties, trust-based social capital and expertise location lead to increased "innovative vigilance" and increase the likelihood to report?**

4. **What effects, if any, do coast guard-led communications have on the citizen's action network?**

5. **Do members populating the higher range of access to parties and trust-based social capital within can also populate the higher range of this study's other indices?**

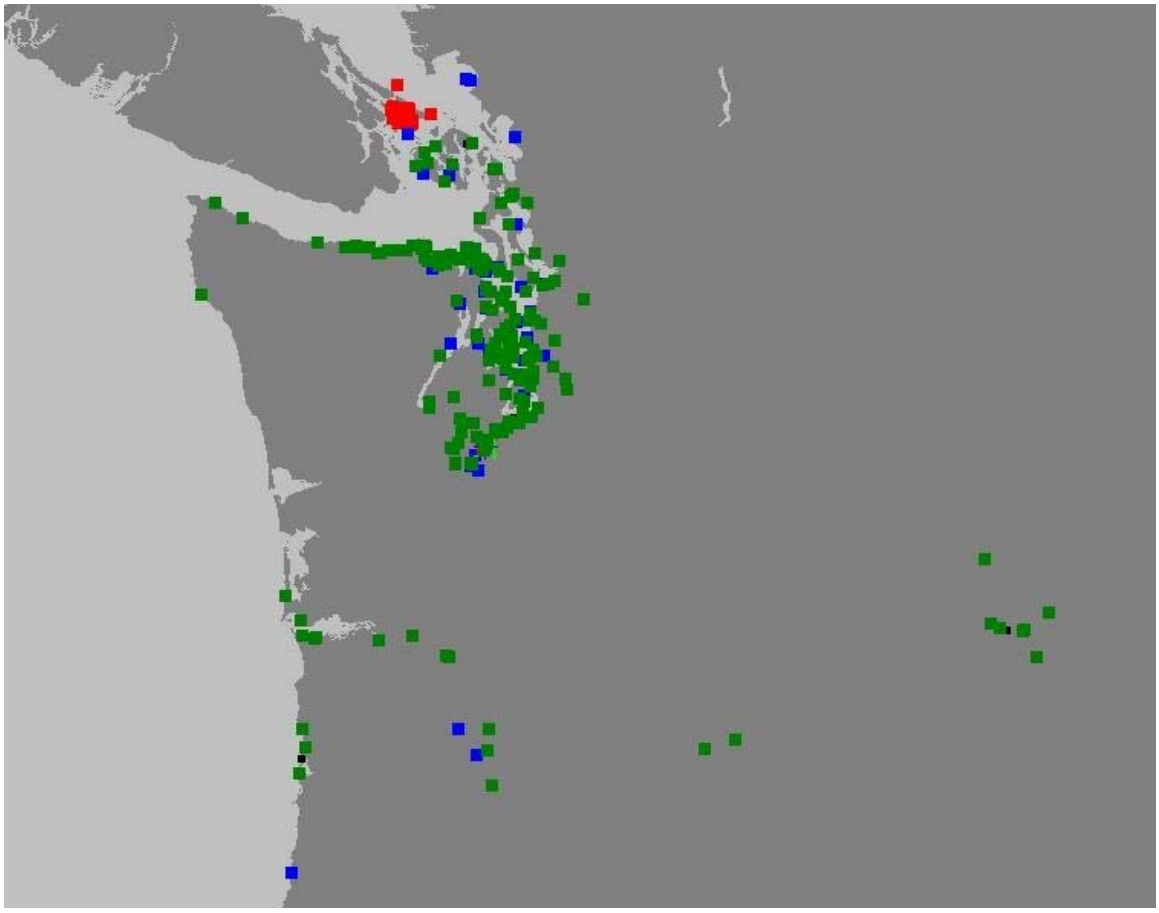


Figure 1. CAN Scatterplot

CAN is displayed within a common operating picture. Each icon represents a CAN member's location. The graphic interface allows full access to member's training, contact information and other significant information to Coast Guard dispatchers when the colored icon is clicked. Color is used to distinguish different levels of membership; red represents Canadian CAN members living on or near the US/Canadian maritime border; blue represents dual CAN/USCG Auxiliary members and black represents waterfront businesses.

THIS PAGE INTENTIONALLY LEFT BLANK

II. LITERATURE REVIEW

Following the attacks of 2001, and the spate of naturally occurring disasters since, all levels of government have hoped to engage, train and ultimately come to count on everyday Americans to go beyond voting and to actively participate in ameliorating the nation's threats. With this in mind, consideration in defining and capitalizing on the concept of social networking becomes paramount. Further, as the homeland security mission matures, we must look towards capitalization and implementation of social networking as a legacy force multiplier across all domains, including the identification of citizen roles tailored to fit any commitment level.

This literature review will focus on how the maritime community might harness this nation's social capital and draw on citizen engagement to enhance Coast Guard capacities with Maritime Domain Awareness. Further, through the process of building an MDA-inspired relationship with citizens, the Coast Guard could ultimately develop a more trusting relationship, eventually empowering communities to support crime prevention as well as bolster prevention and response capabilities. This review will cover literature on the topics of social networks, social capital and civic engagement, communities of practice, community policing, and post-9/11 national strategies and plans where citizen participation is identified or desired. This material is relevant to both the nature of CAN and its present and future as part of a homeland security citizen-centered tool.

A. VOLUNTEERISM IN POST-9/11 AMERICA

This literature review would not be complete if it did not address volunteerism in post-9/11 America.

Academics Peter Callero, Judith Howard and Jane Piliavin suggest that individuals volunteer in order to satisfy certain needs or motives, and that *role identity* is

the proximal cause of sustained volunteering [42] where v*olunteerism* is defined as a "service to the community given without payment through a group or organization."[43]

Researchers Susan Roth and Lindsey Cohen, as well as Caroline Aldwin, claim that there are high levels of chronic stress in our post-9/11 society due to real or imagined threats. To deal with these stressors, they suggest that citizens use coping-centered engagement behaviors — skills termed *approach, monitoring* or *vigilance* — that are aggressive in dealing with, understanding and solving issues directly. Compared to an opposite behavioral set — dubbed *avoidance, repression* or *blunting* — the aggressive behaviors are obviously deemed superior.[44] Research also suggests that active participation in an organization will continue to the extent that the experience fulfills the personal motivations in the first place.[45]

Social Scientists David Sallach, Nicholas Babchuk and Allen Booth suggest volunteers garner personal benefits and positive consequences compared to those who do not volunteer.[46] Further, they found that volunteer group members typically carry higher levels of community orientation, self-esteem, political efficacy and morale. They also exhibit much lower levels of alienation, apathy and social withdrawal.[47]

Professors Ram Cnaan and Robin Goldberg-Glen point out that volunteer behavior is preceded by a cognitive evaluation of the benefits derived from

---

[42] Peter L. Callero, Judith A. Howard, and Jane A. Piliavin, "Helping behavior as role behavior: Disclosing social structure and history in the analysis of prosocial action," *Social Psychology Quarterly* 50 (1987): 247-256.

[43] J. Warburton and D. J. Terry, "Volunteer decision making by older people: A test of a revised theory of planned behavior," *Basic and Applied Social Psychology* 22 (2000): 245–257, p. 249.

[44] Susan Roth and Lindsey J. Cohen, "Approach, avoidance, and coping with stress," *American Psychologist*, 41, 813–819, 1986. Also, Caroline. M. Aldwin, *Stress, Coping and Development: An integrative approach* (Guilford New York) 1999, found in Bruce Bongar et al., *Psychology of Terrorism*, 2007 Oxford Press, Chapter 25, 409.

[45] M. Snyder, "Basic research and practice problems: The promise of a "functional" personality and social psychology," *Personality and Social Psychology Bulletin* 19 (1993): 251-264.

[46] David Horton Smith, Richard D. Reddy, and Burt R. Baldwin, "Types of voluntary action: A definitional essay," in *Voluntary Action Research*, ed. David H. Smith (Lexington, Mass.: Heath, 1972) 159–95.

47 David L. Sallach, Nicholas Babchuk, and Alan Booth, "Social involvement and political activity: another view," *Social Science Quarterly* 52 (1972):879-92.

volunteering.[48] They caution that this evidence relied heavily on general population surveys and not the organizations themselves.[49]

Individual benefits to volunteer behavior might be explained best by David A. Snow and his research partners. They attempted to link individual and social movement organizational interpretive orientations through the use of *frames*. In a frame, individual interests, values and beliefs would match with the social movement organizational activities, goals and ideology, such that, together, they were congruent and complementary. Frame, according to their research, denoted a "schemata of interpretation" that enabled individuals "to locate, perceive, identify, and label" occurrences within their life space and the world at large. As frames render events or occurrences meaningful, they function to organize experience and guide action, whether individual or collective.[50]

E. Gil Clary and Mark Snyder's seminal work, *The Motivations to Volunteer*,[51] identified variables that build upon Snow's framing interpretations. They identified motivations, dubbed the Volunteer Functions Inventory (VFI), capturing six functional reasons for volunteerism:

- **Values:** The individual volunteers in order to express or act on important values like humanitarianism.
- **Understanding:** The volunteer is seeking to learn more about the world or exercise skills that are often unused.
- **Enhancement:** One can grow and develop psychologically through volunteer activities.
- **Career:** The volunteer has the goal of gaining career-related experience through volunteering.

---

48 R. A. Cnaan, and R. S. Goldberg-Glen, "Measuring motivation to volunteer in human services," *Journal of Applied Behavioral Science,* 27 (1991): 269–284.

49 David Knoke, "Commitment and Detachment in Voluntary Associations," *American Sociological Review,* 46 (April 1981): 141–158, p. 141.

50 David A. Snow, E. Burke Rochford, Jr., Steven K. Worden, and Robert D. Benford, "Frame Alignment Processes, Micromobilization and Movement Participation," American Sociological Review 51, (August 1986):464–481).

51 Clary and Snyder, Motivations.

- **Social:** Volunteering allows an individual to strengthen his or her social relationships.
- **Protective:** The individual uses volunteering to reduce negative feelings, such as guilt, or to address personal problems.

As a conceptual backdrop, the VFI offers an excellent tool to ascertain why certain people are compelled to volunteer for any post-9/11 security organization. Worth consideration, then, is how national leadership developed and delivered discourse in support of recruiting wartime volunteers.

According to sociologists Peter Padilla and Mary Laner, "recruitment messages are used to capture the attention of potential recruits and to persuade them to sign on to a new way of life, complete with a new set of symbols (i.e., insignia), rules, and a sense of identity."[52]

Research shows that military recruitment relies heavily on patriotic themes and language for its appeal, and this trend was especially robust in the years before America began its role in the Vietnam conflict. However, utilizing patriotic themes and language for recruiting active-duty soldiers seems to be the same approach taken by national leadership in the wake of 9/11. Indeed, several studies on the subject contend that the administration and other government leaders "often articulated distinctly pro-American themes in their public communications," and that "...this national identity discourse was at the heart of the U.S. government's attempt to unite the American public and to mobilize support for the ensuing 'War on Terrorism.'"[53]

Volunteers responding to patriotic calls for duty — in capacities short of joining a military service — could elect to serve in many safety- or security-oriented organizations. Two very popular pan-national, homeland security-centric options will be explored in the following pages.

---

[52] Peter A. Padilla and Mary R. Laner, "Trends in Military Influences on Army Recruitment Themes: 1954–1990," *Journal of Political and Military Sociology*, 30, no. 1 (2002): 113–133, 114.

[53] John Hutcheson et al., "U.S. National Identity, Political Elites, and a Patriotic Press Following September 11," *Political Communications* 21 (2004): 27-50.

B. POST-9/11 CITIZEN ROLES IN HOMELAND SECURITY:

A variety of books, journals, articles and thesis projects have identified not only the need, but also "how to" guides on mobilizing citizens to support safety and security missions. This literature, however, falls into two very distinct categories. The first emphasizes community policing and provides theories supporting neighborhood watches for crime prevention and heightened police officer involvement with their "beat" customers. The second emphasizes citizen roles in homeland security, encouraging growth or re-tooling of programs and training for citizen-based first responders, where hands-on involvement is appropriate and needed. Specifically, this cornerstone material coalesces around the national Citizen Corps program. Each of these two categories, however, offers dynamic examples of social capital and community involvement that contribute to the broader American post-9/11 volunteer landscape. While the literature on citizen roles in homeland security contains material on community policing and terrestrial-based citizen response networks, academic research on citizen roles in the maritime realm has not been explored. To better understand citizen roles, it is important to distill them down, starting with a review of appropriate national policy doctrine.

The National Strategy for Homeland Security defines homeland security as "a concerted national effort to prevent terrorist attacks within the United States, reduce America's vulnerability to terrorism, and minimize the damage and recover from attacks that do occur."[54] To carry out these goals, the administration relies on "…principles of shared responsibility and partnership with the Congress, state and local governments, the private sector and the American people."

The strategy provides eighteen sections explicitly detailing critical mission objectives to be managed by all levels of government. Conversely, the suggested responsibilities tendered to citizens are provided only in the closing sentences of the document's eighty-seven pages. These recommendations are featured at the tail of the document's appendix, *September 11 and America's Response.* The text suggests

54 Department of Homeland Security, *National Strategy*, 2.

Americans consider volunteering to support police, join neighborhood watch groups or receive Community Emergency Response Team (CERT) training, among other options.[55]

Unfortunately, the *National Strategy's* fleeting references to post-9/11 citizen engagement actually represent a high water mark for capturing the spirit and capabilities of the American public; opportunities for participation failed to appear within the national security strategies and supporting plans that followed.

Two years after the publication of the *National Strategy for Homeland Security*, for instance, the president called for a comprehensive *National Strategy for Maritime Security*.[56] The strategy was produced to better synchronize, integrate and implement existing Department of Defense and Homeland Security-level strategies. This strategy, and its eight subordinate maritime-related plans,[57] laid out a comprehensive approach to achieve maritime security through the goal of attaining a globally layered and multi-agency approach to mitigate maritime threats. Like its *National Strategy* lineage, however, the *National Strategy for Maritime Security* and its eight support plans remain nearly devoid of specific guidelines for citizen engagement.

The oversight in proposing an option to enlist the public's help came despite the plan's calls for "…integrating all-source intelligence, law enforcement information, and open-source data from the public and private sectors."[58] Moreover, the *National Plan to*

---

55 Department of Homeland Security, DHS Press Release – February 1, 2006 (Washington, DC: DHS, 2006), http://www.citizencorps.gov/pdf/news/cc_4_years.pdf (accessed August 14, 2006).

56 Department of Homeland Security, *National Strategy*.

57 The National Strategy for Maritime Security was signed in 2005 as a derivative strategy stemming from the National Security Presidential Directive (NSPD 41) and the Homeland Security Presidential Directive 13 (HSPD 13). It was a watershed event for the Coast Guard. The NSMS has given the Coast Guard a clear, dynamic and urgent charter to tackle a wide range of marine-related homeland security challenges among and between its DHS, DOD and international partners. HSPD 13 includes eight plans to ensure maritime security via initiatives that fall under headings such as awareness, prevention, protection, response and recovery.

58 Department of Homeland Security, National Plan, 16.

Achieve Maritime Domain Awareness[59] refers to "citizen" only once to explain their membership as part of a Global Maritime Community.[60] This gap persists despite the plan's claim that

> The maritime threat environment of the 21st Century requires broader scope and a more comprehensive vision. We must look beyond traditional surveillance of ports, waterways, and oceans, and continuously adapt to new challenges and opportunities. We must set priorities for existing and developing capabilities to efficiently minimize risks while contending with an uncertain future.[61]

While the *National Strategy for Homeland Security* claims shared responsibility and partnership with the American people, the charter seems lost in the ensuing *National Strategy for Maritime Security* and its subordinate plan. These strategies and their supporting plans clearly recognize an overarching goal of diversifying and sharpening a broad array of maritime tools for achieving domain awareness.[62] They fall short at specifically recommending investments in citizens as formal contributors, despite the growing realization that professional, uniformed agents cannot carry on alone. Author Zack Bingham summarizes this point succinctly when claiming that "it's vital that all states realize the value and importance of one common asset: their citizens."[63]

Americans have partnered with federal, state and local governments, however, in supporting the HLS mission in two prodigious outlets. Citizen Corps and Community

---

59 Domain Awareness is the effective understanding of anything associated with the global maritime domain that could impact the security, safety, economy, or environment of the United States. From the Department of Homeland Security, National Plan to Achieve Maritime Domain Awareness, 1.

60 Global Maritime Community of Interest (GMCOI) includes, among other interests, the federal, state, and local departments and agencies with responsibilities in the maritime domain. Because certain risks and interests are common to government, business, and citizen alike, community membership also includes public, private and commercial stakeholders, as well as foreign governments and international stakeholders. From the Department of Homeland Security, National Plan to Achieve Maritime Domain Awareness, 1.

61 National Plan, 2.

62 The maritime domain is defined as all areas and things of, on, under, relating to, adjacent to, or bordering on a sea, ocean, or other navigable waterway, including all maritime-related activities, infrastructure, people, cargo, and vessels and other conveyances. From The National Strategy for Maritime Security.

63 Zack Bingham, "Citizen's Corp: Connecting the home to homeland security," Homeland Defense Journal 2, no. 9 (October 2004), 17.

Policing programs are two citizen-based organizations that warrant review here, in that many concepts and best practices may be exportable into the maritime domain.

1. Community Policing

Community policing is one of the most popular ways in which non-uniformed citizens can perform to serve their country and assist their community in securing our homeland.

Community policing is both a philosophy and strategy, leveraging community interaction and support to help control crime. Specifically, citizens who are involved with their police departments are looked to as trusted agents in identifying suspects or community problems. Police who ascribe to this philosophy have a tendency to carry out more community outreach, which might include having officers walk their beat instead of driving, in an effort to build mutually beneficial bonds of trust and reliance.[64]

a. Intelligence Gathering

Building beneficial bonds of trust and reliance between police and citizens goes beyond traditional neighborhood-centric benefits in today's homeland security environment. Grassroots intelligence-collection capabilities are more valuable today than ever. This sentiment is captured in *Criminal Intelligence Sharing: A National Plan for Intelligence-Led Policing at the Local, State and Federal Levels,*[65] which highlights this relationship:

> • COP officers have immediate and unfettered access to local, neighborhood information as it develops.
>
> • Citizens are aware of, and seek out COP officers to provide them with new information that may be useful to criminal interdiction or long term problem solving.

---

[64] Wikipedia, Community Policing, Wikipedia, http://en.wikipedia.org/wiki/Community_policing (accessed August 18, 2007).

[65] International Association of Chiefs of Police (AICP) and Community Oriented Policing Services, Criminal Intelligence Sharing: A National Plan for Intelligence-Led Policing at the Local, State and Federal Levels (August 2002), 2. http://www.theiacp.org/documents/pdfs/Publications/intelsharingreport.pdf (accessed August 18, 2007).

• The positive nature of COP/citizen relationships promotes a continuous and reliable transfer of information from one to the other.

• Terrorism and other criminal activity by its nature; cell structure is locally based, making neighborhoods a prime source of potentially useful information.

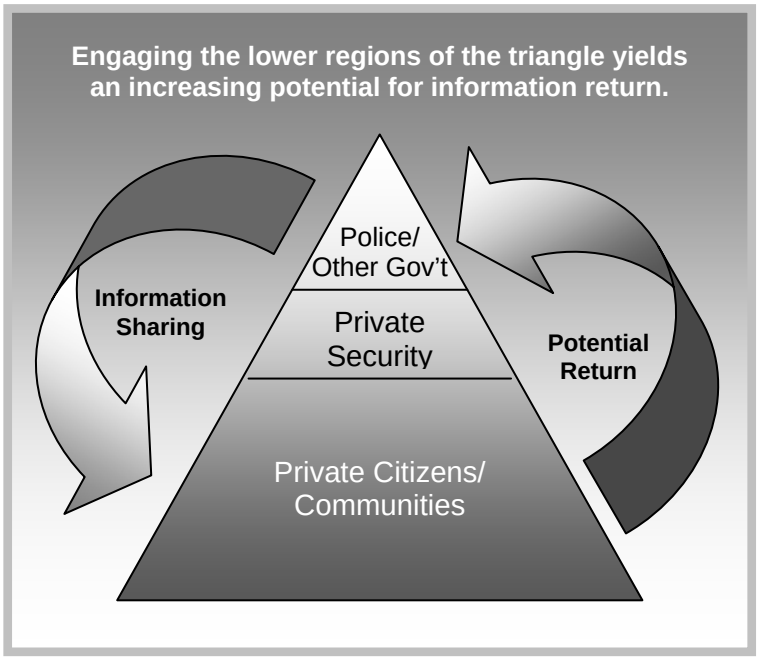


Figure 2. The Police/Private Sector Information Sharing-ROI Triangle.

Concept developed by the author, artwork by Inspector Matt Simone of Nassau County Police.

Police Inspector and NPS Master's Degree Student Christopher Cleary focused on citizen-based intelligence issues in his thesis *Strategy for Local Law Enforcement Agencies to Improve Collection, Analysis and Dissemination of Terrorist Information*.[66] Through the use of extensive case studies and literature reviews he surmised that

> …utilizing resources beyond those traditionally used in law enforcement, and integrating all available resources into an information sharing

[66] Christopher Cleary, "Strategy for Local Law Enforcement Agencies to Improve Collection, Analysis and Dissemination of Terrorist Information" Master's Thesis, U. S. Naval Postgraduate School, 2006, 21.·

> structure, local police departments can increase the amount of information that is collected…The information can then be used to produce home-grown terrorism intelligence which will be more relevant for local policing needs than the "all-purpose" intelligence passed down from State and Federal sources. It stands to reason that an enhanced level of local situational awareness would prove to be a powerful antiterrorist tool.

While it is widely agreed that the effort to empower and leverage communities assists in the intelligence and monitoring capabilities of police, the long-term phenomena seems to be the development of a culture of prevention, garnering of efficiencies, and building trust and social capital.

C. BUILDING A COST-EFFECTIVE CULTURE OF PREVENTION

Homeland Defense Journal author Ed Evans suggests that police-aligned citizens can create the environment that is hard for terrorists to operate in. In his article, "Operation Bold Tiger," Evans interviews Tennessee Homeland Security Director Jerry Humble, who explains that communities can greatly improve their prevention capabilities by utilizing citizens' eyes and ears to increase observations of suspicious behavior and activities. In the spirit of eliminating crime, Humble cites the highly successful partnership between law enforcement and citizens in the TV show "America's Most Wanted." In this show, "[Y]ou see local police at work with citizens. We've been doing it for years. We're just adapting our capabilities," said Humble.[67]

Humble goes on to suggest another worthy benefit: Through the use of the community policing model, communities struggling with limited money and manpower will be able to increase their capabilities, thus helping a department become more efficient and effective.

D. BUILDING TRUST

New York Times columnist Thomas Friedman observed in his book, *The World is Flat*, that "Without trust, there is no open society, because there are not enough police to

[67] Ed Evans, "Operation Bold Tiger," *Homeland Defense Journal* 3, no. 1 (January 2005), 28.

patrol every opening in an open society".[68] Similarly, the International Association of Chiefs of Police suggests that community intelligence programs cannot be effective without trust between parties because trust greases barriers to valid and timely communications.[69] Similarly, a lack of trust between parties causes friction, conflict and protective communication. On that topic, author Steven Covey says that "Low trust slows everything, every decision, every communication and every relationship."[70]

Trust-building is an important part of a policing cultural change that must occur in order to achieve results. Knowing this, the Coordinating Council for the International Association of Chiefs of Police set out to find ways to increase interpersonal communication, strengthen relationships, and help build trust between agencies and individuals who take part in the program. The council sought to create small, linked networks to develop higher levels of trust where technological solutions substituting for person-to-person efforts neutralize trust-building opportunities.[71]

In building and tending to these smaller linked community networks, police are providing a means for community participation where citizens can help police help themselves — a true win/win. RAND researchers posit that this style of collaboration enhances relationships and mutual understanding between community members and police. Ultimately, these relationships help solve community problems.[72] Social scientists suggest that communities who bank social capital though broad participation in communal improvement programs, such as community policing, actually experience very little crime.[73]

---

68 Thomas L. Friedman, *The World is Flat: A Brief History of the Twenty-First Century* (New York: Farrar, Straus and Giroux, 2005), 394.

69 AICP, Criminal Intelligence Sharing, 14.

70 Stephen M. R. Covey and Rebecca R. Merrill, *The Speed of Trust, The One Thing that Changes Everything* (New York: Free Press, 2006), xxv.

71 AICP, Criminal Intelligence Sharing, 14.

72 Glenn, "Training the 21st Century Police Officer."

73 Susan Saegert, Gary Winkel, and Charles Swartz, "Social Capital and Crime in New York City's Low Income Housing," *Housing Policy Debate* 13, no. 1 (2002): 218. http://fanniemaefoundation.org/programs/hpd/pdf/hpd_1301_saegert.pdf, (accessed August 11, 2007).

Amongst the community policing literature, one profound issue found broad concurrence: Partnerships between police and private citizens pay substantial dividends in post-9/11 America, where international and domestic terror groups have demonstrated a successful ability to integrate themselves into our society. The message in the literature is clear. The home front is much better served when citizens trust the police and are engaged in prevention of crime and terrorism. But if prevention measures fail or if natural disasters hit, a second type of volunteers — those serving with the first responders — would be called to service.

1. Citizen Corps

Citizen Corps, a component of USA Freedom Corps, has 2,250 member councils (serving approximately 75 percent of the U.S. population). They create opportunities for individuals to volunteer to help their communities prepare for and respond to emergencies by networking local leaders, citizen volunteers and the network of first-responder organizations.[74]

Citizen Corps has much in common with community policing. Each depends on the spirit of volunteerism to fill broad and sometimes complex roles uniquely suited to prevention and response missions. Unlike the community policing literature, Citizen Corps' theoretical material is very limited.

Training and maintaining volunteer first responders in the post-9/11 world is a priority for the United States. The U.S. Justice Department claims that "preparing for acts of mass violence has become an important priority for federal, state, and local officials…"[75] As such, the *National Strategy for Homeland Security* identifies citizens and first responders as key players in the concerted national effort that will win the war on terror.[76]

---

74 Department of Homeland Security, Citizen Corps, http://www.citizencorps.gov/ (accessed August 21, 2007).

75 U.S. Department of Justice, "Responding to Terrorism Victims Oklahoma City and Beyond," http://www.ojp.usdoj.gov/ovc/pdftxt/NCJ183949.pdf (accessed August 28, 2006).

76 Department of Homeland Security, *National Strategy*, 2.

Citizen Corps was developed through partnerships with pre-existing programs for the purpose of creating "well-trained, better-informed, and better-prepared citizens to take care of themselves and others during times of crisis — allowing first responders to address the most critical needs."[77] Because Citizen Corps is relatively new, there are relatively few sources available from which to draw findings, unlike the comprehensive research done on community policing.

However, *Homeland Security Presidential Directives* (HSPD) 5[78] and 8[79] do detail core concepts that give Citizen Corps its basis. They identify steps for coordination in response to incidents, describe the way federal departments and agencies will prepare for such a response (including prevention activities during the early stages of a terrorism incident) and "how" HSPD-5's goals and objectives should be implemented. These documents spell out the scope of Citizen Corps' duties, but it is HSPD-8 that gives DHS responsibility for the organization.

There have been shortcomings in this marco-level literature, however. Pamela Biladeau, for instance, laments in her master's thesis[80] that the five Citizen Corps programs do not have professional board or licensing standards. She cites problems associated with volunteers serving under parameters set by a lead agency. Under non-standard leadership, the program stays fragmented by the different needs of each state, local and tribal jurisdictions. Finally, she vigorously argues that DHS is shortsighted in simply encouraging participation with emergency response agencies. Encouragement alone, she posits, will not create a structure that will allow citizens to reach the appropriate level of preparedness needed for emergency responses or catastrophic incidents.

---

77 Department of Homeland Security, Citizen Corps web site.

78 The White House, Homeland Security Presidential Directive/HSPD-5 Management of Domestic Incidents (February 2003), http://www.fas.org/irp/offdocs/nspd/hspd-5.html (accessed September 10, 2006).

79 The White House, Homeland Security Presidential Directive/HSPD-8: National Preparedness (December 2003), http://www.fas.org/irp/offdocs/nspd/hspd-8.html (accessed September 10, 2006).

80 Pamela Biladeau, "Strengthening and Expanding the Citizen Corps" (Master's Thesis, U. S. Naval Postgraduate School, 2006).

While the literature here suggests that the nascent Citizen Corps organizational structures and principles leaves much more opportunity for research, the spirit and direction of the program are both viable and necessary

E. UNDERSTANDING SOCIAL NETWORKS FOR DEVELOPING MDA-INSPIRED NETWORKED COMMUNITIES

The field of complexity theory is of key interest in the study of social networks and should be considered a core element encouraged by proper CoP construction or management.

Random graph theory was brought into modern context in 1967 by Stanley Milgram, who argued that any two nodes within any sized network are separated by approximately six links.[81] Milgram found that a vast network will collapse upon itself and display a degree of separation between any two nodes that is significantly smaller than the total number of links in the network. Milgram's theory, therefore, supports the popular notion that any person is separated from any other person by no less than six links, or six degrees, of separation.

In 1973, Mark Granovetter introduced a social networking concept in his article *The Strength of Weak Ties*. In it he theorized that society is made up of dense clusters of tightly connected nodes of individuals. Some of these "nodes" have weak links to other clusters of individuals, which serve as bridges between these small worlds. These weak links prevent any cluster from becoming isolated. Further, he argues that sociological theory (in 1973) did not effectively relate micro-level interactions to macro-level patterns. He theorized that small groups aggregate to form large-scale patterns, and that these feed back into small groups.[82] Mark Buchanan suggests in his book, *Nexus: Small Worlds and the Groundbreaking Science of Networks,* that the aforementioned weak links

---

81 Alberto-Laszlo Barabasi, *Linked: How Everything is Connected to Everything Else and what it Means for Business, Science, and Everyday Life* (Cambridge: Perseus Books Group, 2003), 11. Found in Barry A. Compagnoni, "The National Response System: The Need to Leverage Networks and Knowledge," (March 2006), Naval Postgraduate School. 91.

82 Mark S. Granovetter, "The Strength of Weak Ties." American Journal of Sociology, 1973, 78 (May): 1360-1380, http://www.stanford.edu/dept/soc/people/faculty/granovetter/documents/TheStrengthofWeakTies.pdf, (accessed October 8, 2006).

between these nodes assume heightened significance because they tie a network of small worlds together,[83] thus setting the "small world" concept apart from a random network — one which has an equal likelihood of connecting any node to any other node.

In 1998, Duncan Watts and Steven Strogatz[84] theorized that, while maintaining the same degree of clustering within a network, the weak ties that span to other small worlds significantly shrink the diameter of the entire network, such that some nodes develop into network hubs. This concept has roots in the 80/20 Rule forwarded by economist Vilfredo Pareto, who observed that 80 percent of income in Italy was received by 20 percent of the Italian population in the early 1900s.[85] This suggestion helps, to some extent, explain how CoP might develop its inherent synergies, or that roughly 80 percent of network links are possessed by about 20 percent of the nodes.

Physicist Alberto-Laszlo Barabasi took this social network theory further, proposing the term *scale-free networks*. A scale-free network is a specific kind of complex network where some nodes act as highly connected hubs, although most nodes are of low degree. He argued that in many networks nodes possessed unequal numbers of links, essentially following what is known as the Power Law where just a few hubs possessed most of the links in the network. Specifically, this holds true, even if the number of nodes increases significantly, links between any two nodes negligibly increases.[86] Thus, the distribution of links under Power Law guidance will transform a random network into one which is "scale-free" — moving from a state of chaos (random) to one with a more orderly condition.

---

83 Mark Buchanan, *Nexus: Small Worlds and the Groundbreaking Science of Networks*, ed. Angela von der Lippe (New York: W. W. Norton & Company, 2002), 44. In Barry A. Compagnoni,, "The National Response System: The Need to Leverage Networks and Knowledge" (March 2006), Master's Thesis, Naval Postgraduate School.

84 Duncan J. Watts, *Small Worlds: The Dynamics of Networks between Order and Randomness*, ed. Philip W. Anderson et al., vol. 1 (Princeton, New Jersey: Princeton University Press, 1999). Found in Barry A. Compagnoni, "The National Response System: The Need to Leverage Networks and Knowledge," (March 2006), Master's Thesis, Naval Postgraduate School.

85 Wikipedia. Pareto Principle, Wikipedia, http://en.wikipedia.org/wiki/Pareto_principle (accessed October 8, 2006).

86 Wikipedia, Scale Free Networks, Wikipedia, http://en.wikipedia.org/wiki/Scale-free_network, (accessed October 9, 2006).

Growth of a given network becomes important here in that scale-free networks continuously grow and expand the number of nodes, whereas random networks stay constant. As Barabasi sums up network growth potential: "no matter how large and complex a network becomes, as long as preferential attachment and growth are present, it will maintain its hub-dominated, scale-free topology."[87]

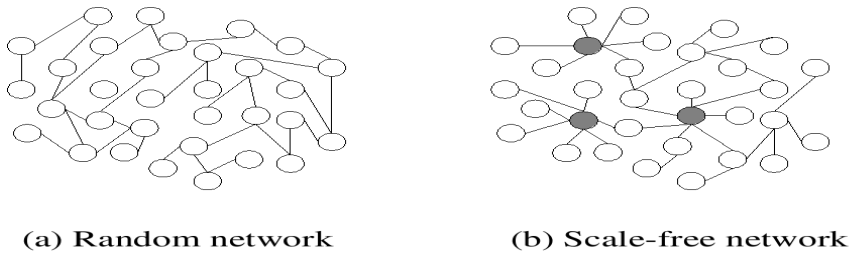


Figure 3. Network Types.

Research shows that social networks operate on many levels, from family units to the more complex level of nations. Social networks play critical roles in problem solving, operating organizations and, at the individual level, they help explain success or failures. Knowledge and utilization of social network organization is paramount to leaders who hope to leverage Arquilla-like scale-free networks where government leaders or key volunteers might act as critical nodes or hubs.

F. THE ROLE OF SOCIAL CAPITAL AND CIVIC ENGAGEMENT IN CULTIVATING NETWORKED COMMUNITIES FOR MDA

Social capital and civic engagement are often paired together in a chicken-and-egg-like explanation where each builds off the other. Carmen Sirianni and Lewis Friedland, editors of *The Civic Practices Network*, define social capital as "…those stocks of social trust, norms and networks that people can draw upon to solve common

[87] Barabasi, Linked, 91.

problems. Eric Lesser, an associate partner and researcher at IBM, claims that social capital is defined as a network of connections and relationships that are shared and exist within a common context.

Sociologist Pierre Bourdieu posits that the central proposition of social capital theory is that networks of relationships constitute a valuable resource for the conduct of social affairs through members with collectively-owned capital.

In *The Death and Life of Great American Cities*, Jane Jacobs provides an in-depth, qualitative view of the central importance of social capital to the survival and functioning of city neighborhoods. Specifically, she cites networks that provide strong, crosscutting personal relationships developed over time, providing the basis for trust, cooperation and collective action in such communities.[88]

Harvard Professor Robert Putnam, through a broad and thorough presentation of qualitative and quantitative methods in *Making Democracies Work*[89] and *Bowling Alone*,[90] built on Jacobs' work. He presented groundbreaking and compelling evidence that social capital was in decline over the generation leading into 9/11, as measured by a variety of indicators, such as participation in fraternal organizations, church-groups, labor unions, PTAs, and mainline civic organizations.

According to the Civic Renewal movement, networks of civic engagement, such as neighborhood associations, sports clubs and cooperatives, are an essential form of social capital, and the denser these networks are, the more likely those community members will cooperate for mutual benefit."[91] Networks of civic engagement, they posit, facilitate coordination and communication. This in turn creates channels through which information about the trustworthiness of other individuals and groups can be tested and

---

88 Jane Jacobs, *The Death and Life of Great American Cities* (London: Penguin Books, 1965).

89 Robert D. Putnam, *Making Democracies Work: Civic Traditions in Modern Italy* (Princeton, NJ: Princeton University Press, 1993).

90 Robert D. Putnam, *Bowling Alone: The Collapse and Revival of American Community* (New York: Simon and Schuster, 2000).

91 Civic Renewal Network, http://www.cpn.org/tools/dictionary/capital.html (accessed September 4, 2006).

verified. Significantly, they suggest that healthy collaborative networks embody past success that evolve as cultural templates for future collaboration on other problems.

G. A PRAGMATIC APPROACH – CAPITALIZING ON SOCIAL CAPITAL

Sidney Verba's 1995 study of civic volunteerism interviewed more than 15,000 Americans about their civic and organizational lives, presenting data that is consistent in its findings with Putnam's, but also presenting evidence that civic participation had modestly increased at the level of community and local problem-solving activities. Verba offered little guidance, however, on how to enhance civic participation.[92]

Putnam did attempt to explain the relationships between community citizen engagement and government performance. He suggests that social capital has significant political consequences, such as the promotion of political participation and healthy democratic government. Notably, he argues that the challenge of restoring civic engagement would be eased by a war, natural disaster or other crisis where citizens tend to lend assistance or support others. He found that, up until 9/11, citizen participation had been in a long decline, but, in the wake of 9/11, more Americans are now more inclined to re-engage in their communities.[93]

After 9/11, Putnam characterizes Americans as "…more united, readier for collective sacrifice and more attuned to public purpose…a window of opportunity has opened for a sort of civic renewal that occurs only once or twice in a century…"[94] While his groundbreaking, longitudinal survey work cut across a diverse spectrum in describing social movements, he stops short of recommending advantageous avenues for government to capture the civic momentum created by the 9/11 "window of opportunity."

Professors John and Mary Kirlin cite the disturbing gap between American's attitudes (trust in national government up 44 percent post-9/11) and behaviors

---

[92] Sidney Verba, Kay Schlozman, and Henry Brady, *Voice and Equality: Civic Voluntarism in American Politics* (Cambridge, MA: Harvard University Press, 1995).

93 Putnam, Bowling Alone & Robert Putnam, Lewis Feldstein, Better Together: Restoring the American Community (Simon & Schuster, NY, 2003).

[94] Robert D. Putnam, "Bowling Together" *The American Prospect* 13 no. 3, (February 11, 2002), http://www.prospect.org/print/V13/3/putnam-r.html (accessed September 10, 2006).

(attendance at a political meeting up 1 percent post-9/11) in building on Putnam's "window of opportunity" theory.[95] While their broad findings agree with Putman's — that motivation, skills and network connections contribute to increased civic engagement — they lament that the government's responses to 9/11 have not adequately engaged the public during this rare widow of opportunity.

They insist that the government must provide the institutional context for societal action to include "sustained commitment to combating terrorism."[96] They forward the notion that increased civic engagement strengthens democracy and that it can contribute to the development of public judgment, which is critical to sustaining support of efforts to thwart terrorism. As much as the Kirlins bring a galvanizing twist to Putnam's research, they both agree with his observations that "though the crisis revealed and replenished the wells of solidarity in American communities, those wells so far remain untapped."[97]

Collectively, these authors and sources propose that social capital and civic engagement are important factors in cultivating healthy communities through communication, trust building, community participation and problem solving. These four factors are of the utmost importance for government leaders to both understand and develop if they hope to build and maintain a useful networked community.

H. THE ROLE OF COMMUNITIES OF PRACTICE IN SHAPING NETWORKED COMMUNITIES FOR MDA

Citizens who belong to an organization and work toward a common goal through informal associations or networks are often defined as communities of practice. According to Brown and Duguid,[98] *communities of practice* is the context in which work takes place. They argue that "canonical" or rule-based conventional structures devised to follow organizational processes are not suitable for the spreading of knowledge on non-

95 John J Kirlin and Mary K. Kirlin, "Strengthening Effective Government-Citizen Connections through Greater Civic Engagement," *Public Administration Review*. 62, (September 2000): 80-85.

96 Ibid., 84.

97 Putnam, "Bowling Together," 1.

98 John Brown and Paul Duguid, "Organizational Learning and Communities of Practice: Toward a unified view of working, learning, and innovation," *Organizational Science* 2, no. 1 (1991): 40–57.

canonical or undefined emergent issues. Instead, the organization should see itself as a part of a community-of-communities, knowing that there are networked collections of non-canonical communities in their midst.[99]

A community of practice is an intrinsic condition for the existence of knowledge, not least because it provides the interpretive support necessary for making sense of its heritage.[100] Julian Orr argues that these communities communicate with each other through a complicated web of personal networks — smaller, frequently overlapping groups comprised of people who know, have worked with and trust each other.[101] He adds: "A Community of Practice is an informal network of people engaged in a particular profession, occupation, or job function who actively seek to work more effectively and to understand their work more fully."[102]

Examples in the maritime community might include advocates for marine mammal safety, pollution clean-up response networks or conservation groups working to limit suburban sprawl along the shore.

Dr. Etienne Wenger, the foremost expert on CoP, suggests that an organization can be seen to consist of numerous, often overlapping, but rarely formally recognized communities of practice in an informal structure that exists in parallel with more formal forms of organization. Further, the individuals participating must perceive they belong to a network within a common context, where members have a shared interest or understanding of issues facing the organization.[103] Over time, participants may develop a sense of oneness or social identity with the group.

---

99 Cristian Bogdan and Ovidiu Sandor,"Hand in hand: Sustainability of System and Community Practice in Knowledge Support," Position paper for the CSCW 2004 workshop "Conversations with the Past: Community, Technology and Interpretation in Long-Term Knowledge Management" http://www.wmstubblefield.com/cscw/papers/Bogdan.pdf (accessed August 21, 2007)..

100 Jean Lave and Etienne Wenger, *Situated Learning: Legitimate Peripheral Participation* (New York: Cambridge University Press, 1991).

101 Julian Orr, *Talking about Machines: An Ethnography of a Modern Job* (Ithaca, NY: Cornell University Press, 1996).

102 Ibid.

103 Eric Lesser, "Communities of practice and organizational performance," *IBM Systems Journal* 40, no. 4 (2001): 831–842.

Wenger argues that such communities are emergent structures that attract people driven by the need for content and relationships that cannot be contrived and brought into existence through managerial dictum.[104] He suggests that CoPs merge tacit and explicit knowledge of the collective through socialization, ultimately transcending traditional structures and boundaries of an organization. This can often be observed in value-added volunteer organizations such as "Friends of the Aquarium" or "Save the Ocean," social or political movements bent on pushing legislation.

Based on the theory of local or situated learning proposed by Lave and Wenger,[105] communities of practice are capable of building or sharing capabilities, skills and will. They suggest that when experts show their faces in a community and engage others struggling with similar challenges, solving unique situations or issues may be less daunting. For the Coast Guard, these relationships can provide a living repository for ideas on environmental nuances, information about vessel patterns or unusual traffic, and directories of local maritime experts who have wide-ranging resources or knowledge that maritime leaders might need.

While the findings in CoP literature offers a convincing model for tapping broad talents and interest groups, it is important to note that the practices identified in the literature fell overwhelmingly into for-profit business or leisure practice case studies. While the opportunities for employing the CoP lessons learned hint at great potentials within government — or, more specifically, homeland security practices — the available literature lacks substantial evidence that these methods would reap rewards in an environment where motivations for process improvement or innovation are clearly different from the incentives resting on a business's bottom line, or the personal rewards or growth offered via leisure endeavors.

---

104 Etienne Wenger, "Communities of Practice: The organizational frontier," *Harvard Business Review* 78, no. 1 (January/February 2000): 139–146.

105 Snyder and de Sousa Briggs, "Communities of Practice," 11.

THIS PAGE INTENTIONALLY LEFT BLANK

III. COMMUNITY OF PRACTICE STRUCTURAL COMPONENTS

One of the core purposes of this thesis is to identify useful attributes of a homeland security-oriented virtual-networked community and match them against traditional Community of Practice constructs through a set of "community dimensions." The dimensions, derived from related and relevant academic CoP research, as applied to MDA. Communities of Practice, may be understood in terms of the community itself or "the Who," the Domain or "the What" and the Practice or "the How." Using the Wenger et al. (1998) tri-partite framework of community, domain and practice, the following is a synthesis of key CoP dynamics identified in the literature.

- ***Domain*** is the shared learning agenda — how knowledge is organized — and determines what the goals or objectives of the community are. This construct was measured using two supporting variables: *Goal Clarity and Mutual Understanding.*
- ***Community*** is the network's shared social fabric. It operates as a filtering mechanism that defines organizational connections, relationships and a common context and language. This construct was measured using three supporting variables: *Social Identification, Trust (Social Capital)* and *Access to Parties.*
- ***Practice*** is a baseline of common knowledge, approaches, standards, rules, metrics and how knowledge is shared. This construct was measured using a single variable as emphasized in the national strategy literature: *Vigilance.*

The following table aligns the CoP relationships and provides relevant social science theory and hypothetical impact on a networked community.

Structural Components	CoP Attribute	Impact on a Networked Community
Domain The domain creates common ground and a sense of common identity. A well-defined domain legitimizes the community by affirming its purpose and value to members and other stakeholders. The domain inspires members to contribute and participate, guides their learning, and gives meaning to their actions. The domain guides the questions they ask and the way they organize their knowledge.	**Goal Clarity** Larson and LaFasto (1989) stress the importance of a clear and elevating goal in the performance of an effective team. They define goal clarity as "a specific performance objective, phrased in such concrete language that it is possible to tell, unequivocally, whether that performance objective has been attained"[106]	Increased levels of goal clarity. Research recommends that team members must have clear roles and accountabilities. Lack of goal visibility may cause team members to feel less accountable for results, making the delivery/sharing of information, member direction, feedback and communications of heightened importance for teams.
	Mutual Understanding Sharing of cognitive elements of knowledge among team members.	Increased sharing of cognitive elements of knowledge sharing…. Analysis reveals that oversight expertise/coordination shows a strong relationship with team performance that remains significant over and above team input characteristics, presence of expertise and administrative coordination.
Community A group of people who interact, learn together, build relationships, and in the process develop a sense of belonging and mutual commitment. Members use each other as sounding boards, build on each other's ideas, and provide a filtering mechanism to deal with knowledge overload. Over time, they build a sense of common history and	**Social Identification** Organizational identification concerns the perception of "oneness" with an organization.[107]	Higher levels of social identification…. The construct has firm roots in social identity theory; Tajfel defined it as the "cognition of membership of a group and the value and emotional significance attached to this membership"[108]
	Trust (Social Capital) Relational view of social capital is embedded in trustworthiness, reliability and institutionalized collective endeavor[109]	Higher levels of social capital ….. Relational view within a network such as CAN suggests that social capital is embedded in trustworthiness, reliability and institutionalized collective endeavor. It has been suggested that this is precisely what gives social networks their value in monitoring others' actions.

[106] Carl E. Larson and Frank M. J. LaFasto. *Teamwork: What must go right, what can go wrong*. (Newberry Park, CA: Sage, 1989). 28.·

[107] B. E. Ashforth and F. Mael, "Social identity theory and the organization," *Academy of Management Review* 14 (1989): 20–39.

[108] H. Tajfel, "The achievement of group differentiation" *Differentiation between social groups: Studies in the social psychology of intergroup relations*, ed. H. Tajfel (London: Academic Press, 1978), 63.

identity, thus becoming the community's social fabric. Leadership in a community may be very diverse, including community organizers, experts, pioneers, administrators and boundary spanners. Leadership roles must, however, have internal legitimacy in the community.	**Access to Parties** Access to parties refers to the opportunities to make knowledge combination and exchange among team members.[110]	This measure refers to the opportunities to make knowledge exchange among team members as well as provide knowledge combination (the integration of several codified areas of knowledge) services to membership.
Practice Denotes a set of socially defined ways of doing things in a specific domain: a set of common approaches and shared standards that create a basis for action, communication, problem solving, performance, and accountability.	**Vigilance** Researchers describe vigilance as being in a wide-aware state and open for several different perceptions.[111]	This Vigilance variable was derived from The National Plan to Achieve Maritime Domain Awareness which attests that "there are few areas of greater strategic and vital importance" than the nation's oceans and waterways. It claims that our nation's waterways present "a broad array of potential" terrorist targets which could inflict mass casualties or cause significant economic harm. The plan emphasizes and recommends broad awareness and threat knowledge as an effective measure for prevention, deterrence and interdiction. The plan highlights the need for *all* members of a Global Maritime Community, which includes citizens, to have an *effective* understanding of maritime activities, garnered through persistent *vigilance*, to allow for maximum detection, deterrence and interdiction opportunities.

Table 1. CoP Relationships.

109 Robert M. Solow, "Notes on Social Capital and Economic Performance." *Social Capital: A Multifaceted Perspective*, eds. Partha Dasgupta and Ismail Serageldin (Washington, DC: World Bank, 2000), 6–10.

110 J. Nahapiet and S. Ghoshal, "Social Capital, Intellectual Capital, and the Organizational. Advantage" 22, no. 2 (1998): 242–266.

111 C. Grillon et al., "Darkness facilitates the acoustic startle reflex in humans," *Society of Biological Psychology* 42 (1997): 453-460.

THIS PAGE INTENTIONALLY LEFT BLANK

IV. METHOD

A. SAMPLE SELECTION

Information was drawn from participants in the Coast Guard's Citizen's Action Network, an MDA-style program used in Oregon, Washington, and Vancouver, B.C. The information was collected via a telephonic survey administered to 191 citizens who were enrolled in the Citizen's Action Network. Unfortunately, responses from nine participants were lost due to a computer problem and, due to time constraints, the surveys were not administrated a second time. Thus, the original sample of 191 represents 100 percent of the membership contacted who were available (answered the phone or called back during the two-week survey period) from a total population of 208 U.S. members. This gave the study a 91.8 percent response rate but, due to the loss of data, an effective 88.4 percent response rate.

B. INSTRUMENT

The survey instrument was designed via exact or derivative questions modeled from key social science and psychology research, as cited previously and in line with suggestions forwarded in Paul Leedy and Jeanne Ormrod's *Practical Research Planning and Design,*[112] as well as L. R. Gay and P. Airasian's *Educational Research; Competencies for Analysis and Application*.[113] Although concepts, constructs and variables of CoP literature were emphasized in the survey, the questionnaire included constructs designed to capture citizen engagement, citizen affect, demographic and qualitative materials as well. Most of these findings will be reviewed in the discussion section.

---

112 Paul D. Leedy and Jeanne Ellis Ormrod, Practical Research Planning and Design, 8th ed. (Upper Saddle River, NJ: Merrill/Prentice Hall, 2004) Ch. 7.

113 L. R. Gay and P. Airasian, Educational Research; Competencies for Analysis and Application, 7th ed. (Upper Saddle River, NJ: Merrill/Prentice Hall, 2000) 113.

C. QUESTIONNAIRE PREPARATION AND DELIVERY

A team of three master's level Department of Homeland Security-sponsored interns administered the phone surveys to the target audience spending approximately twenty-five to thirty-five minutes with each participating CAN member.

A three-person team received training and practice in telephonic survey delivery methods in line with Paul Leedy and Jeanne Ormrod's *Practical Research Planning and Design* suggestions.[114] Each was given a script, thus ensuring consistency in the opening and closing of the survey.

Approximately one week before delivering the questionnaire, letters and e-mail messages were sent to all prospective respondents, alerting them that the Coast Guard would soon be calling them for their assistance with the questionnaire, thus further underscoring the importance of their participation.

Finally, survey phone deliveries were routinely monitored by the thesis author to ensure consistency and quality. This effort resulted in, among other QA issues, the dropping of a question from the *Expertise Location* portion of the survey because it was too confusing for most participants.

D. DATA ANALYSIS

With the help of SPSS software, a full analysis of the data was gleaned from the sixty-three-question survey. One and two-way analysis of variance and multiple regression analysis were used to evaluate the relationships among and between variable indices making up five CoP, one civic engagement and one civic efficacy constructs as applied to CAN.

Further, the survey was constructed with multiple questions designed to measure CAN members' citizen engagement and citizen affect. The construct for the survey questions for these measures were either derivatives of other published social science studies or exact copies of survey questions promulgated by Americorps, a national-level

[114] Leedy and Ormrod, Practical Research Planning.

community service organization. The intent here was to provide a baseline of other citizen engagement or affect data from which CAN responses might be measured against; the differences in samples could provide rich opportunities for further research.

THIS PAGE INTENTIONALLY LEFT BLANK

V. ANALYSIS

CAN is comprised of U.S. and Canadian civilians, Coast Guard Auxiliary, business owners, non-profit organizational leaders and tribal members who live on or near the water and have a commanding maritime view. Members have volunteered, signed up, to make themselves available day or night to assist in reporting real-time information from members' locations along thousands of miles of sparsely populated seashores, rugged rivers and complex waterways. The Coast Guard calls out directly to citizens to have them identify sources of marine flares, on-scene weather, establish lookouts or corroborate any other MDA-inspired information. The members' locations are maintained in a centralized C2PC database and are viewed by Coast Guard watch standers as operational assets within their computer-based, common operating picture. The CAN program has been credited with saving lives, property and agency funds. A review of outcomes is available in the thesis' annex.

A. DEMOGRAPHICS

Survey respondent demographics were as follows: 138 males and forty-six females; the mean age was sixty-five; 180 respondents were U.S. citizens; four were Canadian citizens living in the United States; thirty were members of the United States Coast Guard Auxiliary, while exactly half, ninety-two were U.S. military veterans; forty-eight were business owners and ninety-seven were members of non-profit organizations. The average member had been part of the network for just over two years, with three of the longest-term members reporting having been in CAN for more than seven years.

B. COMMUNITY OF PRACTICE, COMMUNITY ENGAGEMENT AND COMMUNITY EFFICACY VARIABLES APPLIED TO CAN

The following describes how the study's CoP-inspired variables — Social Capital, Social Identity, Goal Clarity, Access to Parties, Expertise Location, Trust-based Social Capital and Vigilance, as well as two community-based variables, Civic Engagement and Civic Affect — were analyzed within the CAN program.

Many social science professionals, as a rule of thumb, require a Cronbach's Alpha/Reliability score of 0.70 or higher.[115] Cronbach's alpha is viewed as a measure of how well the sum score of the selected items capture the expected score for the larger domain, even if that domain is heterogeneous.

Further, I analyzed each set of variables for the univariate analysis (mean, variance and range) to explore each separate variable in the dataset and to identify and summarize the pattern of response.

1. Goal Clarity Index

Goal Clarity is the CoP Domain component that determines how well a community understands the goals and/or objectives of the community.

The Goal Clarity measure rated a Cronbach's Alpha/Reliability score of .795, the third highest among CoP index measures with a mean of 3.35. The two questions supporting this measure were based on CAN members understanding the Coast Guard's mission, as well as members understanding the associated all-hazard threats in the maritime environment.

	N	Minimum	Maximum	Mean	Std. Deviation	Alpha	Variance
Goal Clarity	183	1.00	5.00	3.3579	1.32247	.795	1.749

Table 2. Goal Clarity Index.

CAN members are dependent on their Coast Guard sponsors to provide clear information and expectations of roles for each member. Without constant communication, rich in explicit information and direction on mutually important issues, members might feel less accountable.

The relationship of goal clarity to vigilance has theoretical precedence in virtual team theory. The following appeared in the *Journal of Management Information Systems*:

[115] Cronbach's Alpha, Wikipedia, http://en.wikipedia.org/wiki/Cronbach's_alpha (accessed June 18, 2007)

> First, team members must have clear roles and accountabilities. Lack of visibility may cause virtual team members to feel less accountable for results, therefore explicit facilitation of teamwork takes on heightened importance for virtual teams. Temporal coordination mechanisms such as scheduling deadlines and coordinating the pace of effort are recommended to increase vigilance and accountability.[116]

The article supports goal clarity as a predictor of vigilance, albeit in a different theoretical context. In terms of visibility, CAN members' actions are highly visible to the Coast Guard via their hub-and-spoke distribution model. In terms of explicit facilitation, CAN members receive routine Coast Guard phone calls instructing them on what to be on the lookout for and why it is important. Additionally, by providing exclusive information only available to the network, the Coast Guard seems to be generating a sense of exclusivity and importance, thus generating attentiveness to the information.

The following list is derived from the *National Plan to Achieve Maritime Domain Awareness*' integration dataset. CAN's leadership utilizes this list to clarify details to members who have been called upon to provide information supporting the goal clarity dynamic being reviewed here. Also, CAN's training material highlights aspects of this national list to encourage clear, detail-rich information gathering and reporting:

> • Vessels – Characteristics such as flag, type, tonnage, speed, origin and track.
>
> • Crews and passengers - How many on board?
>
> • Maritime Areas of Interest – Focus of surveillance capabilities at particular geographic points such as sea lanes, bridges or oceanic regions.
>
> • Ports – Waterways and facilities; port terminals, piers, cranes, petrol facilities and other structures.
>
> • The Environment – Weather, currents, natural resources, fish stocks and marine mammals.
>
> • Maritime Critical Infrastructure – Transportation nodes, bridges and undersea fiber optic cables and pipelines.

---

[116] Anne P. Massey, Mitzi M. Montoya-Weiss, and Yu-Ting Hung, "Because Time Matters: Temporal Coordination in Global Virtual Project Teams," *Journal of Management Information Systems* 19, no. 4 (2003): 129–155.·

• Threats and Activities – Identified threats and inherently dangerous activities such as illegal migration, drug smuggling or thefts.

• Friendly Forces – Operational information supporting search and rescue, oil spill identification or off-station aids to navigation.

Academics argue that because CoPs are not generally mandated, the primary reason they exist is due to their perceived value amongst the group. Therefore, whenever possible, they argue that leaders must focus and connect the social network to the value they bring or produce in support of the larger goal or mission.

2. Mutual Understanding Index

The Mutual Understanding measure rated a Cronbach's Alpha/Reliability score of .710, the second highest in the survey, and a mean of 2.877. The three questions that supported this measure were based on CAN members' beliefs that the Coast Guard both understood and utilized their individual skills. This variable supports the CoP Domain component, which, in turn, determines the goals or objectives of the community.

	N	Minimum	Maximum	Mean	Std. Deviation	Alpha	Variance
Mut Understanding	180	1.00	5.00	2.8778	1.08937	.710	1.187

Table 3. Mutual Understanding.

The high Mutual Understanding measure is supported by the fact that CAN's two-way participatory activities encourage government–citizen engagement fostering a mutual understanding of environmental, threat and tactical response capabilities. In both concept and function, members actively provide for their own and others' safety or security from the comfort of their home or business, while the Coast Guard and its partner agencies reap the benefits of having an informed, supportive and service-connected public to turn to for immediate field feedback. This type of mutually beneficial relationship or symbiotic understanding builds social capital and social identity with a networked community.

CoP research suggests that mutual understanding is enhanced when leaders invite and continuously encourage broad and different levels of organizational interests to apply themselves or participate in an organization's mission. Supporters have a tendency to include three layers of committed members, which can be visualized using concentric circles.117 Researchers argue that the largest group, the outer circle within this interdependent relationship, is often the least connected, but still very valuable. The theory suggests that these members should be allowed to participate at their comfort or capability level. The connection between the Coast Guard and its CAN citizens participating from a distance parallel this aspect of CoP. Further, CoP research suggests that leaders employ tactics to build on the least-connected group's insights, and design or introduce appealing activities such as providing private/custom chat rooms on a website. This approach could include both sharing of ideas as well as hands-on projects to add vitality to CoPs. Although CAN has an interactive website, it was not available until after the survey. So, while members did not participate in an interactive on-line environment, members engaged in real-world activities that required problem solving and communication skills in diverse and often exciting situations.

While the Mutual Understanding measure garnered a mean of 2.87, the relatively low ranking might be reflective of a lack of broad interactive interactivity. Specifically, at the time of the survey, CAN relied on only one-to-one partnering (Coast Guard to citizen) during emergent situations where each member assumed a role in tackling the same task or challenge. While all members received news and information of some sort, only about half had ever actually been called for assistance on a case, despite all members volunteering to receive calls. These aspects of CAN might have impacted the survey's Mutual Understanding measure.

3. Social Identification

The Social Identification measure rated a Cronbach's Alpha/Reliability score of .800, the second highest in the survey, and a mean of 3.78. The four questions that supported this measure were based on CAN members' belief that they belonged to the

117 Wenger, "Communities of Practice," 139-146.

larger Coast Guard team, or were integrated into the Coast Guard's all hazards missions. This variable supports the CoP Community component, which acts as the social fabric, defines relationships, and offers a common context and language within the network.

	N	Minimum	Maximum	Mean	Std. Deviation	Alpha	Variance
Social ID	184	1.00	5.00	3.7813	.91327	.800	.834

Table 4. Social Identity.

CAN components supporting high levels of Social Identification include: the fact that every CAN member lives on, or near enough to, a waterway or beach to have intimate knowledge of both the marine environment and the Coast Guard organization. The average CAN member has been in their community for nearly seventeen years, and 3thirty of the CAN members are in the Coast Guard's uniformed volunteer arm called the U.S. Coast Guard Auxiliary.

Further, in that the Coast Guard calls on CAN members to support its all-hazards missions, CAN members are exposed to a variety of maritime threat scenarios that involve working directly with the Coast Guard. Essentially they *ARE* part of the mission, thus building on feelings of identifying with the service. This process might also be grooming CAN members to identify with rather unknown aspects of the Coast Guard mission set, like ensuring buoys are positioned correctly after a gale, thus enlightening members to appreciate the Coast Guard's diverse mission set.

Social identity might be further strengthened when members are sent routine news releases or notices announcing breaking or emergent marine issues. Members are also called directly from Coast Guard dispatch offices to garner assistance, which directly supports those missions happening in member's regions. While CAN volunteers are only asked to scan and report case-related information (sinking vessel, oil spill sheen, suspicious vessel), the one-to-one relationships adds validity to the notion of social identification with the Coast Guard as they participate as part of a team.

Additionally, new members are sent signed welcome letters and are visited by a local Coast Guard Auxiliary member to welcome them, provide training and pass along pertinent information, further adding to the notion of oneness with the Coast Guard.

Researchers cite that CoPs often suffer from too much focus on public (all inclusive) events. They propose going the extra mile in establishing and strengthening one-on-one relationships. Strong individual relationships strengthen the CoP. This seems to be true within CAN, as all of its activities, structure and survey measures support strong Social Identity scores.

4. Trust/Social Capital

The Trust/Social Capital measure rated a Cronbach's Alpha/Reliability score of .182, the lowest amongst all CoP measures in the survey, but the index featured the highest mean among all CoP and CE measures, totaling 4.47. This low CA/Reliability rating was factored despite the Trust measure containing the two highest means of individual variables in the survey at 4.9 and 4.86 on five-point scales. These right-skewed "curves" suggest that this measure is indeed very strong. Its statistical presentation as a non-normal right-skewed curve, however, could have contributed to the Cronbach's Alpha not meeting the high standard, despite the survey questions themselves coming directly from highly reliable social science sources, such as from Putnam's Social Capital surveys.

The questions and their associated means (based on a five-point scale) are presented here for review:

- Most people in the CG are basically honest and can be trusted. 4.9076
- I would pay attention to the opinions of others in the CAN network if they were made available to me. 4.3587
- Most people in the Coast Guard are willing to help if you need it. 4.8696
- I feel accepted as a member of the CAN team. 3.7717

With the high means, we can assume that CAN program membership supports the CoP Community component, which acts as the social fabric, defines relationships, and offers a common context and language.

David Halpern, author and Senior Policy Advisor in the British Prime Minister's Strategy Unit, calls social capital "our networks and norms of trust and reciprocity."[118] Robert Putnam connects trust and social capital in his book, *Bowling Alone.* He refers to the social capital as the collective value of all social networks and the inclination that arises from these networks to support one another. Moreover, he claims that social capital is a key component for maintaining a healthy democracy. Conversely, he correlates losses in social capital with lower levels of trust in government. Francis Fukuyama, author of *Trust: The Social Virtues and the Creation of Prosperity,* makes a core argument that there are high-trust and low-trust societies and cultures, and that high-trust groups and cultures accumulate greater social capital. This suggests that networked communities may also benefit from activities that generate higher levels of trust. Other research has emphasized social capital as a key for problem solving,[119] with interpersonal trust being both useful and a desirable enabler.[120]

	N	Minimum	Maximum	Mean	Std. Deviation	Alpha	Variance
Trust	184	3.00	5.00	4.4769	.42603	.182	.181

Table 5. Trust Based Social Capital.

118 David Halpern, "A Matter of Respect," Prospect Magazine (July 2005), http://www.prospect-magazine.co.uk/article_details.php?id=6936 (accessed August 20, 2007).

119 C. Sirianni and L. Friedland, "Civic innovation and American democracy. Civic Practices Network," Civic Renewal Movement, http://www.cpn.org/crm/essays/innovation.html (accessed August 20, 2007).

120 Carl L. Bankston III and Min Zhou, "Social Capital as Process: The Meanings and Problems of a Theoretical Metaphor," Sociological Inquiry 72, no. 2 (Spring 2002): 285–317.

5. Government, Trust and the Coast Guard

A 2005 Harris Poll revealed that only 27 percent of those surveyed trust the government.[121] But, as a government agency, the Coast Guard has generally rated very high in trust measures.[122] This is especially true in the wake of the 2005 hurricane season where the Coast Guard rescued or assisted over thirty-three thousand citizens in the Gulf region, while FEMA, the State of Louisiana and the city government of New Orleans faltered. However, recent foibles with the Deepwater Program, and its massive waste and fraud sidebars, have recently eroded some of the Coast Guard's public esteem.[123]

Despite the trends in public opinion about the Coast Guard over the years, the close participatory relationships CAN members have with the agency have seemingly allowed the Coast Guard to maintain across-the-board high levels of trust — and the social/organizational benefits that go along with it — within CAN participants.

6. Access to Parties

The Access to Parties measure rated a Cronbach's Alpha/Reliability score of .844**,** highest amongst all CoP survey measures, and a mean of 2.89. The four survey questions focused on how CAN members believed they communicated with Coast Guard leaders and the substantive value of the information received. This is the final of three variables designed around the CoP Community component.

---

121 The Harris Poll, "Fewer Americans Than Europeans Have Trust in the Media – Press, Radio and TV" (January 13, 2005), http://www.harrisinteractive.com/harris_poll/index.asp?PID=534 (accessed August 20, 2007).

122 This result was found in a national, population-representative study of 2,250 American perceptions concerning the threat of terrorism. The item of a particular interest was the examination of the lack of confidence in government organizations; fewer than 5% of the country had "lost confidence" in the Coast Guard, the lowest rating of dissatisfaction observed. Jim Breckenridge, e-mail message to author, July 23, 2007.

123 Olympia J. Snowe, speaking before the Oversight Hearing on Recent Setbacks to the Coast Guard Deepwater Program, Wednesday, February 14, 2007, "I know you share my alarm over the troubling pattern of mis-management that the New York Times and the DHS Inspector General has [sic] discovered, and it is indisputable we must restore accountability to the Deepwater program for the sake of our critical Coast Guard service and our homeland security. Because I'm deeply troubled that this mis-management is not only a breach of trust with the American people, but has also undermined a program that is so vitally important to our future."
http://commerce.senate.gov/public/index.cfm?FuseAction=Hearings.Statement&Statement_ID=228, (accessed June 18, 2007).

	N	Minimum	Maximum	Mean	Std. Deviation	Alpha	Variance
Access to Parties	184	1.00	5.00	2.8913	1.18543	.844	1.405

Table 6. Access to Parties.

CoP research suggests that leaders maintain an open dialog between those on the inside of an organization and those on the outside. This builds on the notion that leaders understand that those close to any issue might not have the best solutions. They stress that leaders need to move away from the business center to get a better perspective; they should bring in players who hold a periphery or secondary commitment to the issue, goal or mission.

CAN's reliance on a hub-and-spoke style of communications as its cornerstone component portends well for a high level of Access to Parties measurement. Further, the routine information exchange that takes place between members and the Coast Guard suggests members will have supportive opinions of the interaction. As part of the direct communication measure, sixty-five CAN members reported receiving 133 calls from the Coast Guard. One hundred and twenty nine had received routine CAN news and information while seventy-three had received at least one CAN newsletter (note: some members opted not to receive electronic information). A full breakdown of these and other measures is available in the appendix.

In the spirit of access, the Coast Guard produces at least one message a week for the network. This information always includes a source name, e-mail and contact phone number that CAN members can reach with more questions or suggestions. Further, CAN members routinely call in observations of potential problems that might not have been identified by the Coast Guard's traditional MDA sensors. This two-way information exchange seemingly supports CAN members' positive feelings about networking with the Coast Guard and, indirectly, among other team members.

CAN members are alerted to maritime challenges, news and breaking information via the Thirteenth Coast Guard District's Internet-based information delivery system. As

a specific demographic within the system (broken down by zip code, for instance) CAN members receive information from the Coast Guard, RCMP and other DHS, state and local agencies about critical maritime-related items that they might not have otherwise received via traditional mass-media sources.

7. Vigilance

This study's Vigilance measure rated a Cronbach's Alpha/Reliability score of .733, making it the fourth highest amongst CoP survey measures, while the mean was 3.91, the second highest among all CoP index measures. The three-question vigilance index is the lone measure supporting the Practice component, the "what" or "what is done" portion of a CoP.

	N	Minimum	Maximum	Mean	Std. Deviation	Alpha	Variance
Vigilance	184	1.00	5.00	3.9167	1.04207	.733	1.086

Table 7. Vigilance.

The vigilance-based questions making up the index highlight three parts of vigilance. The first survey question suggests an understanding of the domain itself: "My understanding of maritime threats has increased since becoming a CAN member." The second survey question highlights a CAN members' *state of being*: "I am more vigilant (on the lookout) for unusual activity on or around the water since becoming a CAN member." The third question, "I'm more likely to report unusual activity on or around the water since becoming a CAN member," stresses a member's vigilance-based behavioral potential.

The vigilance index was used as the study's dependent variable as it represents the recommended state-of-being for post-9/11 citizens as suggested by national policy, planning and other governmental messages. Consider, for instance, this passage from the State of the Union address delivered in 2002:

> Homeland security will make America not only stronger, but, in many ways, better…And as government works to better secure our homeland, America will continue to depend on the eyes and ears of alert citizens. A few days before Christmas, an airline flight attendant spotted a passenger lighting a match. The crew and passengers quickly subdued the man, who had been trained by al Qaeda and was armed with explosives. The people on that plane were alert and, as a result, likely saved nearly 200 lives. [124]

It is within these passages, designed for a national audience and delivered in the heady weeks after the 2001 attacks, the president not only suggests vigilance as a tool for Americans, but summarily stresses its place with homeland security, and then provides an example. Clearly, homeland vigilance during the GWOT is a valid measure for this citizen-based thesis. Vigilance is used as the dependent variable in the next section, which will explore vigilance prediction.

Within CAN, vigilance is stressed via introductory training, via news and information that is sent directly to members and via phone calls from the Coast Guard requesting assistance with its myriad missions. Coast Guard training materials pay specific attention to situational variables, highlighting the most vulnerable maritime domain infrastructure and their associated threats. The following is an example of a training scenario offered to CAN members, which strengthens the network's ultimate goal:

> You work in a business in the immediate vicinity of a ferry terminal, and you ride the ferry to and from work everyday. One day you observe a particular person taking pictures of the shore side — unusual for people riding the ferry during "commute time." While at work you notice the same person board a ferry to a different destination, and return a few hours later. The next day you see the same person loitering around the terminal as passengers pass through security while boarding ferries — at one point the person joins a group lining up to board a ferry, takes some pictures, but leaves the group without boarding. During the day you see this person making two round-trip ferry rides — once wearing a large back pack, and once carrying an oversized brief case. Over several days you notice the same person engaged in varied activity, at different times, all in the vicinity of the ferry terminal. Could the activity be completely innocent

[124] The White House, State of the Union Address, 2002·

> and explainable? Of course. Could the person be engaged in surveillance in preparation for a terrorist attack? Perhaps. Is the behavior suspicious enough to report? Yes.[125]

While the relationship featuring the Coast Guard reaching out to members represents the core function of CAN, the program has a rich history of members self-reporting to the Coast Guard — essentially reporting unique and actionable information that might have gone unnoticed to the agency. Several examples are included in the annex of this thesis.

This study's dependent variable was also derived, in part, from concepts forwarded in *The National Plan to Achieve Maritime Domain Awareness*. This plan attests to the importance of the maritime domain when it suggests that there are few areas of greater strategic and vital importance than our nation's waterways. The plan claims that our nation's maritime environment presents a broad array of terrorist targets which could inflict mass casualties or cause significant economic harm.

The plan emphasizes the domain's terror potentials as motivation for improving maritime prevention measures. The plan recommends broad threat knowledge and awareness as effective measures to improve prevention, deterrence and interdiction. The plan calls on *all* members of a Global Maritime Community, including citizens, to develop an *effective* understanding of maritime activities through persistent vigilance.

8. Community Engagement

This study included two measures outside of the CoP model. The first of these was the Community Engagement measure, which rated a Cronbach's Alpha/Reliability score of .756 while the mean was 4.09, the third highest among all eight CoP and CE/CA index measures.

Five community engagement questions were used to make up the index and designed to measure participants' beliefs on their being part of their community:

---

[125] United States Coast Guard, "What is 'Suspicious Activity?'" America's Waterway Watch, http://www.americaswaterwaywatch.org/what_is.htm (accessed July 23, 2007).

- Do you feel like you are a part of your local community?
- How closely do you follow local news and affairs in your community?
- How often would you say that you have ideas for improving things in your community?
- How often do you get together with people to talk about ways to improve your community?
- How often do you participate in activities to make things better in your community?

The Minnesota Department of Health says that community engagement is a type of public participation that involves people in problem-solving or decision-making processes.[126] The Centers for Disease Control and Prevention defines it as "the process of working collaboratively with groups of people who are affiliated by geographic proximity, special interests or similar situations with respect to issues affecting their wellbeing."[127]

Findings show that communal participation can lead to improvements in both the neighborhood and community. Additionally, it fosters closer interpersonal relationships and stronger social fabric.[128] Moreover, community participation is "a major method for improving the quality of the physical environment, enhancing services, preventing crime, and improving social conditions."[129]

	N	Minimum	Maximum	Mean	Std. Deviation	Alpha	Variance
Community Engagement	184	2.00	5.00	4.0978	.66874	.756	.447

Table 8. Community Engagement.

126 The Minnesota Department of Health, "Overview: What is Community Engagement?" Minnesota Department of Health, http://www.health.state.mn.us/communityeng/intro/index.html (accessed August 20, 2007).

127 CDC/ATSDR Committee on Community Engagement, "Principles of Community Engagement," Centers for Disease Control and prevention, http://www.cdc.gov/phppo/pce/ (accessed August 21, 2007).

128 P. Florin and A. Wandersman, "An introduction to citizen participation, voluntary organizations, and community development: insights for empowerment through research," *American Journal of Community Psychology* 18, no. 1 (1990): 41-55.

129 D. M. Chavis and A. Wandersman, "Sense of community in the urban environment: a catalyst for participation and community development," *American Journal of Community Psychology* 18, no. 1 (1990): 55-81.

Measuring CAN's community engagement levels gives the Coast Guard a more comprehensive understanding of the network's current state, its ability to willingly rally around community-based issues and help solve maritime domain challenges.

9. Community Efficacy

This study's second of two non-CoP measures was the Community Efficacy measure, which rated a Cronbach's Alpha/Reliability score of .735 while the mean was 4.32, the second highest among all CoP and CE index measures.

	N	Minimum	Maximum	Mean	Std. Deviation	Alpha	Variance
Community Efficacy	184	2.00	5.00	4.3261	.75141	.735	.565

Table 9. Community Efficacy.

The three efficacy questions, using a five-point scale, were:

- I felt like I made a contribution to the community.
- I felt like part of a community.
- I felt I could make a difference in the life of at least one person.

Efficacy has been defined as an individual's perceived expectancy of obtaining valued outcomes through personal effort.[130] Research suggests that the concept of collective efficacy is the sense of attachment to a community, which resides in combination with a willingness by residents to intervene on each other's behalf regardless of any pre-existing network ties.

It is "distinct from social networks and extends the trust and solidarity dimensions of social capital to include the collective capacity to translate social resources into

[130] Bruce Fuller et al., "The Organizational Context of Individual Efficacy," *Review of Educational Research* 52, no. 1 (Spring 1982): 7–30.

specific outcomes."[131] The collective efficacy concept goes beyond a narrower network's focus by emphasizing a community's broader mutual trust and solidarity among local residents. This concept is also dubbed *social cohesion* and helps set expectations for communal action (via informal social control) and helps explain the impact of neighborhood factors on residents' wellbeing.[132]

While going beyond a CoP prototype, CAN's Community Efficacy measure could help explain the level or sprit of a collective "Good Samaritan" movement, which is exercised whenever a member is called to action (literally phoned to action by the Coast Guard). CAN members who are called into action when lives are at stake would potentially perceive themselves as adding value as part of a collective response. I would expect activities such as these to add to already high feelings of communal efficacy based on the member's willingness to join CAN to assist in the first place.

131 Robert J. Sampson, Jeffery D. Morenoff and Felton Earls, "Beyond Social Capital: Spatial Dynamics of Collective Efficacy for Children," *American Sociological Review* 64 (1999): 633–660, In "Neighborhood Structural Disadvantage, Collective Efficacy, and Self-Rated Health in an Urban Setting," by Christopher R. Browning and Kathleen A. Cagney, *Journal of Health and Social Behavior* (2002): 385.

132 Browning and Cagney, 385.

VI. RESEARCH QUESTION ONE

A. DO THE DEMOGRAPHICS OF THE CITIZEN'S ACTION NETWORK, A NETWORKED COMMUNITY, INDICATE TRENDS IN NETWORKED COMMUNITY VOLUNTEERISM?"

Based on the relevant literature, one might expect that volunteers who joined CAN would be individuals receptive to patriotic symbols, are attuned to national issues and have a strong sense of purpose. These individuals would be seeking roles providing opportunities for personal achievement while being part of a social support network.

The following table provides a breakdown into the type of volunteer CAN has attracted over the years.

CAN Demographics & Affiliations	**Gender**	**Avg. Age**	**Member Non profit org?**	**Business Owner**	**U.S. Citizen**	**A Vet**	**Yrs in Community**	**CG Aux**
N=184	138 M 46 F	65	97	48	180	92	16.75	30
Percentages	75% Male		52%	26%	97.8%	50%		16%

Table 10. Citizen's Action Network Volunteer Demographics & Affiliation.

CAN membership demographics point to some notable trends:

There is predominate male representation at 75 percent of the CAN population.

The census bureau also tells us that that the average age in the United States is just over thirty-six years;[133] CAN's average is sixty-five years. Further, American

133 U.S. Census Bureau, "2005 American Community Survey Data Profile Highlights," U.S. Census Bureau, http://factfinder.census.gov/servlet/ACSSAFFFacts?_submenuId=factsheet_0&_sse=on (accessed July 3, 2007).

citizens have a tendency to move, on average, every five years; CAN members average nearly seventeen years in their communities.[134]

The Small Business Administration advertises about 8 percent of American's own businesses or firms[135] while CAN membership has 26 percent in this category.

The United States population, as of 2000, is made up of just over 12 percent veterans,[136] while CAN boasts that 50 percent are veterans — a four-to-one difference!

Research question number three asked if we could predict the type of volunteer we might see represented in a security-oriented volunteer organization. CAN's high number of elderly members who are also business owners is certainly noteworthy. But, as CAN operates with high levels of Goal Clarity, Social Identification and Access to a U.S. military organization, the high numbers of U.S. military veterans is worth a deeper look.

1. Veterans and Patriotism

Do veterans have a propensity to volunteer in a security-oriented network? According to research, veterans are more likely than non-veterans to feel positively about the military, believe that a strong military and strong defense is essential, support spending on defense and are more comfortable in having their own sons volunteer for military service. Other findings posit that veterans are significantly more likely than non-veterans to value national security.137 Additionally, veterans of the World War II-era were significantly more likely than non-veterans to value order and approve of the government forbidding demonstrations.[138]

---

134 Andy Lewis, "Mobility – A Culture on the Move," Center for Community and Economic Development, http://www.uwex.edu/ces/CCED/economies/communityindicators/CommunityIndicators2.cfm#_ftn1 (accessed August 26, 2007).

135 U.S. Census Bureau, "2002 Survey of Business Owners," (July 26, 2005), U.S. Census Bureau, www.census.gov/Press-Release/www/2005/sbo2002_presentation.ppt, (accessed July 3, 2007).

136 U.S. Census Bureau, "People: Veterans," U.S. Census Bureau http://factfinder.census.gov/jsp/saff/SAFFInfo.jsp?_pageId=tp12_veterans (accessed July 3, 2007).

137 E. M. Schreiber, "Enduring Effects of Military Service? Opinion Differences between U.S. Veterans and Non-veterans," Social Forces 57, no 3. (March 1979): 830.

138 Samuel A. Kirkpatrick and James L. Regens, "Military Experience and Foreign Policy Belief Systems," Journals of Political and Military Sociology, 6 (Spring 1978): 29-47.

The topics of veterans having an interest in keeping order, promoting national security and protecting their community have a significant place within military sociology. Indeed, even the definition of military institutions suggests this: they are "an organized system of activity directed at the achievement of certain goals…for carrying on aggression against other societies, protecting the society against aggression by others, and providing the means for maintaining domestic order and control."[139]

Further, the term *patriotism* has been defined in social science literature as readiness to act in the service of one's country.[140] Thus, when the president called upon patriotic citizens to volunteer to help the nation, it seemed natural that veterans specifically and, in the case of CAN, overwhelmingly filled that void. Social scientists support this trend when they suggest that people seek and occupy jobs that fit their personality.[141]

It is interesting to note that patriotism has been found to play a critical role in affecting the quality and composition of America's all-volunteer military force.[142] Studies here have noted that the most well-educated and high achievers among those enlisting were more likely to choose "wanting to help my country" as the most important reason influencing their enlistment decision. [143] Notable here then is 22 percent more veteran CAN responders articulated themes of national security, as when were asked why they joined the network over their civilian counterparts (members with no prior military service). Additionally, 18 percent more veteran CAN responders articulated themes of community protection on the same question over their civilian counterparts.

Political scientist Craig Rimmerman suggests that volunteerism is part of a new, broader definition of citizenship that "goes well beyond the traditional model of political

---

139 C. H. Coats and R. J. Pelligrin, Military Sociology: A Study of American Military Institutions and Military Life (University Park, MD: Social Science Press, 1965) 10.

140 James Burk, "Patriotism and the All-Volunteer Force," Journal of Political and Military Sociology, 12 (Fall 1984): 229-241.

141 Melvin L. Kohn and Carmi Schooler, "Job Conditions and Personality: A Personality Assessment," American Journal of Sociology 87 (May 1982): 1257-1286.

142 "Patriotism and the All-Volunteer Force," 229-241.

143 D. Edwin Lebby and Associates, Military Option Evaluation Study (Chilton, PA: Research Services, 1980) 204.

participation." Instead of relying on single dimensions of measuring citizenship behavior, such a voting, he associated citizenship with broader forms of participation, such as grassroots mobilization and community participation.[144] In this light, it might be suggested that CAN offers such an outlet that goes well beyond the "traditional" model of political participation in a post-9/11 landscape by offering multi-dimensional outlets for many diverse populations. The next section will examine some of these dynamic relationships.

[144] C. A. Rimmerman, "The new citizenship: Unconventional politics, activism, and service," Boulder, CO: Westview, in Administration & Support (Boulder, CO: Westview, 2001) 5.

VII. RESEARCH QUESTION TWO

A. DOES PARTICIPATION IN THE CITIZEN'S ACTION NETWORK, A NETWORKED COMMUNITY, INCREASE LEVELS OF SOCIAL CAPITAL AND CIVIC ENGAGEMENT?

With this research question in mind, two comparative studies are presented to allow perspective on CAN's community engagement, civic engagement and affect measures.

In 2005, a published *Journalism in Mass Communications Quarterly*[145]study provided a sample of over three hundred Washington State residents' input on seven civic engagement measures. To find out how CAN members would compare to this "baseline" measure, the same seven questions were included in the CAN survey; the results of each group were then tested against each other via an analysis of the populations' variance or ANOVA.

Table 11

Civic Engagement Measures	Worked on community project	Signed a Petition	Attended a Political Meeting or Rally	Participated in Demonstration or Rally	Participated in PTA/PTO or School Group	Participated in Neighborhood Assn, Block Watch etc.	Part of Service Club or Fraternal Organization
CAN							
Mean	3.462	3.244	2.673	1.282	1.565	3.152	3.070
Stand Dev	1.3824	1.482	1.530	.8666	1.203	1.612	1.717
WA Residents							
Mean	2.058	2.328	1.639	1.333	1.722	1.78	1.44
Stand Dev	1.167	1.017	.8701	.7555	1.236	1.117	.9315
F/Significance Via ANOVA	143.07/ .000	64.91/ .000	90.01/ .000	.459/ .498	1.87/ .171	121.82/ .000	179.83/ .000

Table 11. CAN vs. Baseline Civic Engagement Measures.

[145] Patricia Moy et al., "Linking Dimensions of Internet Use and Civic Engagement," Journalism in Mass Communications Quarterly 82, no. 3 (Autumn 2005): 571–576.

The results show that CAN members are significantly more engaged in their community on five of seven measures — all measures which earned a p => .001. While the results are not necessarily surprising, being that CAN is an all-volunteer organization to begin with, the strength of the significance levels at .000 suggests that there is a very large gap in Civic Engagement levels between the network members and adult Washington State residents.

Finally, it is important to test and see if time in CAN has any effect or causal relationship on bolstering the Civic Engagement measures. Essentially, does time in CAN make a difference on the high levels of CAN's civic engagement. The following table highlights findings where the measures are tested against time in the network where time is represented from zero to one year (N=81) and two or more years (N=103). Remnants of Table X will be maintained within this table for comparison and clarity.

New vs Vet CAN Members	Worked on community project	Signed a Petition	Attended a Political Meeting or Rally	Participated in Demonstration or Rally	Participated in PTA/PTO or School Group	Participated in Neighborhood Assn, Block Watch etc.	Part of Service Club or Fraternal Organization
New CAN							
Mean	3.271	3.308	2.765	1.432	1.604	2.975	3.074
Stand Dev	1.431	1.463	1.575	1.094	1.231	1.612	1.679
Vet CAN							
Mean	3.611	3.194	2.601	1.165	1.534	3.291	3.066
Stand Dev	1.330	1.502	1.497	.6119	1.186	1.678	1.756
F/Significance	2.77	.269	.516	4.39	.157	1.748	.001
Via ANOVA	**.098**	.604	.473	**.038**	.693	.188	.981
Significance from previous	.000	.000	.000	.498	.171	.000	.000

Table 12. CAN vs. Time in CAN on Community Engagement Measures.

As seen in Table 12, two of seven measures hint that time in CAN is significantly correlated with changes in direction: Worked on a Community Project (p=.098) and Participated in a Demonstration or Rally (p=.038). When these two measures are

compared to the findings from the previous tables — those being the differences between CAN and a baseline adult population — we can see that only Worked on a Community Project (p=.000) was previously significant as detailed in the previous table. Thus, this second chart's findings suggest that time in CAN might have an impact on its members' motivations to "Work on a Community Project" as the only significantly above-normal measure affected by time in the program.

More importantly, these findings suggest that CAN both a) attracts and b) maintains highly engaged volunteers over time and is not necessarily a causal agent for changing its members' levels of engagement. Thus we might assume from these findings that CAN's mission and affiliations attract and maintain a certain kind of volunteer.

Now that we know CAN is not a causal network per se, we can take these findings one more step. Here, we will test CAN's Community and Community Efficacy measures against survey results found in Americorps,[146] another all-volunteer service-oriented community, to see if CAN members rank higher or lower in other community engagement measures in a volunteer-to-volunteer (apples-to-apples) comparison.

First, national Americorps longitudinal survey data was garnered through the organization's contracted research team. In all, data from 1,921 Americorps respondents were compared to CAN's 184 across fourteen variables designed to measure efficacy across four dimensions: Neighborhood Obligations, Civic Obligations, Effectiveness of Community Service and Local Efficacy. Of the fourteen variables, only two measures came up with insignificant differences, but with both means favoring CAN: Participating in Neighborhood Organizations and Getting the Local Government to Fix a Pothole on My Street. The twelve measures and their results follow:

146 "AmeriCorps is a network of local, state, and national service programs that connects more than 70,000 Americans each year in intensive service to meet our country's critical needs in education, public safety, health, and the environment. AmeriCorps members serve with more than 2,000 nonprofits, public agencies, and faith-based and community organizations. Since 1994, more than 400,000 men and women have provided needed assistance to millions of Americans across the nation through their AmeriCorps service." AmeriCorps, http://www.americorps.org/about/ac/index.asp (accessed August 26, 2007).

Civic/Community Efficacy CAN vs. Americorps Findings				
Neighborhood Obligations Dimension				
Americorps N=1921 CAN N=184	**Means Amer/CAN**	**Std. Dev**	**Sig.**	Higher Means
Reporting a crime you may have witnessed.	2.900/2.978	.302/.146	.001	**CAN**
Participating in neighborhood organizations.	2.646/2.652	.514/.531	***N/A***	**CAN**
Helping keep the neighborhood safe.	2.909/2.967	.294/.178	.008	**CAN**
Helping keep neighborhood clean and beautiful.	2.784/2.869	.425/.383	.009	**CAN**
Helping those who are less fortunate.	2.914/2.804	.284/.397	.000	**Americorps**
Civic Obligations				
Americorps N=1919 CAN N=184	**Means Amer/CAN**	**Std. Dev**	**Sig.**	Higher Means
Serving on a jury if called.	2.584/2.869	.539/.368	.000	**CAN**
Voting in elections.	2.756/2.967	.477/.206	.000	**CAN**
Keeping informed about news and public issues.	2.778/2.902	.432/.363	.000	**CAN**
Personal Effectiveness of Community Service				
Americorps N=1173 CAN N=184	**Means Amer/CAN**	**Std. Dev**	**Sig.**	Higher Means
I felt like I made a contribution to the community.	4.415/4.1902	.597/.970	.000	**Americorps**
I felt like part of a community.	4.201/4.402	.720/.869	.001	**CAN**
I felt I could make a difference in the life of at least one person.	4.519/4.385	.627/.945	.013	**Americorps**

Local Civic Efficacy				
Americorps N=1915 CAN N=184	**Means Amer/CAN**	**Std. Dev**	**Sig.**	Higher Means
Getting the local government to fix a pothole on my street.	2.370/2.423	.592/.799	***NA***	**CAN**
Getting the local government to build an addition to the community center.	2.046/1.788	.564/.655	.000	**Americorps**
Getting an issue on the ballot for a state -wide election.	2.148/1.842	.625/.844	.000	**Americorps**

Table 13. CAN vs. Americorps Findings.

Of the fourteen variables, only two measures came up with insignificant differences, leaving 12 with significant differences. Although CAN members ranked significantly higher in seven of the twelve variables, it is important to note that the dimension supporting Civic Obligations fell completely to the CAN program. This suggests, overwhelmingly, that CAN members feel a civic duty to serve and, by joining CAN, have demonstrated their commitment to maintain a high level of engagement.

Researches suggest that individuals volunteer to satisfy certain needs or motives, and that role identity is the proximal cause of sustained volunteering. This academic claim seems well-supported within these findings. That said, it comes as no surprise that CAN ranked as significantly higher in their helping to keep their neighborhood safe ($p = .008$) and, even more significantly, their propensity to report a crime they might have witnessed ($p = .001$), above and beyond the propensity of doing the same of another civically-engaged, service-oriented volunteer member.

These findings demonstrate that, even among service-oriented volunteer groups, those individuals with certain needs, capabilities or desires to fill a certain role will find a *right fit.* After all, it is an age-old axiom that suggests that birds of a feather flock together.

1. Other Indicators

I believe it is important to examine the data to see if there are any other significant correlations with the study's Community/Civic Engagement and Civic Efficacy measures as established using survey questions developed and published by Robert Putnam and other social scientists. Notably, findings in this area suggest that civic participation increases at the level of community and local problem-solving activities. With this in mind, it becomes important to look into CAN and see if there are significant relationships.

2. Independent Samples T Test

Where appropriate, survey responses were divided into two groups, based on high (above the mean) and low (below the mean) or present/not present sets in order to test the significance of the difference between two groups across the study's Engagement/Efficacy indices.

To test the significance of those differences, the Independent Samples t Test was used. When split, all tested groups were independent and no respondent resided in both groups. The t Test, or Student's T, is a robust test of the significance between two groups. The results below show the significant differences in means using the Student's t Test. Further, a review of the bifurcated variable means allows for prediction of the higher/lower section of the indices, suggesting directional relationships.

- The differences between CAN's Vets vs. Non Vets were tested and found to be significantly correlated with Community Engagement earning a p value of .034 and .034 respectively when equal variances are assumed and when they are not assumed. The means were compared, and Non Vets were found to represent the high end of Community Engagement.

- The differences between CAN's Business Owners vs. Non-owners were tested and found to be significantly correlated Community Efficacy earning a p value of .017 and .044 respectively when equal variances are assumed and when they are not assumed. The means were compared, and Non owners were found to represent the high end of Community Efficacy.

- The differences between CAN's Men vs. Women members were tested and found to be significantly correlated with Community Engagement earning a p value of .004 and .001 respectively when equal variances are assumed and when they are not assumed. The means were compared, and Women were found to represent the high end of Community Engagement.

- The differences between CAN's Non-profit members and those not affiliated with a Non-profit were tested and found to be significantly correlated with both Community Engagement and Community Efficacy earning p values of .000 and .000 respectively on both measures when equal variances are assumed and when they are not assumed. The means were compared, and non profit affiliated members were found to represent the high end of both Community Engagement and Community Efficacy.

The findings presented above suggest that the CAN network indeed attracts and maintains diverse audiences with varied strengths and interests. This is an important finding in that Coast Guard CAN leaders, or any other manager of a similar volunteer group, need to keep these findings in mind when recruiting, providing training or communicating with networks of individuals, because CoP literature suggests that these types of communities will thrive only when leaders generate a working atmosphere that is equally diverse, lively and innovative.

Further, psychology research suggests that, to maintain volunteer groups, the organization must provide outlets supporting individual interests, values and beliefs that match with the social movement's organizational activities, goals and ideology, such that, together, they are congruent and complementary.

With the Coast Guard's all-hazard mission set, offering CAN participants an ability to participate in a wide variety of problem-solving activities (from oil spill and marine mammal protection activities to law enforcement lookout to homeland security mission support), the network remains interesting and fulfilling to its diverse populations.

While CAN maintains a membership with diverse interests and skills, these sets hold insignificance levels when applied to a "time in CAN" measure, which tells us CAN attracts highly engaged members and keeps these members engaged. Essentially, CAN is

not necessarily a causal factor in building higher levels of community engagement, for instance, but instead offers an outlet for such engaged citizens to participate and make a difference in post-9/11 America.

VIII. RESEARCH QUESTION THREE

A. DO HIGHER LEVELS OF SOCIAL CAPITAL, SOCIAL IDENTITY, GOAL CLARITY, ACCESS TO PARTIES AND EXPERTISE LOCATION LEAD TO INCREASED "INNOVATIVE VIGILANCE" AND INCREASE THE LIKELIHOOD TO REPORT?

1. Research Approach

Regression analysis was used to evaluate the relationships between five independent variables (Trusts, etc…) and vigilance in a new dependent variable within the context of HLS. Due to the recent emergence of vigilance as a dependent variable in Homeland Security research, theoretical support for the proposed relations has not been established.

By testing the five relationships below, this thesis seeks to provide support for the idea that CoP constructs (Trust, Social Identity, etc.) are predictors of vigilance and to propose a predictive model for community outcomes. (i.e., H1 — Higher levels of Access to Parties in the CAN community leads to higher levels of vigilance and so on, through H5).

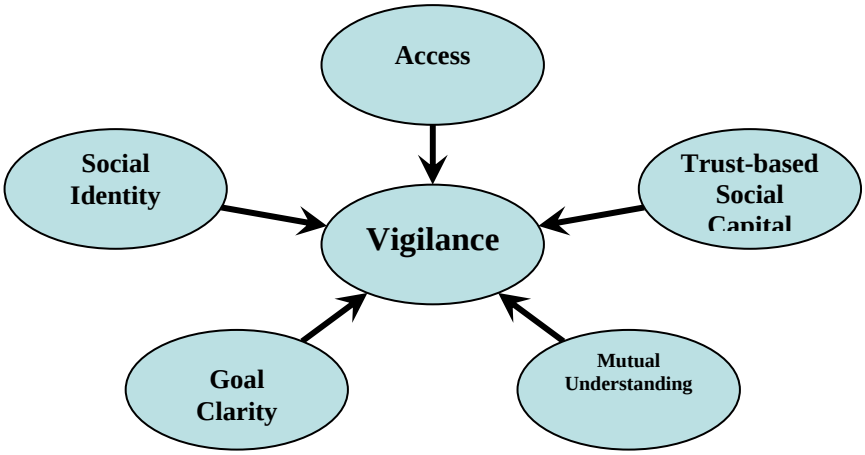


Figure 4. CoP Indexes Correlate to Vigilance.

2. Regression Analysis

The Regression analysis was used to examine the strength of the relationships between the dependent variable Vigilance and the five independent variables

- **GOAL CLARITY**

CAN's Goal Clarity measure predicts .567 percent of the dependent variable — the largest predictor value of the set. Further, its ranking gives the finding face validity as Goal Clarity was earlier defined as "a specific performance objective, phrased in such concrete language that it is possible to tell, unequivocally, whether that performance objective has been attained." As such, the Coast Guard's clear goal of who or what to look for in the maritime domain becomes that performance objective — clearly articulated in CAN training material and on a case-by-case basis via one-to-one phone calls or alerts.

Further, the Goal Clarity measure fits within the larger Domain component, which is credited for creating the network's common ground and giving it a sense of identity. CoP theorists suggest that a well-defined domain legitimizes the community by affirming its purpose and value to members and other stakeholders. The domain inspires members to contribute and participate, guides their learning, and gives meaning to their actions. The domain guides the questions that are asked and the way knowledge is organized. Clearly, the CAN program provides a very strong concept of Domain.

Goal Clarity				Change Statistics				
R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
.754(a)	.569	.567	.68149	.569	238.926	1	181	.000

Table 14. Goal Clarity.

- **SOCIAL IDENTITY**

The Social Identity variable ranked second with an R-squared value of .31 or 31 percent, which, again, seems relevant in that each CAN member, by living on a waterway, is probably highly familiar with the Coast Guard already.

When waterfront homeowners join CAN, they are taking a definitive step in affiliating themselves as part of a safety- and security-oriented agency, and would certainly be expected to take on vigilance as part of that affiliation. Social Identity with CoP is defined as a group of people who interact, learn together, build relationships and, in the process, develop a sense belonging and mutual commitment. Members use each other as sounding boards and, over time, they build a sense of common history and identity that becomes the social fabric. Thus, it seems reasonable to say that CAN is indeed building its own sense of identity within the Coast Guard and amongst the wide variety of members who make up CAN.

Social Identity				Change Statistics				
R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
.560(a)	.313	.310	.86592	.313	83.027	1	182	.000

Table 15. Social Identity.

- **ACCESS TO PARTIES AND MUTUAL UNDERSTANDING**

Access and Mutual Understanding measures follow Social Identity in order of impact with each generating R-squared values of .28 and .177 respectively, and representing both the Domain and Community components. While the values of these measures are fairly robust, they are generally low compared to the first two measures. These values seemingly reflect CAN's limited Coast Guard-to-member communication opportunities outside of emergent situations. Essentially, at the time of the survey, the Coast Guard was only communicating directly with CAN members during emergent situations with only about 40 percent of the CAN population receiving phone calls.

Access				Change Statistics				
R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
.533(a)	.284	.280	.88426	.284	72.145	1	182	.000

Table 16. Access to Parties.

Mutual Understanding				Change Statistics				
R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
.426(a)	.182	.177	.94384	.182	39.550	1	178	.000

Table 17. Mutual Understanding.

- **TRUST**

Finally, the Trust-based Social Capital measure rated the lowest at predicting vigilance via an R-squared value of .123. This relatively low predictive value suggests that trust-based social capital might not have much predictive value with vigilance but might be more associated with trust amongst the community of CAN itself — enhancing the network's social capital. Robert Putnam says that trust-based social capital is an institutionalized collective endeavor. At the time of this survey, CAN members had no way of knowing other members of the network — essentially the network members remained invisible to each other, with the exception of the occasional call from the Coast Guard and the routine receipt of news and information. It is notable to review here that, despite the low correlation between vigilance and trust, the individual trust question means were the highest in the survey, reflecting an extremely high level of trust with the Coast Guard.

Trust				Change Statistics				
R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
.358(a)	.128	.123	.97579	.128	26.707	1	182	.000

Table 18. Trust.

IX. RESEARCH QUESTION FOUR

A. WHAT EFFECTS, IF ANY, DO COAST GUARD-LED COMMUNICATIONS HAVE ON THE NETWORK?

This chapter explores the effects of CAN communications as a potential change maker among the network's membership. The relationships between CAN were tested using receipts of the Coast Guard's primary communication's methods, CG e-mails, CG CAN newsletters and one-to-one phone calls. These communication treatment inputs measures were binary — they either occurred or they did not. Some CAN members had never received a phone call for direct assistance, while others elected not to receive e-mails, etc. With this in mind, each group (treated or not treated) was tested against the eight indexes used in this study (six CoP measures and two Community – Engagement and Affect) providing twenty-one separate (3x7) tests for correlation.

Of the twenty-one tests, only two of the eight indexes, Trust-based Social Capital and Access to Parties, demonstrated a significant relationship with any one of the three communication input measures. Differences in Trust-based Social Capital significantly correlated to receipt or non-receipt of phone calls, while Differences in Access to Parties correlated to receipt or non-receipt of both e-mails and newsletters. In both indexes, CAN members who received communications represented the population with the higher means.

1. Written Communications

The differences between receipt or non-receipt of written communications (newsletters and CAN e-mail) from the Coast Guard and levels of CAN members' Access to Parties were tested and found to be significantly correlated, earning a p value of .037 and .043 for CG Emails (67.5 percent of CAN membership had received e-mails) and .038 and .037 for CAN News (38.2 percent of CAN had received a CAN newsletter) respectively when equal variances are assumed and when they are not assumed. The

means were compared, and those receiving both e-mails and news were found to represent the high end of Access to Parties.

2. Person-To-Person Communications

The differences between person-to-person communication from the Coast Guard (vs. none received) and levels of CAN members' Trust-based Social Capital were tested and found to be significantly correlated, earning a p value of .017 and .019 respectively when equal variances are assumed and when they are not assumed. The means were compared, and those with high communication were found to represent the high end of Trust-based Social Capital. Survey results showed that 35 percent of members received one-to-one calls from the Coast Guard.

Each of these relationships can now be added to the CoP model developed and tested in the previous chapters. In the figure below, we can see that the Coast Guard's communications can make a difference in at least two of the five CoP input measures that are correlated to vigilance. The indexes representing Community Engagement and Citizen Affect are not shown, as the communication measures produced no significant relationships.

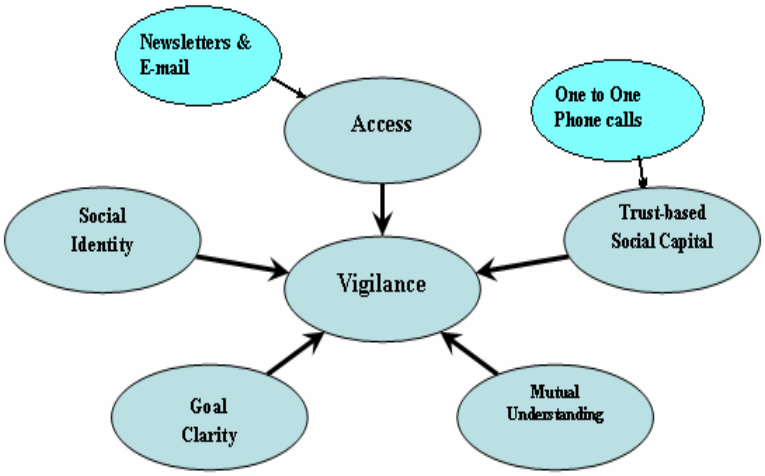


Figure 5. Influences of CAN Communications on CoP Indices.

The evidence presented suggests that Coast Guard-led communications do indeed have a positive impact on the network. While the volume of communications received vs. variables was inconsequential, the simple act of CAN members receiving or not receiving messages makes a significant difference. As an interesting qualitative side note, approximately 84% of CAN members surveyed suggested increased or improved communication from the Coast Guard when asked "In your opinion, how could we improve CAN?" which again suggests the power and desire for organizational engagement.

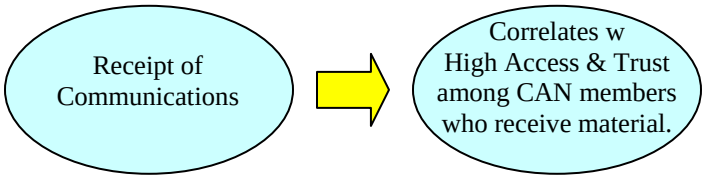


Figure 6. Receipt of CAN Communications Model.

With such a significant finding, I decided to push the research further. I was trying to "tease out" what differences in groups receiving or not receiving communications might have in relationship to the other indexes used in this study — essentially looking for a secondary relationship. This led me to produce another, unanticipated yet related, research question: Do members populating the higher range of Access to Parties or Trust-Based Social Capital also populate the higher range of the other indexes (CoP, Community Engagement Citizen Affect) used in this study? This question will be explored in the next chapter.

THIS PAGE INTENTIONALLY LEFT BLANK

X. RESEARCH QUESTION FIVE

A. DO MEMBERS POPULATING THE HIGHER RANGE OF ACCESS TO PARTIES OR TRUST BASED SOCIAL CAPITAL ALSO POPULATE THE HIGHER RANGE OF THIS STUDY'S OTHER INDEXES?

Taking the communications-based research a step further, I tested for any relationships between the Trust-Based Social Capital and Access to Parties indexes, measures showing a significant correlation to the receiving communications, with the remaining "non-related indexes" to see if those CAN members scoring in the higher means on these indexes would also populate the group with the highest means on the other indexes. This was done to test for any indirect relationships related to the Coast Guard's communications program (receipt or non-receipt of written/verbal communications) via the intermediary indexes holding the correlation relationship.

To test for potential relationships, I split the Access and Trust index populations into two groups. These indexes were split at the mean to produce a high group (above the mean) and low group (below the mean). These bifurcated indices were tested against the other index measures, again using the Independent Samples t Test, which is robust test of the significance between any two groups. Both the Trust and Access "split at the means" groups were independent and no single respondent resided in both groups.

The results in the tables below demonstrate a significant difference between the bifurcated Affect (five significant outcomes) and Trust (six significant outcomes) indexes. The split Affect measure showed no significant relationship with Community Engagement (p=.660) or Community Efficacy at (p=.132). Trust had no significant relationship with the Community Engagement Index (p=.85).

The conclusion of these tests is that those respondents in the upper half of the Access and Trust Index also represented the higher means of most of the other indices. The differences in the means for the two groups were significant to a statistical certainty and could not have occurred by chance (see p values in Table y).

As the communication measures were demonstrated to be significant difference makers working into the Access and Trust indexes, the presumption is that these communication tools have a significant moderating or interacting effect on nearly every aspect of the network. This evidence suggests that even within an already motivated and engaged network, communications with members should be considered powerful predictors of increased success in CAN, as measured by almost all other indices.

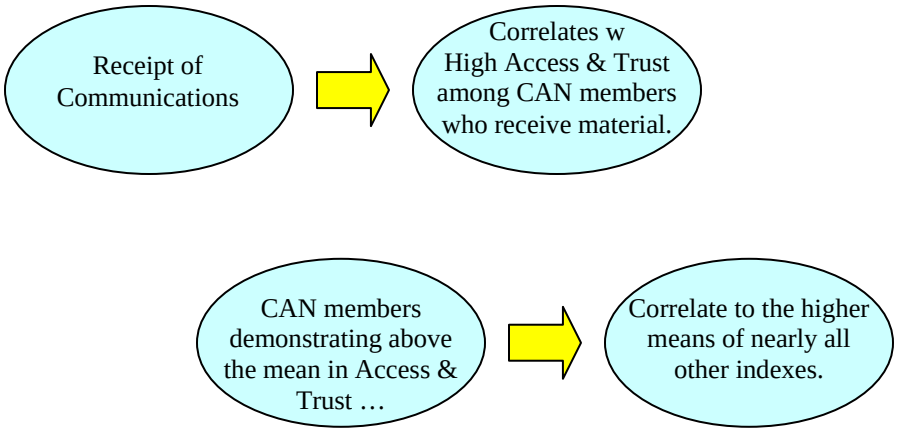


Figure 7. High Access and Trust Means Correlation Model.

1. Communications as an Extrinsic Motivator

Vigilance theory suggests that most individuals can apply themselves to vigilance (a task) and that conscientious persons will generally score higher than lesser-inclined individuals (on radar testing for instance). These findings demonstrate that a person's true ability to attend to a vigilance display to the limit of their capacity requires extrinsic motivation in the form of knowledge of results, motivating instructions and the participants' attitudes toward the experimenter.[147]

Despite obvious differences between CAN and the experiment, the results of this research suggest that a vigilance-minded CoP, like CAN, would indeed respond

[147] R. L. Smith, "Monotony and motivation: A theory of vigilance," In D. R. Davies and R. Parasuraman, The Psychology of Vigilance (London: Academic Press, 1982) 21.

positively to Coast Guard-to-member communications or "extrinsic motivation." Moreover, these findings may be seen as relating to every CoP input variable in this thesis. Consider:

- Knowledge of Results = Access to Parties, Goal Clarity, Mutual Understanding
- Motivating Instructions = Social Identification, Trust-Based Social Capital
- Attitudes Toward Experimenter = Social Identification, Trust-Based Social Capital

Tables 19 and 20 below show the t-test relationships where Access and Trust Indices were split at their means and subsequently tested against all other CoP, Community Engagement and Community Efficacy index measures. Low/Hi Access was significantly correlated to receipt of CAN newsletters and CG News E-mails (yes or no) and Low/Hi Trust was significantly correlated to the receipt of Coast Guard-initiated phone calls.

		t-test for Equality of Means when tested against Access Index split at its mean						
		t	df	**Sig. 2-tailed** p = <	**Mean Low Access Gp**	**Mean High Access Gp**	95% Confidence Interval of the Difference	
							Lower	Upper
Index Mutual Understanding	Equal variances assumed	-6.863	178	**.000**	**2.3640**	**3.3584**	-1.280	-.708
	Equal variances not assumed	-6.871	177.798	.000			-1.280	-.708
Index Social ID	Equal variances assumed	-6.600	182	**.000**	**3.3722**	**4.1729**	-1.040	-.561
	Equal variances not assumed	-6.571	171.785	.000			-1.041	-.560
Index Goal Clarity	Equal variances assumed	-8.578	181	**.000**	**2.6292**	**4.0479**	-1.744	-1.092
	Equal variances not assumed	-8.531	170.044	.000			-1.746	-1.090
Index Trust	Equal variances assumed	-5.143	182	**.000**	**4.6704**	**4.7518**	-.418	-.186
	Equal variances not assumed	-5.134	179.071	.000			-.419	-.186
Index Vigilance	Equal variances assumed	-7.512	182	**.000**	**3.4000**	**4.4113**	-1.277	-.745
	Equal variances not assumed	-7.438	146.737	.000			-1.280	-.742

Table 19. This table shows t-test relationships when the Access Index is split at its mean and tested against all other CoP, Community Engagement and Community Efficacy indexed measures. Low/Hi Access was significantly correlated to receipt of CAN newsletters and CG News E-mails (yes or no).

		t-test for Equality of Means when tested against Trust Index split at its mean						
		t	df	**Sig. 2-tailed**	**Mean Low Trust**	**Mean High Trust**	95% Confidence Interval of the Difference	
				p = <			Lower	Upper
Index Mutual Understanding	Equal variances assumed	-4.366	178	**.000**	**2.4493**	**3.1441**	-1.008	-.380
	Equal variances not assumed	-4.456	153.891	.000			-1.002	-.386
Index Access to Parties	Equal variances assumed	-5.043	182	**.000**	**2.3750**	**3.2232**	-1.180	-.516
	Equal variances not assumed	-5.296	173.732	.000			-1.164	-.532
Index Social ID	Equal variances assumed	-8.818	182	**.000**	**3.1597**	**4.1808**	-1.249	-.792
	Equal variances not assumed	-8.386	126.550	.000			-1.262	-.780
Index Goal Clarity	Equal variances assumed	-3.039	181	**.003**	**2.9930**	**3.5893**	-.983	-.209
	Equal variances not assumed	-3.053	151.321	.003			-.982	-.210
Vigilance	Equal variances assumed	-3.273	182	**.001**	**3.6111**	**4.1131**	-.804	-.199
	Equal variances not assumed	-3.245	147.313	.001			-.807	-.196
Index Comty Efficacy	Equal variances assumed	-2.196	182	**.029**	**4.1759**	**4.4226**	-.468	-.025
	Equal variances not assumed	-2.150	140.849	.033			-.473	-.019

Table 20. This table shows t-test relationships when the Trust Index is split at its mean and tested against all other CoP, Community Engagement and Community Efficacy indexed measures. Low/Hi Trust was significantly correlated to receipt of personal phone calls from the Coast Guard (yes or no).

THIS PAGE INTENTIONALLY LEFT BLANK

XI. DISCUSSION AND IMPLICATIONS

> The Committee is concerned that while terrorism prevention is a national priority, little is being done to create prevention expertise in our nation's first responders. This is in stark contrast to response and recovery training programs. Without a well-developed terrorism prevention plan, State and local agencies lack a key piece in the fight against terrorism.
>
> — House Appropriations Subcommittee on Homeland Security, June 2004

This thesis was developed to explore all possible aspects of a security-oriented networked community around tools, activities or leadership that might emphasize, encourage or educate citizens on the need for and utilization of vigilance.

The survey measures used were designed around questions emphasizing volunteer education, understanding and action. This research was engineered to identify which independent variable or input constructs, if any, might foster vigilance — an important homeland security variable. This thesis examined the inner workings of an award-winning Coast Guard-led networked community called the Citizen's Action Network in an attempt to answer five research questions that could be utilized to develop a national standard for managing networked homeland security communities.

1. Findings

The research findings concluded that CAN membership includes higher-than-average concentrations of military veterans, business owners and members of non-profit organizations (among others). CAN members also have higher Community Engagement and Community Affect levels than either randomly surveyed citizens or those in other government-led volunteer organizations.

The research also demonstrated that CAN members joined as highly engaged citizens and stayed highly engaged during their membership tenure. CAN's

organizational structure was found to fit that of a classic Community of Practice with vigilance supported as a unique outcome variable, and goal clarity as its strongest predictor index.

Finally, those CAN members who received written or oral communications with the Coast Guard garnered significantly higher levels of Access to Parties and Trust-Based Social Capital measures. In turn, those who scored at the higher levels of these two indexes significantly correlated positively to nearly every other measurement index, thus pointing back to the power and value of leadership-to-member communications.

2. A New HLS Business Model

While the 9/11 Commission cited the intelligence community's "failure of imagination," the Coast Guard has done little beyond growing its tactical capabilities and assets to improve its citizen-based programs designed to counter its daunting post-9/11 challenges.

The fact is the Coast Guard is the smallest of the nation’s armed forces and has been charged with bringing security to a dynamic, unwieldy environment where foreign ships, their crews and hundreds of thousands of small vessels operate in and around our critical infrastructure. The Coast Guard needs the full support and cooperation of all loyal citizens within the Maritime Domain as force multipliers.

Traditional Communities of Practice focus on augmenting or adding innovation to business processes. The dissection of CAN has demonstrated that vigilance too can be understood, instilled and utilized at the level of those who are also on the front lines of the GWOT. Building these types of CoPs will better enable the Coast Guard to carry out its myriad missions.

In broader terms, vigilance may be seen as a new social science variable with a homeland security academic context worthy of further research because existing theory is primarily limited to military radar monitoring and zoological or biology-based pack

animal survival studies. Ultimately, program-inspired vigilance can serve not just the Coast Guard, but every other state, local or federal agency where leaders engage publics in any domain.

3. Can-Like Community Policing

Through a CoP-like organization, CAN delivers grass-roots services to the Coast Guard along the lines of a philosophy called *community policing* that, according to the Department of Justice, traditionally "focuses on crime and social disorder through the delivery of police services that includes aspects of traditional law enforcement, as well as prevention, problem-solving, community engagement, and partnerships."[148]

Community policing creates channels through which information flows and trust is built to the mutual benefit of the collective. Additionally, social scientists suggest that communities that bank social capital though broad participation in communal improvement programs experience very little crime."[149] Significant to this research question, social science theory suggests that these types of healthy collaborative networks embody past success, which evolve as cultural templates for future collaboration on other problems. This statement suggests that the roots of CAN lie in a similar collaborative and problem-solving network as those within community policing models. While CAN maintains an international scope, its core concepts are similar to a neighborhood policing model.

CAN is built on the notion that citizens should be empowered to help prevent or respond to the litany of all-hazards missions or maritime problems. The byproduct of this empowerment is the development of positive, goal-oriented teamwork that produces psychological benefits, builds trust and increased social capital. Social scientists tell us that networks of engaged citizens facilitate extended communal coordination and

---

148 United States Department of Justice, Office of Community Oriented Policing Services. "What is Community Policing," http://www.cops.usdoj.gov/default.asp?Item=36 (accessed August 13, 2007).

149 Susan Saegert, Gary Winkel, and Charles Swartz, "Social Capital and Crime in New York City's Low Income Housing," Housing Policy Debate 13, no. 1 (2002): 218, http://fanniemaefoundation.org/programs/hpd/pdf/hpd_1301_saegert.pdf (accessed August 11, 2007).

communication. This community engagement phenomenon has been successfully tapped for years by community police leaders in setting up and running neighborhood watch programs to various levels of success.

Social Scientist Robert Putnam suggests that increased social capital has significant political consequences such as the promotion of political participation and healthy democratic government. He claims that, since 9/11, more citizens are now more inclined to re-engage in their communities,150 as they are "…more united, readier for collective sacrifice and more attuned to public purpose…a window of opportunity has opened for a sort of civic renewal that occurs only once or twice in a century…"151.

Professors John and Mary Kirlin claim that motivation, skills and network connections contribute to increased civic engagement, but the government's responses to 9/11 have not addressed nor taken advantage of these critical factors. They insist that the government must provide the institutional context for societal action to include "sustained commitment to combating terrorism."152 They claim that increased civic engagement strengthens democracy and can contribute to the development of public judgment, which is critical to sustaining support of efforts to thwart terrorism.

The research presented in this thesis demonstrates that the Citizen's Action Network is a networked community that inspires connections, community engagement and grassroots motivation. It is the kind of organization that Putnam praises, and the Kirlin's lament has not been provided by the government in the critical post-9/11 era. CAN's structure parallels that of a Community of Practice, but one that is completely new to the Coast Guard and homeland security.

As a networked community, CAN represents a new working model — a best practice for building a grassroots culture of prevention that capitalizes on broad and inspired citizenry. CAN helps carry out the important duties of protecting the nation as

150 Putnam, "Bowling Alone," and Putnam and Feldstein, "Better Together."

151 Putnam, "Bowling Together."

152 Ibid, 84.

these citizens, or any other un-affiliated maritime-oriented citizen, are by far more familiar with their waterfront communities and are therefore in the best position to help create effective solutions to unique problems.

This thesis provides rich research material to continue further homeland security-directed research in security- and safety-minded Communities of Practice as well as vigilance as a new outcome variable for CoPs. Finally, it demonstrates that government agencies can utilize communications tools to develop a sense of access and trust in its leaders, agencies and organizations.

THIS PAGE INTENTIONALLY LEFT BLANK

BIBLIOGRAPHY

Agranoff, Robert. "Leveraging Networks: A Guide for Public Managers Working Across Organizations." in *Collaboration: Using Networks and Partnerships.* Edited by John M. Kamensky and Thomas J. Burlin. Lanham, MD: Rowman & Littlefield Publishers, 2004.

Aldwin, Caroline M. *Stress, Coping and Development: An integrative approach.* In Bruce Bongar et al., *Psychology of Terrorism.* Oxford: Oxford University Press, 2007.

Arquilla, John. "John Arquilla Interview: Conversations with History." Institute of International Studies, UC Berkeley, http://globetrotter.berkeley.edu/people3/Arquilla/arquilla-con4.html. (June 16, 2007).

Barabasi, Alberto-Laszlo. *Linked: How Everything is Connected to Everything Else and What It Means for Business, Science, and Everyday Life.* Cambridge: Perseus Books Group, 2003.

Biladeau, Pamela. "Strengthening and Expanding the Citizen Corps." Master's Thesis, Naval Postgraduate School, 2006.

Bingham, Zack. "Citizen's Corps: Connecting the Home to Homeland Security." *Homeland Defense Journal* 2, no. 9 (October 2004): 16-20.

Buchanan, Mark. *Nexus: Small Worlds and the Groundbreaking Science of Networks.* Edited by Angela von der Lippe. New York: W. W. Norton & Company, 2002.

Callero, Peter L., Judith A. Howard, and Jane A. Piliavin. "Helping Behavior as Role Behavior: Disclosing Social Structure and History in the Analysis of Prosocial Action." *Social Psychology Quarterly* 50 (1987): 247-256.

Carafano, James Jay. "Small Boats, Big Worries: Thwarting Terrorist Attacks from the Sea." *Backgrounder* 2041. The Heritage Foundation, June 11, 2007. http://www.heritage.org/Research/HomelandDefense/bg2041.cfm (June 15, 2007).

Clary, E. G. and M. Snyder. "The Motivations to Volunteer: Theoretical and Practical Considerations." *Current Directions in Psychological Science* 8 (1999): 156-159.

Clary, E. G. and others. “Understanding and Assessing the Motivations of Volunteers: A Functional Approach.” *Journal of Personality and Social Psychology* 74 (1998): 1516-1530.

Cleary, Christopher. “Strategy for Local Law Enforcement Agencies to Improve Collection, Analysis and Dissemination of Terrorist Information.” Master’s Thesis, Naval Postgraduate School, 2006.

Cnaan, R. A. and R.S. Goldberg-Glen. “Measuring Motivation to Volunteer in Human Services.” *Journal of Applied Behavioral Science* 27 (1991): 269–284.

Compagnoni, Barry A. “The National Response System: The Need to Leverage Networks and Knowledge.” Master’s Thesis, Naval Postgraduate School, March 2006.

Covey, Stephen M. R. and Rebecca R. Merrill. *The Speed of Trust: The One Thing that Changes Everything.* New York: Free Press, 2006.

Department of Homeland Security. *National Plan to Achieve Maritime Domain Awareness for the National Strategy for Maritime Security*. October, 2005. http://www.dhs.gov/xlibrary/assets/HSPD_MDAPlan.pdf (August 24, 2007).

———. *The National Strategy for Maritime Security*. Washington D.C: GPO, September 2005. http://www.whitehouse.gov/homeland/maritime-security.html (August 14, 2006).

Dickey, Christopher. “Al-Qaeda at Sea.” *Newsweek*, January 27, 2003. http://www.accessmylibrary.com/coms2/summary_0286-22203138_ITM (November 29, 2006).

Erbe, William. “Social Involvement and Political Activity: A Replication and Elaboration.” *American Sociological Review* 29 (1964): 198-215.

Evans, Ed. “Operation Bold Tiger.” *Homeland Defense Journal* 3, no 1 (January 2005): 25-31.

Friedman, Thomas L. *The World is Flat: A Brief History of the Twenty-First Century.* New York: Farrar, Straus and Giroux, 2005.

Granovetter, Mark S. “The Strength of Weak Ties.” *American Journal of Sociology* 78 (May 1973): 1360-1380. http://www.stanford.edu/dept/soc/people/faculty/granovetter/documents/TheStrengthofWeakTies.pdf (October 8, 2006).

Grillon C., M. Pellowski and M. Davis. "Darkness facilitates the acoustic startle reflex in humans." *Society of Biological Psychology* 42 (1997): 453-460.

Hoffman, Frank G. "The New Normalcy." *Foreign Policy Research Institute* (2006). http://www.fpri.org/enotes/20060512.americawar.hoffman.newnormalcy.html (June 24, 2007).

Hutcheson, John, David Domke, Andre Billeaudeaux, and Philip Garland. "U.S. National Identity, Political Elites, and a Patriotic Press Following September 11." *Political Communications* 21 (2004): 27-50.

Knoke, David. "Commitment and Detachment in Voluntary Associations." *American Sociological Review* 46 (April 1981): 141-158.

Koppenjan, Joop and Hans-Erik Klijn. "Managing Uncertainties in Networks: A Network Approach to Problem Solving and Decision Making." In Donald P. Moynihan, *Leveraging Collaborative Networks in Infrequent Emergency Situations.* IBM Center for the Business of Government, June 2005, http://www.businessofgovernment.org/main/winners/index.asp (May 10, 2007).

Lipton, Eric. "Failure to Navigate Security Effort by Coast Guard Is Falling Short." *New York Times*, December 30, 2006. http://fairuse.100webcustomers.com/sf/nyt12_30_6_2.htm (August 18, 2007).

Liu, Melinda. "Gathering the Tribes, U.S. Field Commanders are Finally Beginning to Tap the Traditional Networks That Helped Saddam Stay in Power." *Newsweek*, June 4, 2007. http://www.msnbc.msn.com/id/18881803/site/newsweek/ (June 16, 2007).

Milward, Brinton H. and Keith G. Provan. *A Manager's Guide to Choosing and Using Collaborative Networks*. IBM Center for the Business of Government, 2006, http://www.businessofgovernment.org/main/winners/index.asp (May 10, 2007).

Moynihan, Donald P. *Leveraging Collaborative Networks in Infrequent Emergency Situations*. IBM Center for the Business of Government, June 2005. http://www.businessofgovernment.org/main/winners/index.asp (May 10, 2007).

Olsen, Marvin. "Social Participation and Voting Turnout: A Multivariate Analysis." *American Sociological Review* 37 (1972): 317-33.

Omoto, A., and M. Snyder. “Sustained Helping without Obligation: Motivation, Longevity of Service, and Perceived Attitude Change among AIDS Volunteers.” *Journal of Personality and Social Psychology* 68 (1995): 671-687.

O’Toole, Lawrence J., Jr. “Treating Networks Seriously: Practical and Research-Based Agendas in Public Administration.” *Public Administration Review* 57 (January/February 1997): 45-52.

Padilla, Peter A. and Mary R. Laner. “Trends in Military Influences on Army Recruitment Themes: 1954-1990.” *Journal of Political and Military Sociology* 30, no. 1 (2002): 113-133.

Penner, L. A. “Dispositional and Organizational Influences on Sustained Volunteerism: An Interactionist Perspective.” *Journal of Social Issues* 58 (2002): 447-467.

Penner, L. A. and M.A. Finkelstein. “Dispositional and Structural Determinants of Volunteerism.” *Journal of Personality and Social Psychology* 74 (1998): 525-537.

Roth, Susan and Lindsey J. Cohen. “Approach, avoidance, and coping with stress.” *American Psychologist* 41 (1986): 813–819.

Saegert, Susan, Gary Winkel, and Charles Swartz. “Social Capital and Crime in New York City’s Low Income Housing.” *Housing Policy Debate* 13, no. 1 (2002): 189-226. http://fanniemaefoundation.org/programs/hpd/pdf/hpd_1301_saegert.pdf (August 11, 2007).

Sallach, David L., Nicholas Babchuk, and Alan Booth. “Social Involvement and Political Activity: Another View.” *Social Science Quarterly* 52 (1972): 879-92.

Smith, David Horton, Richard D. Reddy, and Burt R. Baldwin. “Types of Voluntary Action: A Definitional Essay.” In *Voluntary Action Research*, ed. David H. Smith. Lexington, Mass: Heath, 1972.

Snow, David A., E. Burke Rochford, Jr., Steven K. Worden, Robert D. Benford, and others. “Frame Alignment Processes, Micromobilization and Movement Participation.” *American Sociological Review* 51 (August 1986): 464-481.

Snyder, Mark. “Basic Research and Practice Problems: The Promise of a ‘Functional’ Personality and Social Psychology.” *Personality and Social Psychology Bulletin* 19 (1993): 251-264.

Snyder, William M. and Xavier de Sousa Briggs. *Communities of Practice: A New Tool for Government Managers*. IBM Center for the Business of Government, November, 2003, http://www.businessofgovernment.org/main/publications/grant_reports/details/index.asp?GID=159 (May 10, 2007).

U.S. Congress. *Intelligence Reform and Terrorism Prevention Act of 2004: The Interim Implementation Plan Report in Support of the Information Sharing Environment.* Washington D.C.: United States Government Printing Office, 2004. Congressional Reports: H.Rpt. 108-796. http://www.ise.gov/Q&A%20ImplementationPlan2-3-06.pdf (November 27, 2006).

U.S. Department of Justice. "Responding to Terrorism Victims Oklahoma City and Beyond." http://www.ojp.usdoj.gov/ovc/pdftxt/NCJ183949.pdf. (August 28, 2006).

Office of Homeland Security. *National Strategy for Homeland Security*. Washington, DC: Office of Homeland Security, July, 2002. http://www.whitehouse.gov/homeland/book/ (July 20, 2006).

Warburton, J., and D.J. Terry. "Volunteer Decision Making by Older People: A Test of a Revised Theory of Planned Behavior." *Basic and Applied Social Psychology* 22 (2000): 245–257.

Watts, Duncan J. *Small Worlds: The Dynamics of Networks Between Order and Randomness.* Edited by Philip W. Anderson et al. Princeton, New Jersey: Princeton University Press, 1999.

White House. *Homeland Security Presidential Directive/HSPD-5: Management of Domestic Incidents.* February 2003. http://www.fas.org/irp/offdocs/nspd/hspd-5.html. (September 10, 2006).

———. *Homeland Security Presidential Directive/HSPD-8: National Preparedness*. December 2003. http://www.fas.org/irp/offdocs/nspd/hspd-8.html. (September 10, 2006).

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX

A. SURVEY INSTRUMENT

Hello, May I please speak with_____? How are you doing Mr(s). _____? My name is _____. I am calling from the United States Coast Guard's regional headquarters in Seattle, Washington.

When you enrolled in the Citizen's Action Network (a.k.a. Northwest Watch) you became part of an important citizen based approach to better managing our waterways.

We are conducting a survey to measure Network member's perception of the program and how it facilitates information exchange between yourselves and the Coast Guard.

This study will help us understand how to best manage the network as it grows. Your opinion is very important to us and what you tell us will be kept confidential.

In this survey, we will ask you about your experiences while in the Citizen's Action Network as well as your experiences in your community.

Can we count on your participation? (It will not take long.) (We can call back at a more convenient time.)

First we would like to ask you a few questions about yourself?

Demographics

1. What is your gender? Male / Female

2. How old are you? _____ years old

3. Are you…

A member of the Coast Guard Auxiliary
A Canadian citizen
A U.S. Citizen
A Business owner
A member of a Non-profit organization
A veteran

Just a few questions about your Citizen's Action Network affiliation

4. How long have you been in the Citizen's Action Network

years___
months____

5. Have you received any of the following (Yes/No)?

CG CAN Newsletters____
CG CAN News and information releases via email____
Phone calls from the Coast Guard for my assistance or information_____ (if so, how many times?)
I've never received anything from the Coast Guard or CAN____

Community of Practice (COP) Questions:

COP Relation Measurement
Please indicate whether in general you agree or disagree with the following statements on a scale from One to Five, One meaning you strongly disagree and Five being you strongly agree… (strongly *dis*agree 1 2 3 4 5 strongly agree)

6. Most people in the Coast Guard are basically honest and can be trusted.

7. If I have a problem with the Coast Guard's methods there is always someone to help me.

8. I would pay attention to the opinions of others in the CAN network if made available to me.

9. Most people in the Coast Guard are willing to help if you need it.

10. I feel accepted as a member of the CAN team.

11. If you are not able to complete an activity at a given time, another member of the CAN network will do it.

12. I feel strong ties with this team

13. I experience a strong sense of belonging to this team.

14. I feel proud to work in this team

15. I am glad to be a member of this team.

16. My understanding of the maritime environment has increased since becoming a CAN member.

17. My understanding of maritime threats has increased since becoming a CAN member.

18. My understanding of the Coast Guard's missions has increased since becoming a CAN member.

19. My understanding of the Department of Homeland Security's missions has increased since becoming a CAN member.

20. I am more vigilant (on the lookout) for unusual activity on or around the water since becoming a CAN member.

21. I am more likely to report unusual activity on or around the water since becoming a CAN member.

COP Mutual Understanding Measurement

On a scale of One to Five, **(strongly** *dis***agree 1 2 3 4 5 strongly agree)** do you agree or disagree that Coast Guard C.A.N managers…

22. Have a good "map" of each team member's talents and skills.

23. Know their skills and how they relate to the network's capabilities.

24. Know who in the network has specialized skills and knowledge that is relevant to the network's work.

COP Access to Parties Measurement

In terms of information sharing practices of the Citizen's Action Network, you are satisfied with the…
(strongly *dis***agree 1 2 3 4 5 strongly agree)**

25. Information that is available to you from the Coast Guard to help you perform your activities.

26. Way information is managed within the network.

27. Information sharing among network members.

COP Network Measurement

On a scale of One to Five, One being never and Five being very frequently, when performing your activities as a part of the team, to what extent do you exchange communication through…(Never 1 2 3 4 5 Very Frequently)

28. Phone calls *with* the Coast Guard?

29. Electronic tasking with the Coast Guard?

30. E-mails with the Coast Guard?

Community Engagement Measurement

31. How many years have you lived in your community? ____ years

On a scale of One to Five, One being Not at all and Five being Very much so…
(Not at all 1 2 3 4 5 Very Much So)

32. Do you feel like you are a part of your local community?

33. How closely do you follow local news and affairs in your community?

34. How often would you say that you have ideas for improving things in your community?

35. How often do you get together with people to talk about ways to improve your community?

36. How often do you participate in activities to make things better in your community?

Civic/Community Efficacy

The next set of questions deal with Neighborhood Obligations.

Do you feel that each of the following is a very important obligation, a somewhat important obligation, or not an important obligation (Not important=1, Somewhat important=2, Very important=3)?

37) Reporting a crime you may have witnessed.

38) Participating in neighborhood organizations.

39) Helping keep the neighborhood safe.

40) Helping keep the neighborhood clean and beautiful.

41) Helping those who are less fortunate.

Civic Obligations

42) Serving on a jury if called.

43) Voting in elections.

44) Keeping informed about news and public issues.

Personal Effectiveness of Community Service

Thinking about your community service activities in the past 12 months…on a scale of One to Five, One being strongly *dis*agree and Five being strongly agree, how do you feel about the following statements? (Strongly Disagree 1 2 3 4 5 Strongly Agree)

45) I felt like I made a contribution to the community.

46) I felt like part of a community.

47) I felt I could make a difference in the life of at least one person.

Local Civic Efficacy

Think about how hard it would be for you to accomplish each of the following activities, I would not be able to get this done (1), I might be able to get this done (2), I would be able to get this done (3):

48) Getting the local government to fix a pothole on my street.

49) Getting the local government to build an addition to the community center.

50) Getting an issue on the ballot for a state -wide election.

Next, we'd like to ask you about community activities you may have done in the last 12 months.

On a scale of One to Five, One being Never and Five being Very Often, How often have you…
(Never 1 2 3 4 5 Very Often)

How often have you… circle one per row please					
51. Worked on community projects	Never	Rarely	Occasionally	Often	Very Often
52. Signed a petition	Never	Rarely	Occasionally	Often	Very Often
53. Attended a political meeting or rally	Never	Rarely	Occasionally	Often	Very Often
54. Participated in any demonstrations, protests, boycotts, or marches	Never	Rarely	Occasionally	Often	Very Often

Now we have a few questions about how often you participated in the following types of community groups in the past 12 months.

How often would you say you participated in… circle one per row please					
55. A parents' association, such as the PTA or PTO, or other school support or service groups	Never	Rarely	Occasionally	Often	Very Often
56. A neighborhood association, like a block association, a homeowner or tenant association, or a crime watch group	Never	Rarely	Occasionally	Often	Very Often
57. Service clubs or fraternal organizations	Never	Rarely	Occasionally	Often	Very Often

Qualitative Questions:

-What motivated you join C.A.N.?

- What do you like about CAN?

- In your opinion, how could we improve CAN?

-Would you be willing to take part in some very specific follow up questions at a later time?

B. ADAPTATION OF WEB 2.0 APPLICATIONS TO BEST ENABLE MDA

The primary potential benefit of Web 2.0 applications for the Coast Guard is the instantiations flow of information from a maritime social network. In Web 1.0 applications, users had to visit to web pages to access information to include having to

follow a series of links (via. directories or search engines) to arrive (or not) as a desired WWW location. Now websites have the ability to push, share or multi-source distribute information to users through propagated web feeds – essentially creating dynamic information flows to unlimited audiences. Web 2.0 technologies can allow the Coast Guard to migrate from pushing information vertically through a hierarchical organization to posting and smart pulling information vertically, horizontally and independently. This transformation to Web 2.0 technologies will be a key for success within any organization, including militaries, to function in the Information Age.[153]

The Web 2.0 tool bag offers an enhanced capacity for social collaboration. An early mainstream collaboration tool, for instance, was Napster. It was one of the first large person-to-person (P2P) file sharing systems allowing users to share digital music files through a server providing an index of file locations. The service itself had no server for storage, instead, it only showed people where to find them and facilitated in downloading them from other user's computers. Napster would have been useless without its users sharing their files, because there would have been no selection of music for users to download from. Other Web 2.0 dynamics can theoretically harness the energies and collaborative input of the masses offers a new opportunity for the Coast Guard. With the appropriate internet tools applications, it could harness the broad benefits of scale free social networks (as forwarded by Barabasi) as they appear in Communities of Purpose/Interest. After all, as James Surowiecki suggests in his book *The Wisdom of Crowds*, large groups of people are smarter than an elite few, no matter how brilliant they are. He provides evidence that large groups are better at solving problems, fostering innovation and coming to wise decisions.[154]

Applying these collaborative web tools in Coast Guard Operations Centers could add significant value to maritime operations as the centers are already a hub of network

---

153 David Alberts and Richard E. Hayes. 2003. Power to the edge: Command, control in the information age. Information age transformation series. Washington, DC: CCRP Publication Series: 120. Found in, Joshua D. O'Sullivan, Thesis, A Concept of Operations for the use of Emergent Open Internet Technologies as the Basis for a Network-Centric Environment. Naval Postgraduate School (September 2006).

154 James Surowiecki. The Wisdom of Crowds. http://www.randomhouse.com/features/wisdomofcrowds/, (accessed October 9, 2006).

activity and information – albeit limited in scope and capabilities. Enabling the Coast Guard to become more network-centric is an important concept to consider as it is battling the asymmetric threat of terrorism as acknowledged in the National Plan to Achieve Maritime Domain Awareness. As such, the theory supporting "Netwar" and how to maximize networks during conflict should be considered here.

John Arquilla and David Ronfeldt coined the use of the term "Netwar"[155] to describe asymmetric conflict that is less than war. Arquilla explains that Netwar's are likely due in part to the information revolution described above. And, that the "state" may grow stronger through adaptation of a networked over a hierarchical stance,[156] but adaptation or adjustments to such a position will be difficult and time consuming.[157] He warns that actors positioned to take advantage of networking are being strengthened faster than actors embedded in old hierarchical structures.[158] Thus we can reason that protagonists need to use the strength and speed of networks to communicate and conduct decentralized operations supporting dense, "all-channel" communications among all nodes. Arquilla explains that Netwar characteristics tend to erode the power of hierarchies such that a network approach is needed to defeat a network, and the first organization to master the networked form of operations will have a distinct advantage.

1. Operations Supported by Networks

Thomas Friedman forwarded the term *Globalization 3.0* in his book *The World is Flat.*[159] He argues that individuals are no longer required to be bound to companies or nation-states to operate or influence others on a global scale. This thought is revolutionary as small groups or single persons can tap communication capabilities previously controlled only by national powers or the elite. With Globalization 3.0, he argues that information resources are becoming the most important because, unlike the

155 John Arquilla et al., *The Advent of Netwar* (Santa Monica: RAND 1996). 82. http://www.rand.org/publications/MR/MR789/ (accessed October 9, 2006).

156 Ibid, 34.

157 Ibid, 41

158 Ibid, 43

159 Thomas Friedman. 2005. *The world is flat: A brief history of the twenty-first century*. 1st ed. New York: Farrar, Straus and Giroux: 9.

resources of previous times, information is not bounded by a physical domain. An individual, or a network of individuals, can function unchained from nation-state governments or multi-national companies, thus they can compete in projecting influence unrestrained by the participants scale. One of his primary case examples was the networking conducted by the 9/11 hijackers; essentially highlighting the power of loosely associated but broadly connected social networks.

Friedman's term Globalization 3.0, and the broad power behind it can, to a large extent, be broken down into empowering Internet-based constructs. These constructs, specifically, have been dubbed Web 2.0[160] by publisher Tim O'Reilly who, along with industry leaders, held the first "where is the internet going" conference on the matter in 2004. One of the central principles forwarded at this conference was that Web 1.0 leaders who survived to see Web 2.0 did so by embracing web power to harness collective intelligence. Key Web 2.0 networking themes of importance to this thesis include:

- Control over unique, hard-to-recreate data sources
- Trusting users as co-developers
- Harnessing collective intelligence
- Architecture of participation

2. Current Social Networking Picture

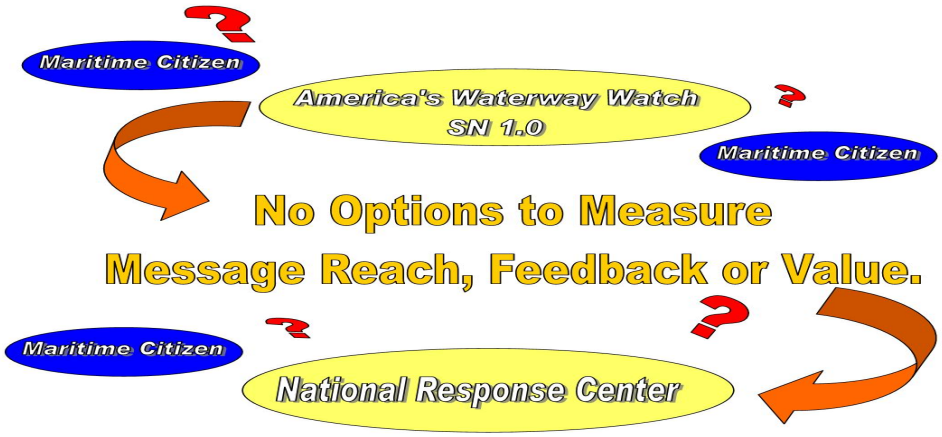
One of the greatest weaknesses cited by the 9/11 Commission was a lack of intelligence fusion between respective government agencies. The Coast Guard has developed and is building a national chain of Joint Harbor Operation Centers (JHOC) to enable tactical interagency fusion via an array of multi-agency intelligence databases and sensors. As noted in part one of this paper however, there are no databases or sensors associated with the Coast Guard's national-level outreach program called America's

160 O'Reilly – 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 October 9, 2006).

Waterway Watch. Simply, the program managers hope to attract a following by offering a web site and supplying a specialized phone number for reporting.

a. The Baseline – Social Networking 1.0

In the vernacular of this paper we can call the AWW program Social Networking 1.0 (SN 1.0) – a somewhat archaic tool which parallels the Web 1.0 limitations identified by Tim O'Reilly.[161] The AWW program limits are similar to those experienced by a single or proprietary software provider. In this analogy, participants (reporters) have to visit a massive installed base (Coast Guard Headquarters Web Site) and tightly integrated operating system (one has to call all a specific number or they can't participate) without any hope of users generating control of the AWW programming paradigm since there are no protocols for feedback or process improvement – essentially all customers are looked at as users with no opportunity for formal harnessing of collective intelligence.



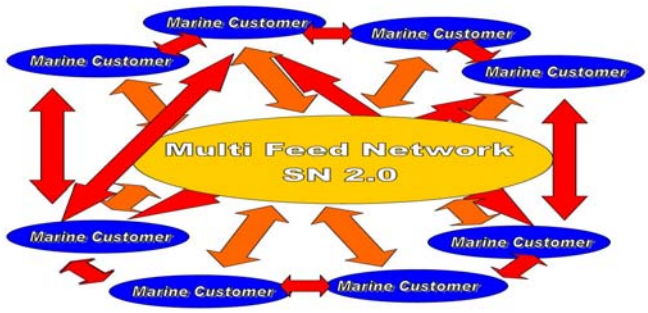
161 O'Reilly – What Is Web 2.0?

b. Evolution is the Solution

The Northwest United State's regional approach to social networking with a maritime security emphasis is called Citizen's Action Network – or SN 1.5. While not attaining the highest promises of Web 2.0 philosophy, there is a distinctive improvement over AWW's SN 1.0 levels – namely its custom integration with its users (customized to their capabilities based on location and talents) as well as the continuing opportunity for customer feedback or collective intelligence – the kind derived from highly networked scale-free or Community of Practice social networks.

c. The Next Step, SN 2.0

The potential benefits of totally integrated Web 2.0/SN 2.0 (Open Standard/web feed) applications for the Coast Guard within the emerging JHOC infrastructure is rich as it offers interoperability and agility to communicate rapidly and to a broad audience. Web 2.0 constructs provide a wealth of new opportunities in the world of information. Currently, Coast Guard networks allow for minimal information flow in part based on its prevalent use of Web 1.0 style systems and proprietary software.



The concepts and constructs inherent in Web 2.0 soft technologies will be critical to growing Coast Guard information network to support the JHOC's Network-centric philosophy. Adding the ability to groom, build and tap into scale free social structures to these applications magnifies COPs/COIs potential. Coast Guard *web feeds, portals, blogs and wikis:*

- ***Facilitates efficient information sharing internally and externally with COPs/COIs through supporting and adapting to open-standard tools and open-source systems.***

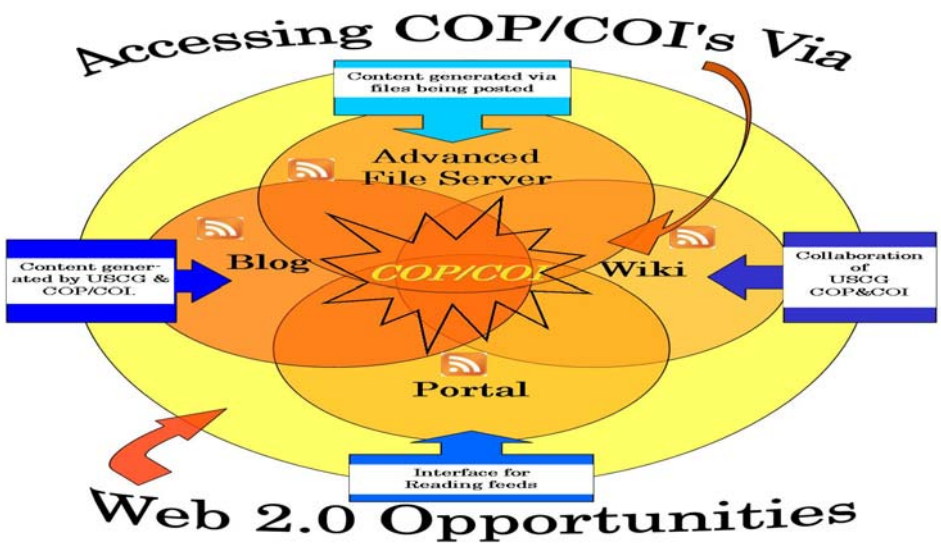
- ***Web feeds could facilitate information flow and allow information to go to heretofore unknown but valuable users.***

- ***Scale-free network of social clusters can provide decentralized content to a centralized source.***

- ***Information flows rapidly back and forth to those who want or need it.***

- ***COPs/COIs help craft their own operating picture.***

• ***COPs/COIs are not only consumers, but producers – this is highly important in the information/intelligence arena as highlighted in part one.***



There are many challenges to adopting this type of system. Network security and virus protection are of paramount concern to the Coast Guard's IT professionals. Thus, managing far flung networks with unknown backgrounds will limit the growth and/or acceptance of this new way of doing business.

d. Program comparison

O'Reilly's Stds for Web 1.0 vs 2.0	Proprietary System	Massive Installed Base	Tightly Integrated OS	Feedback/ Process Improvement	Harnessing Collective Intelligence
AWW (SN 1.0)	Yes	Yes	Yes	No	No
CAN (SN 1.5)	Yes	Yes	No	Yes	Yes
???? (SN 2.0)	No	No	No	Yes	Yes

Here, each of the SN standards are compared against Web 2.0 opportunities.

C. TAPPING CITIZEN INFORMATION RESOURCES

In its Secure Seas Strategy, the Department of Homeland Security recommends homeland security practitioners take a layered approach to maritime security. This approach includes establishing partnerships with the private sector and state and local authorities to create a system of different measures to better ensure protective layers are in place from one end of a sea-based journey to the other.[162] Much of the effectiveness of this method relies on information collection and distribution amongst myriad customers to manage today's risks because, according to the 9/11 Commission Report, it's the smart government that integrates all sources of information to see the enemy as a whole.[163]

Building and grooming partners in a layered maritime security approach is especially important as, according to the Office of the Inspector General, the Coast Guard's capabilities are currently stretched. The Annual Review of Mission Performance Report discloses that: "The Coast Guard is not meeting all of its performance goals, despite steady increases in mission hours. For the homeland security missions, the Coast Guard achieved only 26% of its goals."[164] Without significant funding or manpower on the horizon, the Coast Guard will need to fill this homeland security gap through improving, formalizing or creating processes that enhance government-to-citizen-to-government field information collecting and communications. Guidance for potential process improvements at the citizen level lay within Title 33, Code of Federal Regulations Subchapter H.[165] Promulgated under the Maritime Transportation Security

---

162 Secure Seas, Open Ports Keeping our waters safe, secure and open for business. June 21, 2004. http://www.dhs.gov/interweb/assetlibrary/DHSPortSecurityFactSheet-062104.pdf accessed September 24, 2007.

163 The 9/11 Commission Report, Final Report of the National Commission on Terrorist Attacks Upon the United States, Official Government Edition, http://www.gpoaccess.gov/911/pdf/sec13.pdf, (accessed September 24, 2006), 401.

164 Department of Homeland Security, Office of the Inspector General, "Annual Review of Mission Performance 2005," http://www.dhs.gov/interweb/assetlibrary/OIG_06-50_Jul06.pdf (accessed September 18, 2006), 4.

165 Title 33, Code of Federal Regulations (CFR), Subchapter H (Maritime Security); § 101.305 Reporting. (a) Notification of suspicious activities. An owner or operator required to have a security plan under part 104, 105, or 106 of this subchapter shall, without delay, report activities that may result in a transportation security incident to the National Response Center at the following toll free telephone: 1–800–424– 8802, direct telephone: 202–267–2675, fax: 202–267–2165, TDD: 202–267–4477, or Email: lst-nrcinfo@comdt.uscg.mil. Any other person or entity is also encouraged to report activities that may result in a transportation security incident to the National Response Center.

Act (MTSA) of 2002, these regulations include a formal system for mandatory security breech reporting requirements for owners or operators of vessels or facilities. Further, these MTSA customers' information and communications needs are serviced via methodology contained in The Domestic Outreach Plan (DOP).[166] The Coast Guard carries out its DOP information obligation to key stakeholders through Homeport, a password-protected WWW site that acts as a communication and information exchange venue. The spirit of this formal approach yields clear expectations on what security incidents are, reinforces what's important via the aforementioned Homeport system, and builds on a networked team atmosphere through Coast Guard led meetings and customer/venue visits under the MTSA's inspection guidance. The Coast Guard maintains this comprehensive approach with maritime industry leadership but has yet to formally utilize this approach amongst those millions of citizens who live, work or play along our ninety-five thousand miles of national coastline.

In its information collection relationship with our citizens, the Coast Guard depends on a passive approach to information collection called America's Waterway Watch (AWW). Established in the wake of 9/11, the program's stated goal is "…encouraging participants to simply report suspicious activity to the Coast Guard and/or other law enforcement agencies."[167] Pamphlets, a web site and word of mouth are the primary tools used by the Coast Guard to encourage citizens to report suspicious activity to the National Response Center (NRC). However, the lack of routine communications between agency and prospective vigilant citizen may be problematic to building or sustaining a well informed and networked security layer as is proposed in the aforementioned Secure Seas Strategy.

Weaknesses in the AWW system start with the special reporting phone number (1-877-24-Watch), designed to connect a caller to the National Response Center. The center's web site claims that, "Any incident related to terrorism or possible terrorist

166 The Domestic Outreach Plan for the National Strategy for Maritime Security, October 2005 (accessed May 15, 2006) Available from: http://www.dhs.gov/interweb/assetlibrary/HSPD_DomesticOutreach.pdf.

167 United States Coast Guard, America's Waterway Watch. http://www.americaswaterwaywatch.org/ (accessed September 24, 2006).

activity requires telephonic notification to the National Response Center."[168] However clear this requirement is, citizens simply have a hard time remembering the number. In an informal poll conducted by this author, 20 of 20 Coast Guard members couldn't remember the number when asked. Additionally, generating citizen vigilance on the water through messaging alone is difficult. Red Cross studies point out that people must hear a message more than 20 times before they take their first step.[169] By operating AWW as a "call us if you see something" message-driven program, the organization is risking valuable and timely receipt of field information. Broadening the AWW program to follow similar communication trends forwarded in the earlier mentioned 33 CFR and MTSA guidelines, I suggest, could greatly enhance and grow the AWW's program.

Business design researchers[170] suggest that members who belong to a formal or informal organization and work toward a common goal through informal associations are often defined as communities of practice (COP). They argue that an organization can be seen to consist of numerous, often overlapping, but rarely formally recognized communities of practice -- informal structures that exists in parallel with more formal forms of organization. Thus, citizens living in towns and cities in and around waterways who hold common interests in their environment or their community can, by definition, be considered a community of practice if the product is considered the quality or amount of actionable information coming from a community. The COP literature suggests the Coast Guard would derive positive social and business synergies above and beyond what had been planned for or designed into an organization's original design.[171] Specifically, the literature suggests leaders open a dialog between process owners and those outside

168 National Response Center, http://www.nrc.uscg.mil/terrorism.html (accessed September 24, 2006).

169 Eric E. Holdeman, Government Technology "Emergency Management Magazine Public Education: Is it Important?" August 2006. http://www.emergencymgmt.com/story.php?id=100498 (accessed September 24, 2006).

170 Eric Lesser, "Communities of practice and organizational performance," IBM systems Journal40, no. 4, Armonk: 2001, 831-842 and Etienne Wenger, "Communities of practice," The organizational frontier Harvard Business Review 78, no. 1 Boston: (January/February 2000): 139-146.

171 Found in Communities of Practice for Homeland Security, NPS NS4156 Module 3 posting by M. A. Billeaudeaux, https://www.chds.us/courses/mod/forum/discuss.php?d=4170 (accessed September 24, 2006).

these circles. They argue that reaching out helps leaders understand that they might not have the best solutions. They suggest that programmatic vision that looks beyond it own center will generate a better perspective; this includes bringing in those players who hold a periphery or secondary commitment to the issue/goal or mission. Researchers theorize that COPs have a tendency to include three layers of committed members. They suggest that the largest group is the least connected but is still very valuable to the operation and should be allowed to participate at their comfort or capability level. Many citizen based programs have adopted incorporating these recommendations -- AWW could too.

Two other active maritime security networks routinely capitalize on their community of practice recommendations.[172] The Coast Guard's regional Citizen's Action Network and their partners, the Royal Canadian Mounted Police's Coastal Watch, have achieved significant "business" results through the incorporation of many COP concepts to include face-to-face visits, formal training and consistent communications. Coastal Watch and Citizen's Action Network leadership invest in their maritime citizen networks thus capturing and putting into practice a philosophy that Thomas Jefferson spoke of nearly 200 years ago. He wrote, "I know of no safe depository of the ultimate power of the society but the people themselves..." Although he wasn't referring to maritime security, the concept makes sense. Consider, for example, the following programmatic accomplishments:

- A participant observed small vessel approach their shore from nearby island at night and without lights. After reporting the situation via the regional proscribed method, an investigation was launched on nearby island which revealed a methamphetamine lab in a pre-production phase.

- Participants were immediately placed on watch in response to a bomb threat to a major bridge. Immediate feedback from network members allowed for an instant field assessment before authorities arrived and during the investigation.

172 Etienne Wenger, "Communities of practice, The organizational frontier," Harvard Business Review, 78, no. 1 (January/February 2000): 139-146

- Member assistance was called on in locating a suspect vessel that was evading detection. RCMP called upon their Coastal Watchers and the suspect vessel was twice located and reported in transit. Information was relayed to the USCG who affected a successful apprehension.

- A CAN member called the Coast Guard after sighting a suspicious cylinder which had washed up on a community beach. The member summarily sent in digital images. The Coast Guard sent investigators to the scene and assessed it to be hazardous. The cylinder was safely removed and disposed of.

- A Canadian citizen observed and reported a decrepit vessel which matched Coastal Watch profiles. The RCMP responded to this report and apprehended 159 migrants on board.

- A man stole a 42-foot yacht and fled with a hostage. Several CAN program members were called up and put on watch. After three hours of searching with Coast Guard, marine police and CAN members, the vessel was identified and an arrest is made. The hostage was released safely.

Similar terrestrial-based, post 9/11, citizen-to-government information programs have flourished through their implementation of COP "business" processes. USA on Watch,[173] for example, empowers citizens through neighborhood watch programs which incorporate training, informational processes and volunteer hand's on work in securing neighborhoods. The Highway Watch program's mission is to have truck drivers assist in ensuring the safety and security of the nation by providing training to transportation professionals who collectively observe, assess, report and respond to items or incidents which might pose a threat to the highway system. Members are assigned numbers and use them when they report to the program's Information Sharing and Analysis Center; a component of the Department of Homeland Security information network. As the receiving point of more than 300,000 trained and uniquely identified members, the center

173 USA on Watch, http://www.usaonwatch.org/AboutUs/AboutUSAOnWatch.htm (accessed September 13, 2006).

serves as the program's analytical and communications focal point. Highway Watch and USA on Watch represent only a fraction of the many terrestrial-based "engagement" programs which utilize COP concepts to enhance their information collection mission.

The National Strategy for Homeland Security defines homeland security as "a concerted national effort to prevent terrorist attacks within the United States, reduce America's vulnerability to terrorism…" Until appropriate measures are taken at the national level, AWW will maintain itself as a maritime reporting program that can't live up to the challenges set forth in the National Strategy for Homeland Security or the Secure Seas Strategy. The passive AWW program can be improved through the program's implementation of tested, result-driven business methods identified in this paper. Through membership, communications and training the Coast Guard can greatly enhance its field information collection mission; after all, Scientia Est Potentia, "Knowledge is Power".

D. CANADIAN AND AMERICAN NATIONAL APPROACHES TO CITIZEN-BASED MARITIME SECURITY PROGRAMS – A COMPARATIVE ANALYSIS

In 1999 the Canadian Government, concerned with terrorism, wrote: "The nature of terrorism has been changing steadily since the end of the Cold War. Many factors are driving this change, including the erosion of national borders, the increasing ease of travel, the revolution in technology and the proliferation of weapons of mass destruction." More importantly the statement identified the means by which Canada could mount the best defense; it proclaimed:

> Preventing terrorist activity very much depends on the collection, analysis and dissemination of information and intelligence, and on cooperation between jurisdictions, levels of government and the private sector. [174]

Three years later Canada's southern neighbor published its National Strategy for Homeland Security. It defined homeland security as a concerted national effort to prevent

174 Safety and Security for Canada, Operational Programs, Counter Terrorism, Government of Canada's Response to the Report of the Special Senate Committee on Security and Intelligence (1999), https://www.hsdl.org/homesec/docs/zroom/cm/ns3028/csis-counterterror2002.pdf&code=c5665facbb1a45708896437d88197a10 (accessed March 11, 2007).

terrorist attacks within the United States, reduce America's vulnerability to terrorism and minimize the damage and recover from attacks that do occur."[175] To carry out these goals the administration stated that it too relies on:

> …principles of shared responsibility and partnership with the Congress, state and local governments, the private sector and the American people (my italics).

These two definitive statements highlight the commonality between each nation in its domestic efforts against terrorists. Both cite the inexorably linked and highly important broad-based intelligence collection at *all* levels of government; from the highest-paid federal professional down to the private sector and citizens of each country. While taking a common approach in recruiting all levels of societal leadership to collect, analyze and disseminate intelligence looked invitingly similar in the heady days leading into the publication of the groundbreaking U.S. Homeland Security Act (HSA) of 2002, a very decisive turn was taken by the United States radically changing America's approach to citizen-based intelligence collection.

Between the draft and final versions of the Homeland Security Act, a key and high profile program defining federal citizen engagement for collecting filed intelligence/information was dropped from further development as it was too controversial amongst some politicians and civil rights activists. Operation TIPS, a citizen information collection plan designed and proposed by the Justice Department, was killed by then House majority leader Dick Armey and others such as the ACLU[176] vowed not to let "Americans to spy on one another."[177] The follow up to these concerns was the repeal of Operation TIPS subsequently published within the HSA's own section 880 stating, "any and all activities of the Federal Government to implement the proposed

---

175 Office of Homeland Security, The National Strategy for Homeland Security (Washington D.C: Office of Homeland Security, 2002), 2. http://www.whitehouse.gov/homeland/book/index.html (accessed August 14, 2006).

176 American Civil Liberties Union, http://www.aclu.org/safefree/general/17109prs20021114.html (acessed September 13, 2007.

177 Nat Hentoff, "The Death of Operation TIPS Volunteer Spying Corps Dismissed," http://www.villagevoice.com/news/0251,hentoff,40587,6.html (accessed September 13, 2006).

component program of the Citizen Corps known as Operation TIPS (Terrorism Information and Prevention System) are hereby prohibited".[178] One author cynically noted, "Let's be real: Terrorists with half a brain aren't likely to be outsmarted by the mailman or open the door to have the gas meter read if they have bomb-making material nearby. But ordinary people, who might be reading the Koran, will. The result could be a flood of unsubstantiated and largely irrelevant tips that overwhelm law-enforcement officials already mired in data. Worst of all, the program could sow the seeds of suspicion among loyal American citizens."[179]

Important to the thesis of this comparative paper is the concept that section 880 seemingly delivered a death blow to the concept of a large, formal, federal-level centralized leadership to citizen-based LE information collection. Since the death of Operation TIPS the concept of grass roots engagement has been a strategic no show in every major post-9/11 national strategy document. Individual federal agencies have, however, cobbled together several lesser-known approached designed to pick up where TIPS left off.

While Canadians have voiced concerns over its own internal collection efforts, it has not faced the ferocious response fomented by Operation TIPS. Indeed, the Canadian Government has taken a much different approach with the spirit of grass-roots cooperation squarely planted within Canada's National Security Policy's opening chapter. It states: "The Government needs the help and support of all Canadians to make its approach to security effective. Therefore, it will introduce new measures to reach out to communities in Canada that may feel caught in the "front lines" of the struggle against terrorism."[180]

---

178 The Homeland Security Act http://fl1.findlaw.com/news.findlaw.com/hdocs/docs/terrorism/hsa2002.pdf (accessed March 6, 2007).

179 Jane Black, "Some TIPS for John Ashcroft." Found in National Security in a Post-9/11 World: The Rise of Surveillance … the Demise of Privacy? Green College University of British Columbia Ann Cavoukian, Ph.D. Commissioner, May 2003, http://www.ipc.on.ca/images/Resources/up-nat_sec.pdf (accessed March 18, 2007).

180 Securing an Open Society: Canada's National Security Policy, April 2004, http://www.pco-bcp.gc.ca/default.asp?Language=E&page=publications&sub=natsecurnat&doc=natsecurnat_e.htm#ch2 (accessed March19, 2007). Chapter 1.

The clearly divergent approaches to citizen-based intelligence collection offer a poignant opportunity to compare and contrast the opposing federal approaches in an attempt to parse out best practices. This paper will concentrate on collection efforts within the maritime domain.[181]

1. The U.S. Grassroots Maritime Intelligence Collection Program

Since the failure of Operation TIPS in the United States, proponent language within our national security strategies alluding to a positive cause and effect relationship between security and citizen engagement (beyond encouraging participation in awareness and reporting campaigns) is almost nonexistent – especially in respect to the maritime arena. For instance, the National Plan to Achieve Maritime Domain Awareness (MDA) uses the word citizen only one time to innoxiously help explain the Global Maritime Community of Interest.[182] Otherwise, the concept of citizen engagement remains elusive. The federal government as a whole, with the exception of its establishment of Citizen Corps in 2002, has largely taken a hands-off approach to encouraging citizens to engage in prevention-centric homeland security roles for reasons ranging from potential legal concerns, lack of strategic imagination or lack of time and money in developing new process.

The only national method for maritime citizen engagement to support MDA is a maritime awareness program whose concept is forwarded in The Department of Homeland Security's *Secure Seas, Open Ports Strategy*.[183] Known as America's Waterway Watch (AWW), the Coast Guard-run program simply encourages all citizens to be on the lookout for unusual or suspicious activity in and around the nation's

181 The maritime domain, according to the National Strategy for Maritime Security, is defined as all areas and things of, on, under, relating to, adjacent to, or bordering on a sea, ocean, or other navigable waterway, including all maritime-related activities, infrastructure, people, cargo, and vessels and other conveyances.

182 Global Maritime Community of Interest (GMCOI) includes, among other interests, the federal, state, and local departments and agencies with responsibilities in the maritime domain. Because certain risks and interests are common to government, business, and citizen alike, community membership also includes public, private and commercial stakeholders, as well as foreign governments and international stakeholders.

183 Department of Homeland Security, Secure Seas, Open Ports, Keeping our waters safe, secure and open for business, June 21, 2004. http://www.dhs.gov/interweb/assetlibrary/DHSPortSecurityFactSheet-062104.pdf (accessed October 5, 2006), 4.

waterways and report what they see via a toll-free hotline number. AWW's program managers rely on word of mouth, brochures and a web site as their primary means for educating the public on *what* and to *where* they should make reports.

As an awareness program, AWW provides no opportunities for the Coast Guard to follow up with citizens who might know of the AWW program, no method for tracking breaking situations, no method for routine citizen training and no real-time method for government-to-citizen communication or collaboration. Further, the Coast Guard's AWW program managers are physically and procedurally disassociated from their call center, the National Response Center (NRC). While the NRC operators field a diversity of reports from myriad national "customers", there is no current method to determine if incoming calls are outcomes of citizen's following AWW protocols, other mandated reporting methods or some other method. Thus, the AWW program can not qualify the genesis of the reporting source's call impetus. The program can not claim a cause and effect correlation and currently exists without a confirmed prevention or response success for which it can claim direct responsibility.[184]

2. Canada's Grass Roots Maritime Intelligence Collection Program

While private security companies provide security for Canada's port facilities (similar to the United States' approach) the Royal Canadian Mounted Police's (RCMP) role in maritime national security is to protect against terrorism, crime and border security, specifically at the ports. [185] [186] To help carry out their charter the RCMP formed a pan-national Coastal/Airport Watch Program specifically to, "…assist in the identification of persons, vessels, vehicles and aircraft that may constitute a threat to Canada's national security, or that are involved in illegal activities such as drug importation." According the Canadian Government, the RCMP also works directly with its national Marine Security Operations Centers "to bring together ***civilian*** and military

184 According to a Coast Guard Headquarters e-mail dated September 29, 2006, "The NRC does not differentiate between those suspicious activities calls/reports that originate from the AWW program and those originating from the requirements on MTSA regulated vessels and facilities to report suspicious activity."

185 RCMP Marine Service's Fact Sheets, http://www.rcmp-grc.gc.ca/factsheets/fact_marine_e.htm.

186 RCMP's National Ports Strategy, http://www.rcmp-grc.gc.ca/factsheets/pdfs/national_ports_e.pdf (accessed March 19, 2007).

resources necessary to detect, assess and respond to a marine security threat."[187] Coast Watch is explicitly part of this national, integrated effort.

The Coastal Watch program, like its American Counterpart AWW, attempts to gather information on all maritime-related illegal activities with an emphasis on terrorism. But the primary difference between the programs is the long term partnering, interface and legacy training opportunities afforded participants in Coastal Watch by the RCMP's Auxiliary Police Constables whereas the U.S. program, AWW, relies on pamphlets and stickers to simply promulgate the existence and reasons of utilizing a national call-in center.

3. Auxiliaries As A Citizen Interface – Different Programmatic Approaches, Differing Results

> Our role is to determine what is out there so as to provide adequate warning to government and, where appropriate, to law enforcement agencies about threats to the security of Canada, in particular from terrorism. If we lose our ability to do so, then Canadians and our allies will have been ill served.[188] -- *Ward Elcock, CSIS Director*

While both countries have professional Auxiliaries, the United States Coast Guard Auxiliary is expressly forbidden to participate in a law enforcement or intelligence gathering capacity. This is not the case in Canada where an Auxiliarist is an extension of the RCMP, Auxiliary members currently do not routinely carry side arms but are trained in their use and can carry a shotgun when in the presence of a regular RCMP officer. Auxiliary Constables carry expandable batons, Pepper Spray, Handcuffs and in some cases have the power to arrest.[189] In support of the maritime realm RCMP Auxiliary members routinely administer on-site MDA training to homeowners and businesses alike and then keep these contacts on a "beat" system with periodic face to face follow ups.

---

187 Securing an Open Society One Year Later, Progress Report on the Implementation of Canada's National Security Policy, http://www.pco-bcp.gc.ca/docs/ministers/deputypm/secure_e.pdf (accessed March 18, 2007).

188 Remarks by Ward Elcock, CSIS Director, to the National Joint Committee of Senior Criminal Justice Officials, November 22, 2001.

189 Found under s.8 of the Auxiliary Constable, Wikipedia http://en.wikipedia.org/wiki/Auxiliary_Constable, (accessed March 18, 2007).

The proximity of RCMP and regional police also add greater emphasis on intelligence collection via traditional community policing methods. Additionally, the RCMP sponsors annual 3-day training seminars for its Auxiliary who in turn disseminates follow on training to key citizens and stakeholders alike. Coastal Watch has also recently adopted a "hot contact" and information distribution system that regularly and automatically informs its "security network" of on-the-water concerns, issues or threats thus increasing the RCMP's maritime reach.[190]

The United States Coast Guard Auxiliary also participates in outreach by promoting waterway awareness. Its written goal is to attempt to enlist a great majority of 70 million recreational boaters to participate as Coast Guard eyes and ears.[191] Their method of "enlisting" help is simply "getting the word out to boaters" via pamphlets and stickers. There is no formal approach to collecting legacy contacts, maintaining routine training or consistently informing stakeholders. Since 1939 the Coast Guard Auxiliary's primary mission has traditionally been boating safety and they are *expressly forbidden* to participate in law enforcement activities. As such, their ability to collect LE information, distribute sensitive-but-important security news and adequately train potential maritime stakeholders is limited indeed.

Coastal Watch and the Canadian Government have invested much in their maritime citizen network thus capturing and putting into practice a philosophy that, ironically, American Thomas Jefferson spoke of nearly 200 years ago. He wrote, "I know of no safe depository of the ultimate power of the society but the people themselves..."[192] While the AWW program has not garnered evidence of a single successful case, Jefferson's concept can be seen in the following northwest regional Coastal Watch accomplishments:

---

190 Methods taken from the Coast Guard's regional (not national) Citizen's Action Network.

191 United States Coast Guard Auxiliary Marine Domain Awareness, http://www.americaswaterwaywatch.org/PDF/MDAwhitepaperv2.0-Feb.%202005.pdf (accessed March 18, 2007), 14.

192 Thomas Jefferson on Politics & Government, Thomas Jefferson to William C. Jarvis, 1820. ME 15:278, http://etext.virginia.edu/jefferson/quotations/jeff0350.htm (accessed September 27, 2006).

- A participant observed small vessel approach their shore from nearby island at night and without lights. After reporting the situation via the regional proscribed method, an investigation was launched on nearby island which revealed a methamphetamine lab in a pre-production phase.

- A suspect vessel was evading detection near the international border. RCMP called upon their Coastal Watchers and the suspect vessel was twice located and reported in transit. Information was relayed to the USCG who affected a successful apprehension.

- A Canadian citizen observed and reported a decrepit vessel which matched Coastal Watch profiles. The RCMP responded to this report and apprehended 159 migrants on board.

4. Building an Integrated Security System, Gathering the Bigger Picture

According to Canadian Government literature, key post 9/11 changes were made in the makeup of its intelligence services for key security instruments to work as fully integrated. For instance, the Minister of Public Safety and Emergency Preparedness now includes key departments and agencies under one ministerial roof. These ministers include CSIS and the RCMP, Emergency Management, the Canada Border Services Agency and others. Additionally, the National Security Advisor briefs the Prime Minister on national security from an integrated government-wide perspective.[193] While parallel changes were made in the Department of Homeland Security, much can be said about the unity of effort and unity of domain offered by keeping the Canadian grass-roots intelligence efforts within a single Canadian entity – the RCMP. In contrast, nearly all of the Coast Guard's authorities (with the exception of a very rare "hot pursuit") end at the waterline. Thus the RCMP's Coastal Watch enjoys consistency between its terrestrial and maritime missions while the Coast Guard's AWW straddles two intelligence domains (garnering intelligence from land-based citizens to support a marine domain challenge) and the accompanying ingrained barriers which include myriad agencies at the state and local level and the FBI at the national level. The CG/FBI relationship, for instance, has

193 "Securing an Open Society: Canada's National Security Policy," http://www.pco-bcp.gc.ca/default.asp?Language=E&page=publications&sub=natsecurnat&doc=natsecurnat_e.htm#ch2 (accessed March 18, 2007).

been greatly challenged in its cooperative approach in recent years – enough to draw public criticism and potentially degrade maritime security.[194]

5. Where Do We Go From Here?

Even before 9/11 there existed both a terror threat from Canada and a maritime nexus. Consider on December 14, 1999, Montreal resident Ahmed Ressam was arrested in Port Angeles, Washington, while attempting to cross into the U.S .carrying bomb-making material he had assembled in Canada. He claimed that the intended target was Los Angeles airport. In the eight years since Ressam's capture, there have been vast shakeups in the professional LE organizations on both sides of the border.

Since 9/11 national strategy documents in the U.S. have gone to great lengths to promote unity of effort in the collection and distribution of field intelligence. While great and lasting changes have been implemented at the federal level amongst nearly every LE agency similar efforts to collectively harness grass-roots, citizen-based intelligence have met with legal and moral challenges. Specifically, the attempt to formalize this process via Operation TIPS in the weeks following the 9/11 attacks was effectively killed leaving federal agencies scrambling to organize less conspicuous programs that now operate within sequestered domains or realms. Ultimately, as top-tier agencies and programs are experiencing the value of collective efforts, citizen-based information harnessing programs have been left behind and now operate in an uncoordinated fashion -- potentially damaging national security.

Leadership in the U.S. could learn much from its northern neighbors to establish a centralized, aggressive "hand's on" approach for its wide range of disparate citizen-based security reporting programs. While Coast Guard Auxiliary members are dedicated, their boating safety roles don't adequately prepare them to carry out the training required for a land based, intelligence-driven mission. If the AWW program was established using the best practices from Coast Watch, it could better fit well into the conceptual arguments forwarded in the National Strategy for Homeland Security which suggests Americans

194 "FBI, Coast Guard in Squabble, Investigator: Disagreements Threaten Maritime Security," http://www.cbsnews.com/stories/2006/04/03/terror/main1467671.shtml (accessed February 14, 2007). See also, Office of the Inspector General Audit Report, 06-26 March 2006.

consider volunteering to support police, join neighborhood watch groups or receive Community Emergency Response Team training among others. Providing a one-stop shopping for training, distribution and support would greatly help our nation's multi-disciplined, multi-jurisdictional approach to managing and vetting grass-roots based intelligence.

6. Summary of comparative aspects of the Canadian and U.S. models of maritime information/intelligence gathering at the citizen level to include recommendations.

Citizen-based intelligence collection/ training programs	RCMP Coastal Airport Watch	USCG America's Waterway Watch	Significant differences/ Potential for Improvement and recommendations.
Lead agency for producing or receiving intelligence to support the program's efforts/emphasis.	Royal Canadian Mounted Police	United States Coast Guard	While the RCMP works intelligence gathering directly with the Canadian Security Intelligence Service covering both terrestrial and seaborne aspects, the Coast Guard is responsible to work with a broader set of agencies within DHS or tangentially with the FBI or DOD to capture or receive intelligence about terrestrial issues. Little potential for strategic improvement here as the U.S. Intelligence community just completed a major overhaul. Tactical improvements in the U.S. along these lines will happen piecemeal at the emerging Joint Harbor Operations Centers – essentially fusion centers at major ports. Not all ports are serviced or will be serviced by a JHOC.
Scope of policing authorities	RCMP Police / Intel Authorities on both land and sea	USCG Police / Intel Authorities at sea only with a rare exception of "hot pursuit"	Limits the U.S. Coast Guard's intelligence led programs to U.S. ships and other ships in U.S. waters. Authorities include activities in ports and some oversight with activities at some mandated U.S. port facilities. RCMP enjoys a "fluid" sea-to-shore seamless program advantage. Little potential for strategic improvement here as the U.S. legal authorities would have to dramatically shift in line with the RCMP model. Until then, the best chance for success lies in close CG partnering with state and local police who have a maritime role. With 1,000's of these agencies nationally, tendering a formal approach capturing full cooperation will be difficult. In major port cities joint participation by multiple agencies in the JHOC is paramount.
Program's Law	RCMP	Coast Guard	RCMP Auxiliary Constables enjoy the training and joint law

Enforcement emphasis	Auxiliary Constables	Auxiliary	enforcement stance with the RCMP. RCMP AC's have some LE capacity while the Coast Guard Auxiliary, organized and trained primarily as a search and rescue force multiplier, does not easily fit into the "role" of leading intelligence-led policing effort. Of all the program opportunities this might have the most impact on improvement on the U.S. side. USCG Auxiliary members could be utilized in a more LE specific role if they were trained by regional land-based intelligence gathering or police services along the lines of the RCMP AC training program. However simple on paper, this programmatic leap would face stiff resistance from Auxiliary and USCG program managers as any suggestion of Auxiliary participation in LE activities has been ardently avoided since the Auxiliary program's inception in 1939. Another option would be to correlate the USCG citizen based intelligence collection needs to more of a state sponsored program (like is being run by the New Jersey State Police). A state/federal collective approach to an all-domain systematic approach for grass roots intelligence collection could realistically become an outcome of a forward looking HSOC.
Watch / Callout Program training	RCMP AC members train citizens and carry out routine follow up as well as primary POC for program	Auxiliary supports training effort via distribution of pamphlets and marina visits. No emphasis for citizen visits, no POC in region. National toll free reporting number emphasized.	Obvious differences include the invested responsibilities of RCMP ACs to tend to a citizen-based population offering a consistent interface to support the larger program. The RCMP offers annual 3 day training sessions. The U.S. Auxiliary, in contrast, routinely promotes the use of the toll free reporting number as its primary mode of engagement. There have been inconsistent attempts at regional "training" intended to indoctrinate Auxiliary members on the threats to our national waterways in the post 9/11 environment. The training here differs as the RCMP AC's training includes local RCMP policing trends specific to the AOR represented. The U.S. version offers a "canned" national approach with little emphasis on police-led intelligence tailored to the region. The training differences, like the law enforcement oversight, offers the U.S. program tremendous opportunity for improvement by simply reaching out to specific citizens in strategic areas instead of the current shotgun effort employed now and by offering a regional POC for those selected to be reached/educated.
Toll Free Reporting number.	RCMP offers report collection numbers tailored for each province.	The Coast Guard offers one national reporting number	The RCMP call centers also act as the point of contact for Airport-related citizen reports essentially spanning terrestrial and maritime issues. The Coast Guard call center carries no terrestrial-based call in responsibilities. Other call centers collecting citizen reports exist, such as Highway Watch, but they aren't connected to the CG's and there remains no national call center for collecting "all hazard/all domain"

			reports. The regional differences in hosting many call centers vice one might support an emphasis of RCMP to tailor its regional approaches to grass-roots education and intelligence collection. Notably, the Canadian model might benefit from an information collection/distribution "economy of scale" in that it endeavors to collect both maritime and terrestrial reports – essentially aligning the model with the RCMP's dual LE role. The U.S. call center might indeed benefit by merging watch center. For instance, the U.S. trucking watch program, Highway Watch, has 1000's of trucks onboard port facilities across the country. However, Highway Watch does not cross train their "watchers" on port specific issues and they don't formerly share info or call the CG's watch center. This is also true for the reverse; the CG center does not have a protocol to inform or work with the Highway Watch national reporting center despite their common mission and incredibly close proximity (both are located in the same city).

> He knows that his task as the Director of National Intelligence is to make certain that America stays ahead of this enemy and learns their intentions before they strike. He knows that we must stop them from harming our citizens; that the most important task of this government of ours is to protect the American people.
>
> President George W. Bush
> At the Swearing-In of Mike McConnell
> Director of National Intelligence
> February 20, 2007

7. Recommendations

Since 9/11 national strategy documents have gone to great lengths to promote unity of effort in the collection and distribution of field intelligence. While great and lasting changes have been implemented at the federal level amongst nearly every LE agency similar efforts to collectively harness grass-roots, citizen-based intelligence has met with legal and moral challenges. Specifically, an attempt to formalize this process in the weeks following the 9/11 attacks was effectively killed leaving federal agencies scrambling to organize less conspicuous programs that operate within sequestered domains or realms. Ultimately as top-tier agencies and programs are experiencing the

value of collective efforts, citizen-based information harnessing programs have been left behind and now operate in an uncoordinated fashion which is potentially damaging to national security.

This paper compares two federally based collection programs, discusses the ramifications of their operations and suggests steps toward improvements in line with concepts forwarded in the National Strategy for Homeland Security.

a. Centralization of a Multi-Jurisdictional Approach to Private Citizen Information Gathering

The Homeland Security Act of 2002[195] reshaped the role and powers of many traditional and emergent law enforcement disciplines. Broad changes to federal law enforcement elements, such as the re-shuffling of national intelligence community, are among the most obvious. These efforts conceptually streamlined the way anti-terror information is shared, managed and analyzed to best fight the nation's Global War on Terror (GWOT). These changes, among others, signaled a sea change in post-9/11 intelligence vetting towards a more "collective" or shared philosophy as evidenced, for instance, by the funding and staffing of state fusion centers[196] or the establishment of the National Counterterrorism Center.

While the centralization of a multi-jurisdictional approach to collective information is noteworthy and seemingly effective (as we haven't had a major domestic terror attack since 9/11) lesser known grass-roots-based entities, supporting citizen-based information collection efforts such as Highway Watch,[197] or USA on Watch,[198] receive federal funding but remain fragmented, non-centralized and non-standardized. The random status of these well-intentioned yet disparate domestic-based intelligence gathering groups promises tremendous upside; yet there's been little effort beyond some

---

195 The Homeland Security Act of 2002, http://fl1.findlaw.com/news.findlaw.com/hdocs/docs/terrorism/hsa2002.pdf (accessed March 6, 2007).

196 Department of Justice, Fusion Center Guidelines, http://it.ojp.gov/documents/fusion_center_executive_summary.pdf (accessed March 6, 2007).

197 Highway Watch, http://www.highwaywatch.com/, (accessed March 6, 2007).

198 USA on Watch, http://www.usaonwatch.org/AboutUs/AboutUSAOnWatch.htm (accessed September 13, 2006).

regional cross referencing successes, to formalize, recognize and implement a national, multi-disciplinary strategy to capitalize on not only the intelligence potential, but the educational and enlightenment opportunities afforded citizens who take part in such networking endeavors.

This paper proposes that, through a brief comparative and data analysis, that these programs should be collectively managed and uniformly directed for maximum efficiencies and broad potential to supporting all post 9/11 intelligence and police agencies at every level.

b. History

While it's been obvious to national HS leadership that law enforcement and the judiciary are vital in the terror/criminal investigative or preemptive functions, securing the homeland within the bounds of constitutionally protected individual rights has been a visceral topic spurring contentious debate beginning within days following the 9/11 attacks. A key element appearing as part of the groundbreaking Homeland Security Act of 2002, for instance, was dropped from further development as it was too controversial amongst some politicians and civil rights activists. Operation TIPS, a citizen information collection plan designed and proposed by the Justice Department, was killed by then House majority leader Dick Armey and others such as the ACLU[199] vowed not to let "Americans to spy on one another."[200] The follow up to the concerns was the repeal of Operation TIPS within the Act's own section 880 which states that, "any and all activities of the Federal Government to implement the proposed component program of the Citizen Corps known as Operation TIPS (Terrorism Information and Prevention System) are hereby prohibited."[201]

Operation TIPS or any other federal level program supporting citizen's as information or intelligence gatherers never resurfaced. Important to the thesis of this

199 American Civil Liberties Union, http://www.aclu.org/safefree/general/17109prs20021114.html (accessed September 13, 2007.

200 Nat Hentoff, "The Death of Operation TIPS Volunteer Spying Corps Dismissed," http://www.villagevoice.com/news/0251,hentoff,40587,6.html (accessed September 13, 2006).

201 The Homeland Security Act http://fl1.findlaw.com/news.findlaw.com/hdocs/docs/terrorism/hsa2002.pdf (accessed March 6, 2007).

paper is the concept that section 880 seemingly delivered a death blow to the concept of a larger, formal, federal-level leadership to citizen-based LE information collection. Since the death of Operation TIPS the concept has been a strategic no show in every major post 9/11 national strategy document.

In the meantime, lesser profile citizen-to-government intelligence collection and reporting processes have been launched by several HS and police agencies to fill the void left by Operation TIPS -- built on laws (such as the Violent Crime Control and Law Enforcement Act of 1994)[202] that were already on the books. Now a handful of closely related programs fill the mission void and service a variety of disciplines and agencies.

I will attempt to demonstrate in the following paragraphs that these "individual" programs are at risk of ultimately becoming stuck within operational or mission "silos". Without a national standard or guidance to work from, these citizen based programs will not be able to reach their full potential as viable options within the GWOT tool chest.

c. Organizations

USA on Watch,[203] for example, is organized by the non-profit National Sheriffs' Association. Its goal is to empower citizens through neighborhood watch programs while providing standardized approaches to implementing terrestrial, community level programs across the nation. Within months of 9/11, Attorney General John Ashcroft announced the expanded mission for the National Sheriff's Association's National Neighborhood Watch (NWW) program. Ashcroft pledge $1.9 million in federal funds to help the association double the number of participant groups to 15,000 nationwide[204] claiming the program was vital for fighting crime and terrorism. By default, it seems USA on Watch has become the surrogate or the Department of Justice's

---

[202] Library of Congress, http://thomas.loc.gov, (accessed September 13, 2006).

[203] USA on Watch, http://www.usaonwatch.org/AboutUs/AboutUSAOnWatch.htm (accessed September 13, 2006).

[204] "Attorney General Ashcroft Announces Neighborhood Watch Campaign," http://www.usafreedomcorps.gov/about_usafc/newsroom/announcements_dynamic.asp?ID=113 (accessed September 13, 2006).

fallback to the failed implementation of Operation TIPS; ostensibly taking the form of a politically acceptable non-profit organization. This conceptual leap – from a neighborhood crime reporting program to one with a formal federalized mission – can be detected in this DOJ quote pulled from USA on Watch's website:

> National Neighborhood Watch is a simple program of neighbors looking after neighbors, and in doing so, you are looking out for your nation. More than 30 years later, National Neighborhood Watch has re-invented itself in a time when we needed it more than ever, and today, it remains our nation's flagship citizen-partnership program.[205]

While the DOJ would seemingly have USA on Watch ramp up to a pan-organizational/pan-national program, the USA on Watch program itself does not identify counter terrorism information collection as a component of its service nor does it take into account multi-disciplinary homeland security concerns (i.e. threats in the maritime, highway or air domain for instance). In short, despite DOJ's insistence at calling USA on Watch the nation's "flagship" citizen-partnering program, it comes up woefully short on mission diversity or depth -- concentrating instead on championing neighborhood crime reporting as its modus operandi.

Another significant attempt at utilizing citizen-based reporting outside of an "all hazards" federal approach is through the Highway Watch program. Highway Watch is administered by the American Trucking Associations under a cooperative agreement with the U.S. Department of Homeland Security. The program's mission is to assist in ensuring the safety and security of the nation by providing a team of trained truck drivers (or other related industry individuals) who collectively observe, assess, report, analyze and respond to items or incidents which might pose a threat. The "nerve center" of this program is the Highway Information Sharing and Analysis Center (HISAC).

As the information receiving point of more than 300,000 trained and uniquely identified participants, the HISAC serves as an analytical and communications

focal point for the federally funded program. However, when questioned on the program's multi agency network capabilities, the answers tended toward work in progress. Consider this query to the Coast Guard's National Response Center (NRC -- only a few miles away from the Highway Watches "Sharing" and Analysis Center) watch supervisor about their relationship with HW.

> The NRC currently doesn't have an existing relationship with the Highway Watch program. In the past some of our watchstanders have gone on to receive training from the Highway Watch program, but we don't have an existing MOA or MOU with them that I'm aware of. This is something that we will take a serious look at as it appears to be a viable watch similar in scope to AWW.[206]

This relationship (or lack thereof) is highly important when one considers the tens of thousands of trucks which everyday service this nation's 361 ports, ships and containers. Every truck that finds its way aboard a USCG regulated port facility when moving port cargo falls into each part of the NRC and HISAC mission – but the programs aren't working together! Certainly, a formal relationship between DHS's Highway Watch and DHS's USCG NRC could provide intelligence-based, cross-referenced, anti-terror synergies well above and beyond what is currently taking place. The current state of these programs, I suggest, reflects a similar state of affairs among our pre-9/11 federal LE agencies. The following excerpt was taken from the 9/11 Commission Report:

> Earlier in this report we detailed various missed opportunities to thwart the 9/11 plot. Information was not shared, sometimes inadvertently or because of legal misunderstandings. Analysis was not pooled. Effective operations were not launched. Often the handoffs of information were lost across the divide separating the foreign and domestic agencies of the government. However the specific problems are labeled, we believe they are symptoms of the government's broader inability to adapt how it manages problems to the new challenges of the twenty-first century. The agencies are like a set of specialists in a hospital, each ordering tests, looking for symptoms, and

[205] Message from the Department of Justice to USA on Watch members as displayed on USAOW's website, http://www.usaonwatch.org/Messages/AMessageFromTheDepartmentOfJustice.php (accessed March 6, 2007).

[206] AWW is America's Waterway Watch. Yet another federally funded program with limited ties to other programs. Text was taken from Email received by author dated September, 19, 2006.

prescribing medications. What is missing is the attending physician who makes sure they work as a team.

While USA on Watch and Highway Watch represent only two of dozens of terrestrial-based "engagement" programs, they are limited in their scope, capabilities, training, technical support and information distribution.

d. Where Do We Go From Here?

Much like the post 9/11 shakeups in the professional LE organizations, a similar effort needs to be taken to establish a centralized and layered approach to grass roots security reporting programs. Once established, it would fit well into the arguments forwarded in the National Strategy for Homeland Security which defines homeland security as "a concerted national effort to prevent terrorist attacks within the United States, reduce America's vulnerability to terrorism, and minimize the damage and recover from attacks that do occur." To carry out these goals the administration relies on "…principles of shared responsibility and partnership with the Congress, state and local governments, the private sector and the American people".[207] (my emphasis)

My recommendation is that the Department of Justice takes the lead to establish guidelines, training and logistics support in servicing a national citizen based reporting mechanism. It could create a single web portal that services all states and all agencies (federal, state and local) as a clearing house for subordinate programs to work from. Calls or reports of intelligence information should be taken from one central source and vetted appropriately (this is the strategy the NRC uses with its 1-888-24-watch phone number) to fusion centers or other HS entity with appropriate jurisdiction.

8. Conclusion

The National Strategy suggests Americans consider volunteering to support police, join neighborhood watch groups or receive Community Emergency Response Team training among others. While this call to service exists and has been headed by 1,000's, there remains no formal, cross-disciplined federal effort to capture and

[207] The National Strategy for Maritime Security. Washington D.C: Office of Homeland Security, September 2005. http://www.whitehouse.gov/homeland/maritime-security.html (accessed August14, 2006), 2.

adequately distribute collected information. Providing a one-stop shopping for training, distribution and support would greatly help our nation's multi-disciplined, multi-jurisdictional approach to managing and vetting grass-roots based intelligence.

INITIAL DISTRIBUTION LIST

1. Defense Technical Information Center
   Ft. Belvoir, VA

2. Dudley Knox Library
   Naval Postgraduate School
   Monterey, CA

3. Mr. Dana Goward
   United States Coast Guard (CG-52)
   Maritime Domain Awareness,
   Washington D.C.

4. Captain Kevin Cook
   Thirteenth Coast Guard District
   Seattle, WA

5. Captain Bill Devereaux
   Thirteenth Coast Guard District
   Seattle, WA

6. Captain Mark D'Andrea
   Thirteenth Coast Guard District
   Seattle, WA

7. Commander Christopher Woodley
   Thirteenth Coast Guard District
   Seattle, WA