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THESIS

THE IMPACT OF CONTEXTUAL BACKGROUND FUSION ON PERCEIVED VALUE AND QUALITY OF UNCLASSIFIED TERRORISM INTELLIGENCE

by

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March 2007

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13. ABSTRACT (maximum 200 words)

There are millions of police, fire, public health, emergency medical, emergency management, and public sector homeland security professionals ready and willing to assist in the global war on terror (GWOT) and current strategies to strengthen homeland security include the provision of unclassified intelligence products to these non traditional recipients (NTR). Simply pushing intelligence products to NTR is not enough, NTR must possess adequate contextual background in order to effectively utilize intelligence provided by the Intelligence Community (IC) in implementing strategies in information driven and risk based prevention and response. Given the diversity of NTR, distribution of "one size fits all" products ensures that the intelligence will fit no one's needs.

This thesis researches the impact of intelligence contextual background fusion (CBF) through the use of hyperlink technology and evaluates the likelihood of hyperlink acceptance by NTR. By utilizing DHS and FBI customer satisfaction survey questions in "quality" and "value" factors along with previously validated Technology Acceptance Model (TAM) questions in "ease of use" and "usefulness" factors, this research finds that CBF significantly improves both perceived value and quality, and finds that NTR overwhelmingly prefer a CBF product. NTR broadly accepted hyperlink technology in this application.

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THE IMPACT OF CONTEXTUAL BACKGROUND FUSION ON PERCEIVED VALUE AND QUALITY OF UNCLASSIFIED TERRORISM INTELLIGENCE

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iii

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ABSTRACT

There are millions of police, fire, public health, emergency medical, emergency management, and public sector homeland security professionals ready and willing to assist in the global war on terror (GWOT) and current strategies to strengthen homeland security include the provision of unclassified intelligence products to these non-traditional recipients (NTR). Simply pushing intelligence products to NTR is not enough, NTR must possess adequate contextual background in order to effectively utilize intelligence provided by the Intelligence Community (IC) in implementing strategies in information driven and risk based prevention and response. Given the diversity of NTR, distribution of "one size fits all" products ensures that the intelligence will fit no one's needs.

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TABLE OF CONTENTS

LIST OF FIGURES

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LIST OF TABLES

LIST OF SYMBOLS, ACRONYMS, AND/OR ABBREVIATIONS

CBF	Contextual Background Fusion
CEO	Chief Executive Officer
CHDS	Center for Homeland Defense and Security
CIA	Central Intelligence Agency
COP	Community Oriented Policing
DHS	Department of Homeland Security
DNI	Director of National Intelligence
DOD	Department of Defense
EMS	Emergency Medical Services
FBI	Federal Bureau of Investigation
FBINA	Federal Bureau of Investigation National Academy
FIG	Field Intelligence Group
FOUO	For Official Use Only
GWOT	Global War on Terror
H_o	Null Hypothesis
H_1	Alternative Hypothesis
HSDL	Homeland Security Digital Library
HSIN	Homeland Security Information Network
IC	Intelligence Community
IDOL	Intelligence Data Operating Layer
JRIES	Joint Regional Information Exchange System
JTTF	Joint Terrorism Task Forces
LEO	Law Enforcement Online
MIPT	Memorial Institute for the Prevention of Terrorism
NATO	North Atlantic Treaty Organization
NPS	Naval Postgraduate School
NTR	Non Traditional Recipients
NYPD	New York Police Department
ODNI	Office of the Director of National Intelligence
PDF	Portable Document Format
RISS	Regional Information Sharing System
SME	Subject Matter Experts
SPSS	Statistical Package for the Social Sciences
STIC	Illinois State Terrorism Information Center
TAM	Technology Acceptance Model
TEWG	Terrorism Early Warning Group
TKB	Terrorism Knowledge Base
TRA	Theory of Reasoned Actions
UASI	Urban Area Security Initiatives
US	United States
WMD	Weapon of Mass Destruction

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I. INTRODUCTION

A. PROBLEM STATEMENT

Multiple initiatives, including the Homeland Security Information Network (HSIN) and the Joint Regional Information Exchange System (JRIES), as well as supporting directives such as National Capability Specific Priority 3.2.1: Strengthening Information Sharing and Collaboration Capabilities, have ensured that non-traditional recipients (NTR) in law enforcement, fire, emergency medical services (EMS), emergency management, public health and the private sector are receiving unclassified intelligence products from multiple sources including the Department of Homeland Security (DHS), the Federal Bureau of Investigation (FBI), Fusion Centers, Joint Terrorism Task Forces (JTTF), and Terrorism Early Warning Groups (TEWG). However, simply pushing intelligence products to non traditional recipients (NTR) is not enough. Recipients must possess enough contextual background to effectively utilize the intelligence products in order for this strategy to be successful. Unclassified intelligence distribution must be useful, easy to use, deliberate and coordinated, maximizing recipients' ability to effectively utilize the intelligence, regardless of the time of day, day of week, or location of the recipient. We can do better in this regard. As discussed in a Markle Foundation Working Group Report, Networking of Federal Government Agencies with State and Local Government and Private Sector Entities, "…adequate context for homeland security providers to effectively utilize information is specific, tailored for each local entity, rapidly disseminated, and does not overburden recipients with vague or irrelevant information."[1] The Final 9/11 Commission Report noted the importance of context in decision making, reporting that the President was provided intelligence "news without… much context" prior to September 11, 2001, contributing to a failure of decision makers to recognize that Bin Laden posed a "novel danger."[2] A

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[1] Zoë Baird, *Creating a Trusted Network for Homeland Security* (New York, New York: The Markle Foundation, 2003), 56,
http://www.markle.org/downloadable_assets/nstf_report2_part_two.pdf#search=%22adequate%20contextual%20background%20homeland%20security%22 (accessed September 24, 2006).

[2] Thomas Kean et al, *The 9/11 Commission Report*. (Washington, D.C.: United States General Accounting Office, 2004), 119,
http://files.findlaw.com/news.findlaw.com/hdocs/docs/911finalrpt/911report.pdf. (accessed January 27, 2006).

similar lack of context in the evaluation of Iraq intelligence assessments contributed to a failure to understand Saddam Hussein's perception of the outside world.[3] At the local level, in 2005, Police Chief Patrick Miller found that "There is profound belief amongst law enforcement leaders in California that the essential mechanisms for information sharing are poor at best and arriving at some consensus on how to fix that problem was far more important than examining leadership models and future impacts."[4] The 2007 Department of Homeland Security Appropriations Act reinforces this charge for the Department of Homeland Security (DHS), documenting their responsibility to "…develop better methods for the sharing of intelligence with State and local law enforcement agencies…" with similar concerns, the General Accounting Office has identified at least 11 separate information sharing authorities and initiatives since 9/11.[5,6]

These findings and directives make it clear that one mission of the federal government is to effectively involve all public safety providers in homeland security through improved information sharing. Effective involvement of NTR would in part result in an improved disaster response system, reduction of man made disasters, and "fusion" of emergency response, preparedness, recovery, mitigation, and critical infrastructure protection.[7] Critical decision making is not limited to Chiefs of Police, Fire or Public Health, but includes professionals at every level of organizations. In fact, those "on the street," maintain the most public contact, and as such, make some of the most critical homeland security decisions. While the media and public may focus on police chiefs, command officers, detectives, or other high visibility law enforcement

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[3] Christopher Andrew, "Intelligence Analysis Needs to Look Backwards before Looking Forward," *History and Policy*.org, 1, http://www.historyandpolicy.org/archive/pol-paper-print-23.html (accessed May 19, 2006).

[4] Patrick Miller, *How Can We Improve Information Sharing Among Local Law Enforcement Agencies*, Master's Thesis, Naval Postgraduate School, Monterey, California, March 2005.

[5] *Department of Homeland Security Appropriations Act, 2007,* H.R. 5441, 109, 2, July 17, 2006, S7632, https://www.chds.us/courses/file.php/112/moddata/forum/742/13414/DHS_Approp_Bill.txt (accessed August 22, 2006).

[6] Government Accountability Office, "Information Sharing the Federal Government Needs to Establish Policies and Processes for Sharing Terrorism-Related and Sensitive but Unclassified Information," *United States Government Accountability Office Report to Congressional Requestors* 6, no. 385 (March 17, 2006): 9, http://www.gao.gov/new.items/d06385.pdf (accessed May 25, 2006).

[7] *DEPARTMENT OF HOMELAND SECURITY APPROPRIATIONS ACT, 2007,* H.R. 5441, *Senate Debate on the Department of Homeland Security Appropriations Act 2004*, 1.

positions in homeland security, patrol officers have consistently been shown to have the greatest impact on crime. As described by Captain Dennis Potter, Operations Commander for the Columbine school shootings, "When something *really bad* happens, the initial response strategies are developed from the front seat of a patrol car, not from a command officers desk…"[8] Captain Potter's observation reflects an understanding that intelligence is critical in day to day tactical decision making, not just in long term strategic planning. Research documents what police executives know about the critical nature of street level operations, finding that 80% of crimes are solved by patrol operations, not detective work.[9] Whether planning long term strategic or short term tactical operations, it is critical to ensure that street level decision makers have the intelligence they need. This is the audience of unclassified intelligence operations, and while it may not be practical to provide classified intelligence to these millions of professionals, it is imperative that they are provided the very best unclassified intelligence possible.

This research does not attempt to determine whether providing classified or unclassified intelligence to NTR is an effective strategy. The choice to share unclassified intelligence products has already been made; this research seeks to identify the impact of implementing contextual background fusion (CBF) with intelligence already provided to NTR on the perceived value and quality of that intelligence. Bill Nolte, Director of Education and Training, Office of the Director of National Intelligence, reflected on the need to ensure intelligence usefulness, "We are not in the secrets business; we are in the information business… The buggy whip manufacturer who survived realized he was in the transportation business."[10] This research goes further, contending that we are in neither the secrets, nor information business, but the decision-making business. If intelligence products do not improve decision making, the IC might as well produce

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[8] Dennis Potter, *The First Three Minutes: Law Enforcement's Role in Crisis Management* (Fairfax, Virginia: Commission on Accreditation for Law Enforcement Agencies, 2006), 1, http://64.233.187.104/search?q=cache:0Y6G1XiUjgkJ:www.calea.org/newweb/newsletter/No82/first3minu tes.htm+dennis+potter+the+first+three+minutes&hl=en&gl=us&ct=clnk&cd=1. (accessed October 7, 2006).

[9] Tom O'Conner and Paula Baker, *Police in Society Syllabus. (*Raleigh, North Carolina: Wesleyan College, 2005), 1, http://faculty.ncwc.edu/toconnor/205/205lect08.htm (accessed October 18, 2006).

[10] Robert Nolte, "Remarks to Center for Homeland Defense and Security Cohorts 0503, 0504" (lecture, Naval Postgraduate School, Monterey, February 27, 2006).

buggy whips. This research addresses the need for contextual background by decision makers, as well as the needs of the IC, who depend upon continued funding by decision makers.

Policy demands that more information be shared; for that information to be effectively utilized, decision makers must perceive both value and quality in that information.[11] This research does not fully address defining the needs of non-traditional intelligence recipients, another critical opportunity for research, but narrowly focuses on the impact of CBF of open source information sources onto unclassified intelligence through hyperlink technology. The need for contextual background is evident at every level of decision making; in confirmation hearings, National Director of Intelligence nominee General Hayden reflected on lack of context in decision making in response to questioning by Senator Feinstein: "One key one that I wanted to mention when the chairman was talking about it, the Iraq WMD estimate was essentially worked in a WMD channel. *It was absent a regional or cultural context.* We are not doing that now…We're not doing that on Iran."[12] (Emphasis added)

Understandably, in the midst of terrorist attack, when contextual background is most needed by decision makers, those with personal knowledge of relevant context and background are least available to the homeland security professionals in the approximately 18,000 law enforcement jurisdictions who may seek the information, let alone other homeland security disciplines; professionals who will use whatever context and background is available to them for their decision making. As it was on 9/11, police chiefs, fire chiefs, private security, emergency medical services and public health leadership should not expect return phone calls from any federal or state agency that

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[11] Maryam Alavi, "An Assessment of the Concept of Decision Support Systems as Viewed by Senior-Level Executives," *MIS Quarterly* 6, no. 4 (December 1982): 1-9
http://www.jstor.org.libproxy.nps.navy.mil/view/02767783/ap010024/01a00040/7?searchUrl=http%3a//www.jstor.org/search/BasicResults%3fhp%3d25%26si%3d1%26Query%3dperceived%2bvalue%2bin%2bdecision%2bmaking&frame=noframe&currentResult=02767783%2bap010024%2b01a00040%2b0%2cFF03&userID=837833b1@nps.navy.mil/01cc99333cb9210c8aec98ea&dpi=3&config=jstor. (accessed July 21, 2006).

[12] Senate Select Committee on Intelligence, *Hearing of the Senate Select Committee on Intelligence on the Nomination of General Michael Hayden to be the Director of Central Intelligence,* 109-112, May 16, 2006, 75-76, http://www.fas.org/irp/congress/2006_hr/051806transcript.pdf (accessed September 5, 2006).

might be able to provide contextual background, as these agencies will be inundated by requests and operational support requirements. When information is most needed, individuals with the contextual background will be least available, busy instead supporting their home agencies in crisis management. Homeland Security professionals looking for contextual background are left to their own resources to obtain the information they need, potentially from questionable Internet sources.

In one effort to emphasize the importance of context, the U.S. Government Printing Office/CQ Congressional Reporting Service citations include the phrase "Providing government documents on demand, in context" explicitly acknowledging the critical relationship between information sharing and context. Intelligence producers must also provide intelligence "on demand, in context," unequivocally affirming the relationship between effective information sharing and context.

Providing unclassified intelligence "on demand, in context" is critical for millions of employees in NTR disciplines who incorporate that context into day to day decision making in public contacts, policy development, strategy and tactics. In the absence of CBF by intelligence producers, open Internet searches of unvetted sites by intelligence recipients can prove not only unreliable, but entirely inaccurate. For instance, a Google search that might be completed by a homeland security professional searching for contextual background on aircraft use in Islamic terrorist attacks, "Islamic terrorists kamikazes weapon aircraft" leads to a "Non Aligned Press Network" story where it is reported that the planes on 9/11were flown utilizing remote controls by individuals in American government. False Internet postings such as this are common enough that the U.S. State Department attempts to identify such misinformation on USINFO.STATE.GOV.[13] This webpage highlights the danger of utilizing unvetted, open searches for contextual background; If the intelligence producer fails to provide CBF with their product, NTR may find very authentic looking information on the Internet that, when combined with timely, accurate and actionable intelligence, produces poor decisions.

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[13] United States State Department, *Did a Plane Hit the Pentagon?* (Washington, D.C.: Department of State, 2005), 1, http://usinfo.state.gov/media/Archive/2005/Jun/28-581634.html (accessed September 15, 2006).

The context and background utilized by decision makers must be reliable, vetted information that is perceived as high quality and valuable, and it must be consistent with information being utilized by the Department of Homeland Security (DHS), the Federal Bureau of Investigation (FBI), the military, and other state, local and federal homeland security professionals. Through CBF, the IC can ensure that contextual background used NTR is reliable, vetted, and consistent with the hermeneutic of the producing agency. The IC must know if incorporating a CBF system with intelligence products provided to NTR will also improve the perceived value and quality of that intelligence.

B.   SPECIFIC RESEARCH OBJECTIVE

The overall objective of this research is to improve the United State's ability to identify and mitigate terrorist threats by examining the impact of CBF on the perceived value and quality of intelligence products.   DHS and FBI provide unclassified intelligence to NTR and routinely request feedback on perceived value and quality as part of the intelligence cycle focused on continual counter terrorism improvement. If CBF is shown to improve DHS/FBI defined value and quality factors, the technology utilized must be evaluated for technology acceptance by NTR. Technology Acceptance Model research has shown that technology must be perceived as both easy to use and useful if it is to be accepted for widespread use. Tested, reliable, and generally accepted technology such as hyperlinks allow the fusion of related documents in a manner that supports a user defined experience within linking constraints established by the author. Context and background to intelligence products must meet recipient defined needs. As noted by the Major Cities Police Chiefs Association in a 2002 report,

> …our first line of defense against terrorism--the seven hundred thousand officers on the street—(*must*) be given adequate training and background information on terrorism…our local and state officers should have background knowledge…officers should have the ability to access national data banks…[14]

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[14] Edward Tully, *Terrorism the Impact on State and Local Law Enforcement* (Alexandria, VA: International Association of Chiefs of Police, 2002), 5, http://www.neiassociates.org/mccintelligencereport.pdf (accessed September 2, 2006).

This research is designed to determine the impact of fusing the background information demanded by the Major City Police Chiefs on the perceived value and quality of intelligence products for not just law enforcement, but for the millions of homeland security professionals in fire, EMS, public health, emergency management, and the private sector. If CBF results in improved value and quality, technology acceptance model (TAM) research provides a framework for the evaluation of the potential usage of such a system; likelihood of use in this model is influenced by "perceived ease of use," and "perceived usefulness."[15] This research applies previously validated TAM processes to evaluate the likelihood that NTR will utilize hyperlink technology in CBF applications.

C.   SIGNIFICANCE OF RESEARCH

Allied non-state actors in the private sector control approximately 85% of the nation's critical infrastructure in the over 87,000 different U.S. jurisdictions.[16] For every federal law enforcement officer, there are approximately five public sector health professionals, seven state/local law enforcement officers, ten firefighters and twenty-one private security professionals, along with countless other public works, emergency management and emergency medical professionals.[17,18,19] As of June 2000, there were approximately 708,022 state and local law enforcement officers in the United States.[20] As of June 2002, there were only 93,000 Federal law enforcement officers, or less than 12% of sworn law enforcement.[21] The FBI, lead investigative agency for domestic terrorism, had only 12,416 agents as of October 2005, or approximately 1.5% of total law

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[15] F. D. Davis, R. Bagozzi and P. R. Warshaw, "User Acceptance of Computer Technology," *Management Science* 35, no. 8 (1989), 985, http://links.jstor.org/sici?sici=0025-1909(198908)35%3A8%3C982%3AUAOCTA%3E2.0.CO%3B2-1 (accessed May 26, 2006).

[16] George Bush, *The National Security Strategy of the United States of America* (Washington, D.C.: Government Printing Office, 2002), vii.

[17] *State and Local Law Enforcement Statistics*, (Washington, D.C.: Bureau of Justice Statistics, 2006). 1, http://www.ojp.usdoj.gov/bjs/sandlle.htm (accessed December 1, 2005).

[18] *Federal Law Enforcement Statistics*, (Washington, D.C.: Bureau of Justice Statistics, 2006). 1, http://www.ojp.usdoj.gov/bjs/fedle.htm (accessed December 2, 2005).

[19] Association of State and Territorial Health Professionals, *State Public Health Worker Employee Shortage Report, A Civil Service Recruitment and Retention Crisis* (Washington, D.C.: ASTHO.org), 3.

[20] *Federal Law Enforcement Statistics*, Bureau of Justice Statistics, 1.

[21] Ibid.

enforcement. In order to maximize our defense against asymmetric threats, we must effectively utilize unclassified intelligence to educate these diverse professionals on threats, engage them in the intelligence process, and enlist them to provide information to federal partners so that appropriate preventative measures can be considered. We must improve our performance to meet this need. Attorney General Alberto Gonzalez, speaking before the Council on Foreign Relations in New York, remarked on December 1, 2005, "we must fight an intelligent war against terrorism using every tool available...This is the government's obligation, and it is the American people's expectation... it is your expectation."[22] If we are to use "every tool available," and "fight an intelligent war…" then we must educate and utilize the 98.5% of law enforcement that are not FBI agents along with other NTR professionals in the asymmetric conflict threat posed by hostile non-state actors. If found to be effective, CBF for NTR would represent a concrete, visible step in transformation from a need-to-know to a need-to-share culture.

Classified intelligence needs of local law enforcement are being addressed through Joint Terrorism Task Forces (JTTF) and the development of state and local fusion centers, some of which include fire service and private sector partners. Classified and unclassified information can be shared with participants who have received security clearances. One of the limitations of these centers is the need for those directly involved with the centers to live in the geographic region of the centers; in a state such as California that covers a vast geographic area, this can be a significant limitation, even with multiple fusion centers within the state. It is clear that technological assistance will be required to reach a critical mass of professionals over a wide area in a timely manner. As noted in the Markle report, "Protecting America's Freedom in the Information Age,"

> The DHS should become the base for building up a national community of
> intelligence contributors and analysts. To create a national infrastructure
> that is aware, robust, and resilient to the many challenges we face in the
> 21st century, we have to harness the power and dynamism of information

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22 Alberto R. Gonzales, *Prepared Remarks for Attorney General Alberto R. Gonzales* (lecture, Council on Foreign Relations, New York, December 1, 2005), 1, http://www.usdoj.gov/ag/speeches/2005/ag_speech_051201.html (accessed December 4, 2005).

technology by utilizing the strengths and mitigating the weaknesses of our networked society.[23] (Emphasis Added)

CBF intelligence must utilize information technology with an ability to reach over 87,000 jurisdictions, while also maintaining integration with other Federal, State and Regional efforts. The implications to homeland security are significant. The adage, "Quantity has a quality all its own" reflects the potential impact of the improved use and involvement of NTR in the intelligence process. Small expenditures in improving unclassified intelligence are leveraged by the millions of diverse NTR along with the billions of dollars expended to date in community outreach programs such as community oriented policing (COP). An estimated 7.5 billion dollars was expended for COP alone from 1994-2000.[24]

Significant efforts have been focused on intelligence analysis and upward intelligence flow; stimulating NTR involvement in intelligence operations through improved dissemination can exponentially increase the quantity and quality of that upward intelligence flow. Focusing readily available technology, existing infrastructure, and intelligence smart practices on NTR will result in improved information flow, supporting analytical success and initiating an upward spiral of intelligence quality and effective counter-terrorism operations. As noted in the Department of Army Counterinsurgency Manual, Final Draft,

> Intelligence and operations feed back on one another. Effective intelligence drives effective operations, which produce more intelligence. Similarly, ineffective or inaccurate intelligence produces ineffective operations, which reduce the availability of intelligence.[25]

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[23] Zoë Baird, *Protecting America's Freedom in the Information Age* (New York, New York: The Markle Foundation, 2002), 15, http://knxup2.ad.nps.navy.mil/homesec/docs/nonprof/nps05-070903-01.pdf (accessed February 2, 2006).

[24] G. G. Davis and others, *The Facts about COPS: A Performance Overview of the Community Oriented Policing Services Program* (Washington, D.C.: Heritage Foundation, 2000), 1, http://www.heritage.org/Research/Crime/CDA00-10.cfm (accessed January 12, 2007).

[25] Headquarters, Department of the Army, *COUNTERINSURGENCY Draft Not for Implementation*. (Washington, D.C.: Headquarters, Department of the Army, 2006), 3-2, http://www.fas.org/irp/doddir/army/fm3-24fd.pdf (accessed August 12, 2006).

D.   REVIEW OF RELEVANT LITERATURE

1.   What is Contextual Background?

In the study of philosophy, some believe the understanding of text is dependent on the context in which the reader exists. As the text is read, it is interpreted based on the social context and bias of the interpreter. Additionally, text has its own "horizon of meaning" which is influenced by the contextual background of the writer, the time of writing, and the originating context. Philosophical hermeneutics examines the relationship between a reader and text, both of which must be understood within the context of their experience and creation respectively.[26]

Hermeneutics as a theory involves both the understanding and interpretation of text that has continued from the time of Plato. It has been commonly applied to both Biblical and cultural research. In "Teoria Della Interpretatione," Emilio Betti argues that text is "objectified representations of human intentions," and to grasp the true and only meaning of the text, a reader must understand the original process of creation.[27] In the creation and distribution of unclassified intelligence, hermeneutic fusion is problematic; the original process of creation is often based on classified intelligence, which may not be fused to an unclassified document. As the author/producer of unclassified intelligence is prohibited from the fusion of classified hermeneutic material, open source contextual background chosen by authors/producers must be used to replace the original, classified material that influenced the hermeneutic of the writer at the time of creation. In this research, contextual background is defined as unclassified material that best represents the hermeneutic of the producer at the time of creation.

2.   Contextual Background and Intelligence Usefulness

Discussions about intelligence usefulness have been focused primarily on traditional, classified, intelligence recipients in the government. As intelligence agencies move from a "right to know" to a "right to share" culture and more NTR begin to receive unclassified intelligence products, intelligence producers must focus on intelligence

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[26] Frank Ravitch, "Struggling with Text and Context: A Hermeneutic Approach to Interpreting and Realizing Law School Missions," *St. Johns Law Review* (2000), 5, http://findarticles.com/p/articles/mi_qa3735/is_200007/ai_n8886993/pg_5 (accessed 10, 2006).

[27] Stanford Encyclopedia of Philosophy, *Hermeneutics* (Palo Alto, CA: Stanford Encyclopedia of Philosophy, 2005), 1, http://plato.stanford.edu/entries/hermeneutics/ (accessed January 12, 2007).

usefulness for NTR.   As expressed by John Hillen in the National Review, "U.S. Intelligence Failures stem from too much information, not enough understanding."[28] This is a subtle, but critical point; even a high quality intelligence product that is not fully understood by NTR may lack usefulness, failing to provide the knowledge required to improve decision making. There is agreement that ultimately, it is the usefulness of the intelligence product in achieving homeland security that matters.

The sentiment of Hillen is echoed in CIA reports, outlining that the provision of contextual background is a critical component in the usefulness of intelligence products.

> In periods of crisis, when demands are high and response time is short, most written intelligence production is in the form of policy-driven memos and briefs and pieces written for daily publications. The result of this narrowly focused and piecemeal intelligence flow is that it does not foster continuity of analysis nor does it provide a context within which to place seemingly unrelated information. In the case of Iraq, national intelligence did not provide a comprehensive picture of how the country functioned as a whole. **The Intelligence Community has made substantial, although sporadic, efforts over the past decade and a half to explore better and more technologically advanced methods of communicating with consumers. The results, however, have been modest at best. *The requirement to have background and contextual information available at the policymaker's fingertips in a timely fashion remains unfulfilled.***[29]
> (Emphasis added)

Decision makers often demand "tailored" intelligence briefs beyond what is prepared for general distribution in order to meet their decision making needs.[30] This issue is exacerbated by the recent addition of NTR.[31] These recipients do not have personal intelligence analysts to produce "tailored" briefs that contain necessary contextual background. Additionally, NTR are often unaccustomed to the intelligence

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[28] John Hillen, "Know Nothings: U.S. Intelligence Failures Stem from Too Much Information, Not enough Understanding," *National Review*, 8/ 3. (1998), 1, http://www.findarticles.com/p/articles/mi_m1282/is_n14_v50/ai_21102283 (accessed January 12, 2007).

[29] Kerr et al., *Intelligence and Analysis on Iraq: Issues for the Intelligence Community*, 1, http://www.gwu.edu/~nsarchiv/news/20051013/kerr_report.pdf. (accessed January 24, 2006).

[30] Peter Pirolli, *Assisting People to Become Independent Learners in the Analysis of Intelligence* (Palo Alto, California: Office of Naval Research, 2006), 38, http://www.fas.org/irp/eprint/pirolli.pdf. (accessed September 2, 2006).

[31] Anonymous, *Northern California Regional Terrorism Threat Assessment Center*, http://www.ncrttac.org/ (accessed January 24, 2006), 1.

cycle and use of intelligence products as their discipline related training and experience did not previously require the use of such intelligence. As described by Lisa Palmieri, President of the International Association of Law Enforcement Intelligence Analysts,

> I recall reading many articles in the media in which law enforcement executives demanded more "information sharing", particularly focused at the FBI. I also recall thinking that *if these executives got what they asked for, they would be buried in uncorroborated, unevaluated, "white noise".* At that time, very few state and local police departments had analytic capabilities, so being barraged with information would defeat the purpose of guiding law enforcement decisions. *This has, unfortunately, come to pass,* with law enforcement agencies erring on the side of caution; they are sharing more piece-meal information than could ever be made useful in case any small detail might possibly be deemed important in retrospect. (Emphasis added)[32]

Volumes of information without contextual background can overwhelm NTR and is not useful.

3.   Contextual Background and Decision Making

There is agreement that contextual background is a critical component in intelligence decision making.[33] Extensive research exists on decision making theory, with similarly extensive discussion of the impact of intelligence products on decision making. Researchers in one camp of decision making theory define three different types of context that are relevant to decision making:

- Proceduralized context which is shared by those involved in the problem and is directly but tacitly used for the problem solving.

- Contextual knowledge that is not explicitly used but influences the problem solving.

- External knowledge that has nothing to do with the current decision making but is known by many of those involved.

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[32] Lisa M. Palmieri, *Information vs. Intelligence: What Police Executives Need to Know* (Massachusetts: IALEIA, 2005), 1, http://www.ialeia.org/pubs/InformationvsIntelligence.pdf (accessed January 28, 2006).

[33] H. Bradford Westerfield, "Inside Ivory Bunkers; CIA Analysts Resist Managers' 'Pandering'," in *Strategic Intelligence: Windows into a Secret World,"* ed. by Loch Johnson and James Wirtz (Los Angeles, California: Roxbury Publishing Company, 2004), 198, http://www.hsdl.org/homesec/docs/zroom/cm/ns4156/westerfield2004p198.pdf (accessed February 2, 2006).
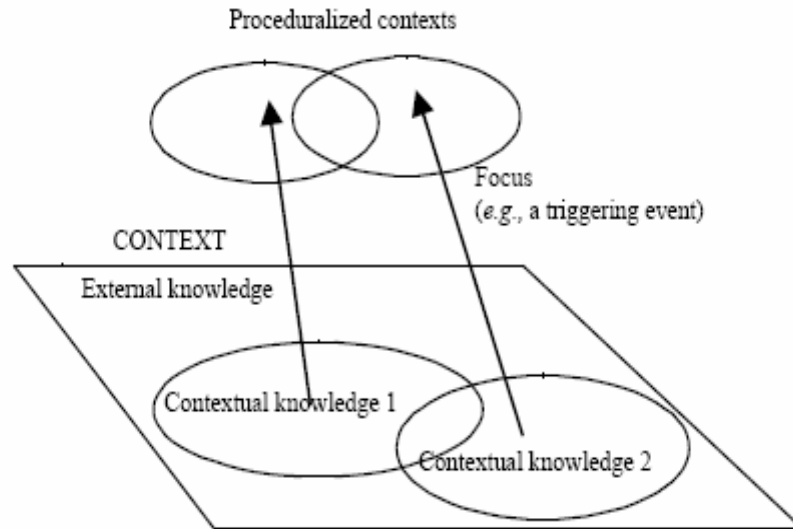
Figure 1.   Different types of context (From Brézillon and Pomerol, 1999)

Context is defined as the "sum of all the knowledge possessed by the operators on the whole task."[34]

In this Pomerol and Brézillon model, a decision maker would, when presented with an intelligence product, access his or her contextual knowledge, and then proceduralize that knowledge based on the intelligence product in hand; in this process, the decision maker may also access available external contextual information, incorporating that knowledge and proceduralizing it prior to decision making. As noted by Pomerol and Brézillon, "… it is clear that a Palestinian whose prior knowledge is reduced to his Imam's preaches cannot have the same interpretation of Middle East events as a Harvard alumnus."[35]   This research addresses the impact of providing external contextual knowledge to decision makers.

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[34] Patrick Brézillon and Jean-Charles Pomerol, *Proceduralization of the Contextual Knowledge for Decision Making*, Abstract (October 28, 2002), 3, http://www-poleia.lip6.fr/~brezil/Pages2/Publications/Luxembourg.pdf (accessed February 2, 2006).

[35] Patrick Brézillon and Jean-Charles Pomerol, *Proceduralization of the Contextual Knowledge for Decision Making*, Abstract (October 28, 2002), 3, http://www-poleia.lip6.fr/~brezil/Pages2/Publications/Luxembourg.pdf (accessed February 2, 2006).

13

Those involved in the practical application of decision making contend that "contextual analysis" of intelligence is vital. While many understand that intelligence intercepted "right from the enemy's mouth" is necessary for accuracy, others argue that human intelligence sources add the required context to most fully understand and utilize information.[36] Both camps agree that context is important in the decision making process regardless of the source or nature of the information; the practical, traditional model illustrated in the Figure below outlines the impact of the addition of context to both knowledge and understanding, impacting perceptions and decisions.

A Traditional Model for Decision Making
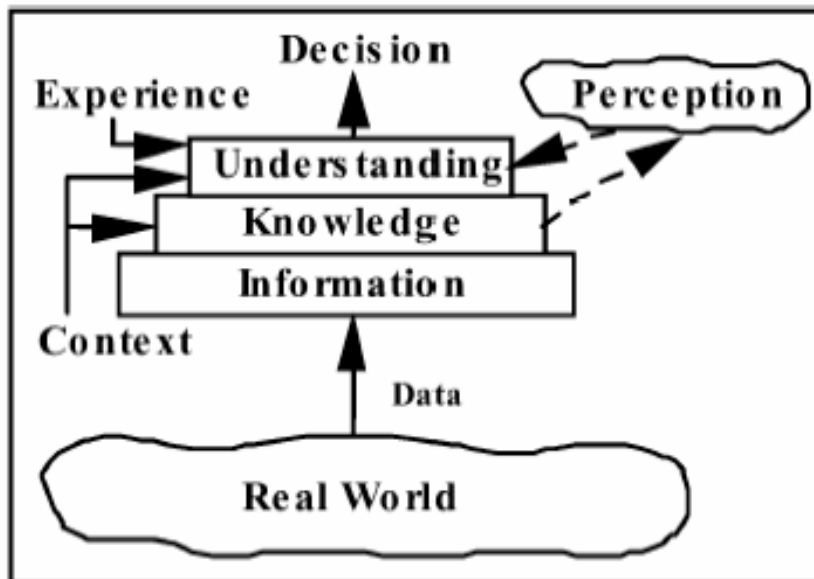
Figure 2.   Context (From the North Atlantic Treaty Organization, 2002)

Understandably, military applications of context in decision making center on pragmatic application. Training material utilized by the North Atlantic Treaty Organization (NATO) reflects that practical application of context in decision making: "…knowledge is produced when information is correlated with a model of the world and

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[36] *Protecting America's Freedom in the Information Age*, 48.

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the current context." [37] Regardless of whether context and decision making are evaluated through the lens of the academic or the war fighter, literature documents that context involved in the decision making process has a significant impact on the nature, quality and effectiveness of the decision. NTR of homeland security intelligence must have a mechanism to "…have background and contextual information available at the (*their*) fingerprints in a timely manner…" in order to most effectively utilize available intelligence. Contextual background is necessary so that NTR can make informed decisions on protective actions and response plans.

4.   Non Traditional Recipients and Contextual Background

The provision of contextual background for unclassified intelligence supplied to NTR is not well documented. While there is varied discussion on the need for contextual background regarding decision making, as well as the importance of context in military, intelligence and policy making decisions, the full integration of NTR in homeland security is still in the early stages of transformation - the provision of contextual background for NTR is no exception. The CEO of Cisco systems, John Chambers, highlighted this in a letter on behalf of the National Infrastructure Advisory Council to President G.W. Bush: "Full integration: Private industry must be fully integrated into the Federal Government's Intelligence Cycle. The Federal Government must learn to include industry experts as domestic intelligence assets, integral to improving infrastructure protection, and not just occasional customers of government intelligence products."[38]

Urban Area Security Initiatives (UASI) provide one solution in supplying homeland security contextual background to NTR. Some metropolitan areas may have the capacity in their limited geographic area to provide context and background for their intelligence through traditional workplace education; however, this capacity quickly diminishes the farther the recipient is from intelligence providers in both distance and discipline. Intelligence support of NTR outside UASI regions remains a gap in the current solutions set. Providing generalized intelligence education through the UASI

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[37] North Atlantic Treaty Organization, *Tactical Decision Aids and Situational Awareness* (Amsterdam: North Atlantic Treaty Organization, 2002), 14, http://knxup2.ad.nps.navy.mil/homesec/docs/dtic/ADA400661.pdf (accessed January 27, 2006).

[38]   Chambers and Nye, Letter to George Bush, Washington, D.C.; National Infrastructure Advisory Council, 1, http://www.dhs.gov/interweb/assetlibrary/NIAC_EEIS_Letter_0804.pdf (accessed January 24, 2006).

network, including planning and direction, collection, processing, analysis, production and discrimination. begins the process of integrating NTR into the intelligence cycle.[39] As NTR receive intelligence products relevant to their geographic area and discipline, the provision of relevant background information can provide context and a depth of understanding not otherwise readily available, providing decision makers with an increased capacity to effectively utilize the intelligence in protection of critical infrastructure and provision of leads back to the IC.

In addition to the UASI resources available in some metropolitan areas, law enforcement NTR have technological options in obtaining contextual background for unclassified intelligence products not available to other NTR such as the Regional Information Sharing System (RISS) and Law Enforcement Online (LEO). Combined, firefighters and private sector security guards alone account for approximately three million NTR who currently lack access to these systems.[40] While law enforcement may employ these information systems, the contextual background contained in these data warehouses is not currently fused with intelligence products, requiring recipients to search for information. Although more effective than an open internet search (due to the validity an accuracy of the source information), accessing appropriate information is still dependant on the varied skill, interest level and time available to each recipient - results may not reflect the hermeneutic of the producing agency. This research examines the impact of CBF to intelligence products for the millions of first responders who are currently without access to existing systems across America. Robert Steele highlights the value of context in the intelligence process for all recipients:

> New Value is in Content + ***Context*** + Speed ***The traditional craft of intelligence has tended to fragment content from its context,*** and be largely oblivious to timing. This is true both in the collection cycle and in the production cycle. The new craft of intelligence ***recognizes that the value of any given information,*** apart from its relevance to the decision at hand, ***stems from a combination of the content in context, and the***

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39 Paul W. Parfomak, *Guarding America: Security Guards and U.S. Critical Infrastructure Protection* (Washington, D.C.: The Library of Congress: Congressional Research Service, 2004), 27, http://www.fas.org/sgp/crs/RL32670.pdf (accessed January 21, 2006).

40 Ibid.

content in time. Both collectors and producers of intelligence must be acutely sensitive to the day-to-day needs of their consumers.[41] (Emphasis Added)

Steele understands that the value of intelligence is not based solely on the sources utilized in the intelligence product, and that "historical knowledge," (referenced by Pomerol and Brézillon as "contextual knowledge") is a critical factor in the value of intelligence products. This research identifies the impact of avoiding "fracturing content from its context," by fusing content (existing intelligence products) + context (vetted, valid and accurate) + speed (hyperlink fusion) for non traditional recipients. Speed through hyperlink fusion leverages the attention span of the reader, providing contextual background at the exact moment the issue is facing the reader.

While contextual background is not specifically mentioned, the Office of the Director of National Intelligence is responsible for both traditional and non traditional recipient intelligence and "ensures that the Intelligence Community is integrated, focusing on the right questions, and maximizing the return on taxpayer dollars by identifying threats clearly so that policymakers, legislators, military commanders*,* and *law enforcement officials can make well-informed decisions and take effective actions"* (emphasis added).[42] The National Strategy for Homeland Security also provides evidence and summarizes the significance of providing high quality intelligence to NTR, citing a need to "Enable effective partnership with state and local governments and the private sector...which controls eighty-five percent of America's infrastructure… Government at all levels must enable, not inhibit, the private sector's ability to carry out its protection responsibilities. The Nation's infrastructure protection effort must harness the capabilities of the private sector to achieve a prudent level of security without hindering productivity, trade, or economic growth...[43] Contextual background is a necessary to meet these mandates.

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[41] Robert Steele, *The New Craft of Intelligence Personal, Public and Political* (Oakton, Virginia: OSS International Press, 2002), 147-161.

[42] Director of National Intelligence, *Report on the Progress of the Director of National Intelligence in Implementing the Intelligence Reform and Terrorism Prevention Act of 2004*, 1, http://www.fas.org/irp/dni/implement.html (accessed January 12, 2007).

[43] George W. Bush, *National Strategy for Homeland Security* (Washington, D.C.: Office of Homeland Security, 2002), 5-6.

In May, 2006 the Director of National Intelligence (DNI) affirmed the importance of using data warehousing to store intelligence contextual background when he reported to Congress on current ODNI efforts to establish digital libraries of all new intelligence products. He also outlined efforts to improve the ability of analysts to access all relevant information for their analysis, both open source and classified, regardless of original author.[44] It is critical that analysts have access to this data warehouse (library) of topical intelligence products in order to receive the contextual background necessary for them to produce contextually accurate intelligence products. It is similarly important for NTR to have a data warehouse (library) of contextual background for intelligence products so that they may produce better decisions. DHS has funded open source data warehouses such as the Memorial Institute for the Prevention of Terrorism (MIPT) Terrorism Knowledge Base (TKB) database to address this need.[45] Existing investment in these data warehouses can be leveraged, they provide a readily available, government funded, vetted source of contextual background that can be fused to intelligence products. Private sector assets and government funded, open source contextual background data warehouses are two of many valuable assets that must be fully integrated into the intelligence cycle.

The research to date provides valuable insight into the importance of contextual background, the importance of non traditional recipients, and the importance of intelligence in decision making. As the provision of unclassified intelligence to NTR is relatively new, there is little direct research on the impact of context in this area; this impact must be implied from experience with traditional intelligence recipients combined with the impact of context in the decision making of NTR in areas other than intelligence.

5. Technology and Contextual Background

The literature shows that decision making is impaired when insufficient information is available; it also documents that too much information (or information overload) impairs decision-making. Technology has the potential to impair decision making through the provision of too much information, the "white noise" discussed by Lisa Palmieri, or to assist by increasing a decision maker's ability to acquire, transform

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[44] *Report on the Progress of the Director of National Intelligence in Implementing the Intelligence Reform and Terrorism Prevention Act of 2004*, 7.

[45] MIPT, *About MIPT Terrorism Knowledge Base*, Memorial Institute for the Prevention of Terrorism, 1, http://www.tkb.org/AboutTKB.jsp (accessed September 3, 2006).

and explore knowledge as envisioned by the IC. Technological assistance in providing the right amount and type of knowledge to decision makers has the potential to improve decisions, increase decision timeliness, and decrease staff support requirements. Given the lack of intelligence specialists in NTR disciplines outside of law enforcement, and the fact that 79% of police departments have twenty-five or fewer sworn officers, technology support is critical if we are to effectively engage NTR in homeland security.[46]

A review of knowledge management literature shows design parallels between "expert systems" and the fusion center/Joint Terrorism Task Force process. Fusion Centers and Joint Terrorism Task Forces act as knowledge management engines, managing the interface between NTR, the national knowledge base, and regional knowledge contributed by end users. Software engineers utilize the concept of a "context manager" in designing automated software which links disparate sources of data. Some believe that, "…the ability to represent and manipulate context will be an extremely important part of providing semantic integration in multi-database systems."[47]

Intelligence products with CBF can function as a critical hub or node in networking multiple databases of open source contextual background and NTR; the producer (expert) manages the interface between the warehouses and NTR through the selection of appropriate hyperlinks. Hyperlinks have already been utilized by some unclassified intelligence providers, such as the Illinois State Terrorism Information Center (STIC) to provide contextual background.[48] The diagram below outlines the impact of such hyperlinks on a small part of the homeland security information network.

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[46] Geoffrey Alpert, *Police Pursuit and the Use of Force. A Final Report to the National Institute of Justice* (Washington, D.C.: National Criminal Justice Reference Service, [1997]), 7, http://www.ncjrs.gov/pdffiles/164831.pdf (accessed May 25, 2006).

[47] Zhengxin Chen, *Computational Intelligence for Decision Support* (Boca Raton, FL: CRC Press, 2000), 27, http://www.engnetbase.com.libproxy.nps.navy.mil/books/482/1799_PDF_TOC.pdf (accessed May 26, 2006).

[48] Kevin Eack (Illinois State Police, State Terrorism Intelligence Center), interview by author, Springfield, Illinois, June 18, 2006.
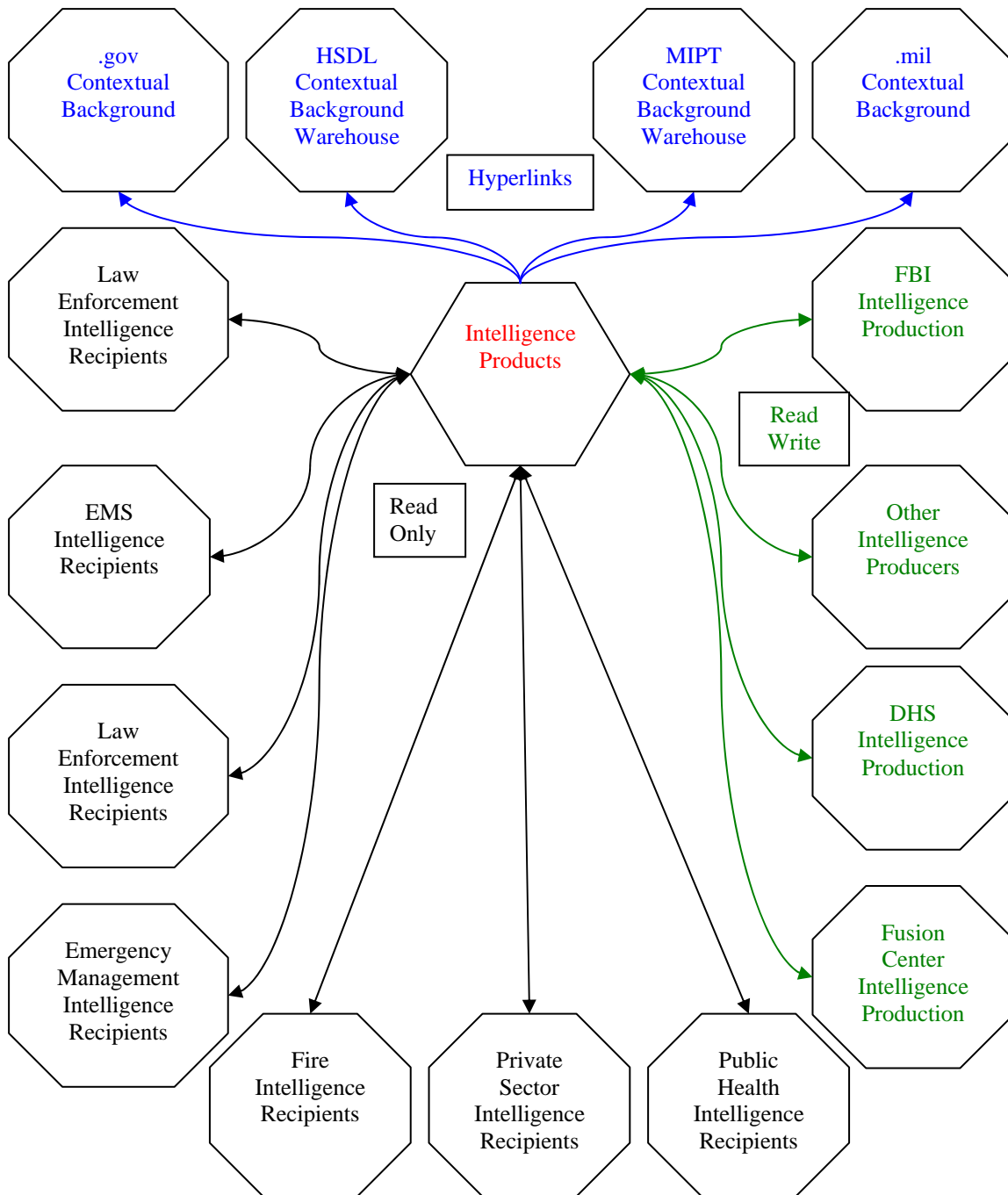
Figure 3.   Homeland security information source network

Understanding the critical importance of improving the usefulness of intelligence products for decision makers, the IC has utilized varied methods to provide user defined access to contextual background for intelligence products, including personal briefings by intelligence professionals, ongoing feedback to producers on provided intelligence

products as part of the intelligence cycle, along with technological solutions such as the maintenance of searchable data warehouses of contextual background and a finished classified intelligence dissemination system (Intelink). The experience with Intelink highlights the importance of technology acceptance by decision makers; Intelink is a secure network of intelligence databases that supports user defined receipt of customized intelligence products.[49] It is intended to "provide robust and timely access to all available intelligence information, regardless of location, medium, or format, for all interested users … who are authorized access."[50] Incorporating collaborative computing on this secure network, recipients are able to teleconference and whiteboard with live audio, video, document, and application share capability along with simultaneous access to multiple intelligence data warehouses. Intelink was designed not to just "push" intelligence information; it allows recipients to "pull" information as well.[51]

Intelink has not been as successful as envisioned. Many intelligence recipients have expressed a preference for hard copies of reports, personal briefings and traditional communication methods over Intelink.[52] As reflected in Technology Acceptance Model research, ease of use and perceived usefulness are significant factors in the successful implementation of any solution. Despite the extensive capabilities of Intelink, users "claim they go first to the Agency web sites, find no information at all, usually become quickly frustrated, and log off with the impression the intelligence agencies do not store information on Intelink."[53] Decision makers want a summary of information the briefer believes is important (push) and want additional information the decision maker believes may be important from the briefer immediately thereafter (pull). Intelligence system

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[49] Lorne Teitelbaum, *The Impact of the Information Revolution on Policymakers' use of Intelligence Analysis* (Santa Monica, California: RAND, 2005), 98, http://www.rand.org/pubs/rgs_dissertations/2005/RAND_RGSD186.pdf (accessed May 24, 2006).

[50] Fredrick Martin, *Top Secret Intranet: How U.S. Intelligence Built Intelink - the Worlds Largest most Secure Network* (Upper Saddle River, NJ: Prentice Hall, 1999), 1-380.

[51] Patrick Kelly, *Intelligence Support to Homeland Security: Supporting the Supporting Effort* (Carlisle Barracks, Pennsylvania: U.S. Army War College, 2002), 29, https://www.hsdl.org/homesec/docs/dtic/ADA404363.pdf (accessed May 21, 2006).

[52] Teitelbaum, *The Impact of the Information Revolution on Policymakers' use of Intelligence Analysis*, 101.

[53] Ibid., 106.

design must support the needs and preferences of decision-makers or run the risk of rejection, regardless of how exceptional the technology or the potential of the system.

6.   Technology Acceptance

The theory of reasoned actions (TRA) serves as a theoretical base for examining technology acceptance.[54] TRA posits that an individual's beliefs influence their attitudes, that when combined with societal norms, drives behavioral intentions, leading to actual behavior. Based on TRA, the technology acceptance model (TAM) is an established method of predicting user acceptance. In this model, perceived "Ease of Use" and perceived "Usefulness" explain why individuals accept or do not accept technology.[55] A review of previous studies shows that TAM, with strong empirical support, has become a dominant model for predicting technology adoption.[56] TAM is one method to predict user acceptance before large scale investment or commitment to a technology in mission critical systems.

Perceived ease of use is the degree to which a user believes that using a technology would be effortless, and perceived usefulness is the degree to which a user believes that a technology would improve performance, production or effectiveness. Of the two constructs, it appears that usefulness is critical, "no amount of ease of use can compensate for a system that does not perform a useful function."[57] The use of technology in knowledge management systems has been studied using TAM to determine factors that impact loyal use; both perceived usefulness and ease of use were found to be factors positively related to loyal use.[58]

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[54] M. Fishbein and I. Ajzen, *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research* (MA: Addison-Wesley Reading, MA, 1975), 21-52.

[55] F. D. Davis, R. P. Bagozzi and P. R. Warshaw, *User Acceptance of Computer Technology: A Comparison of Two Theoretical Models*, Management Science 35, no. 8 (1989), 982-1003.

[56] Chienting Lin and others, *Examining User Acceptance of COPLINK Technologies by Law Enforcement Officers: A Survey Study* (Arizona: University of Arizona,2002), 2, http://citeseer.ist.psu.edu/cache/papers/cs2/365/http:zSzzSzwww.digitalgovernment.orgzSzlibraryzSzlibrar yzSzdgo2002zSz..zSzpdfzSzlin.pdf/examining-user-acceptance-of.pdf (accessed August 20, 2006).

[57] F. D. Davis, R. P. Bagozzi and P. R. Warshaw, "User Acceptance of Computer Technology: A Comparison of Two Theoretical Models," *Management Science* 35, no. 8 (1989), 333.

[58] Paul Clay, Alan Dennis and Dong-Gil Ko, *Factors Affecting the Loyal use of Knowledge Management Systems* (Indiana: Indiana University,2005), 1-10, http://csdl2.computer.org/comp/proceedings/hicss/2005/2268/08/22680251c.pdf.

E. RESEARCH QUESTIONS

- Does CBF increase customer satisfaction "value" for NTR as defined by DHS/FBI?

- Does CBF increase customer satisfaction "quality" for NTR as defined by DHS/FBI?

- Will NTR find hyperlink technology applications in unclassified intelligence as "easy to use" as defined by technology acceptance model research?

- Will NTR perceive hyperlink technology applications in unclassified intelligence as "useful" as defined by technology acceptance model research?

- Given a choice, will NTR believe a CBF intelligence document is of greater value to themselves and their organization than a non CBF product?

F. CHAPTERS

This research reviews hermeneutic theories, prior studies on the impact of contextual background in decision making, current unclassified intelligence distribution, and technology acceptance research. The acceptance of hyperlink technology to achieve CBF is evaluated utilizing previously validated technology acceptance model factors of ease of use and usefulness. The impact of CBF on value and quality factors is independently tested using measures defined by DHS and FBI.

Chapter I serves as an introduction and summary then presents important background and context to this research, reviewing relevant literature on the impact of context in decision making, technology acceptance, and the direction set by senior policy makers in intelligence distribution. The significant citations of senior policy makers, researchers and practitioners leads to the conclusion that homeland security decision makers require contextual background for intelligence products in order to best use that intelligence.

Chapter II reviews the existing provision of intelligence products in context with an emphasis on unclassified material. Multiple strategies in local, regional, state, federal and international agencies are reviewed.

Chapter III establishes hypothesis' and outlines the process of building, testing, and validating the testing process, leading to the results of that testing. Subject matter experts were consulted at every step of the process to ensure both validity and practical application. With the input of subject matter experts (SME), the goal of conducting valid, scholarly research that improves performance in the GWOT was paramount. The implementation of well intentioned, reasonable strategies and tactics is often necessary without the benefit of validated research, CHDS provides both the mandate and opportunity to research and validate both strategies and tactics.

The final chapter presents recommendations based on the statements of senior policy makers, researchers and practitioners, combined with feedback from NTR presented with both traditional and CBF products.

II.   EXISTING PROVISION OF INTELLIGENCE PRODUCTS IN CONTEXT

The provision of contextual background in intelligence can be described as "the paradox of plenty." Although context is available in many open source Internet accessible databases that are relevant to intelligence products distributed to NTR, the distributed data warehouses, lack of linking between warehouses and intelligence products, lack of reconciliation with intelligence products, along with the sheer volume of context interferes with user access to this "plenty."[59]

A RAND study conducted for the FBI summarized the importance of providing appropriate intelligence products to NTR. This report indicated that a review of best practices of multiple country threat assessments demonstrated a need for products to be:

- Tailored to meet requests from government departments, police, and private industry.
- Frequently incorporate a process for sending "scrubbed" versions to non-cleared customers.[60]

"Tailoring" intelligence for diverse recipients cuts to the heart of NTR need for different levels of contextual background. While historically recipients may have been relatively homogenous in discipline and hermeneutic understanding of intelligence products, the current diversity of disciplines and contextual knowledge of NTR ensures that "one size fits all" unclassified intelligence products will fit almost no one.

A.   DEPARTMENT OF THE ARMY

In Police Intelligence, the United States Military uses hyperlinks to individually "tailor" unclassified intelligence products. An example of this networking of open source material to unclassified intelligence documents is demonstrated in the July 2006 Police

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[59] Nazli Choucri, Stuart Madnick and Michael Siegel, *Improving National and Homeland Security through Context Knowledge Representation and Reasoning Technologie. (*Working Paper, Composite Information Systems Laboratory, Sloan School of Management, Massachusetts Institute of Technology, Cambridge, MA, 2006), 1-25, http://web.mit.edu/smadnick/www/wp/2006-03.pdf (accessed August 3, 2006).

[60] Peter Chalk, Seth Jones and William Rosenau, *Understanding the Enemy: Lessons for Effective Threat Assessments* (Santa Monica, CA: RAND, 2004), 9.

Intelligence Operations Field Manual.[61] Hyperlinks to open source websites such as FBI, news agencies, and the Postal Service are used as examples of fusing unclassified intelligence products with open source material in a sample unclassified intelligence product. As these hyperlinks are standard, "ease of use" should be same as the experimental product in this research. This use of hyperlink technology to allow a "semi-custom" user defined experience within the confines of open source links provided by the analyst is one method to meet the recommendations of RAND, given diverse individual recipient needs across a wide geographic area.

The U.S. Military is not unique in its use of hyperlinks to provide a "semi-custom" unclassified intelligence product for diverse recipients. Multiple domestic intelligence fusion centers have used the same strategy. The U.S. Capital Regional Intelligence Center utilizes hyperlinks in footnote citations in For Official Use Only (FOUO) Information Bulletins. These footnotes parallel the Military Police Intelligence Operations Field Manual, directing interested recipients to open source material, primarily news reports.[62] Generally, these hyperlinks are to original source material of articles summarized in the report, rather than to contextual background.

B.   NEWS AGENCY

An example of CBF for a diverse audience can be found at the website of television producer "FOX NEWS." On the FOX NEWS, Homeland Security, Weapons of Mass Destruction website, hyperlinks take interested readers to contextual background on such keywords as "anthrax," "dirty bomb," and "e bomb." Additionally, a "background" box is imbedded in the article with hyperlinks to additional reliable open source data warehouses such as "RAND," "ready.gov," and "U.S. Army Institute of Infectious Disease."63 This is an example of CBF utilizing accurate, reliable and vetted

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[61] Department of the Army, *Police Intelligence Operations* (Washington, D.C.: Headquarters, Department of the Army, 2006), B-1, http://www.fas.org/irp/doddir/army/fm3-19-50.pdf (accessed August 4, 2006).

[62] National Capital *Regional Information Center Information Bulletin IB-06-04*, June 30, 2006.

[63] Liza Porteus, *Weapons of Mass Destruction Handbook*, Fox News, 1, http://www.foxnews.com/story/0,2933,76887,00.html?sPage=fnc.specialsections/homelandsecurity (accessed September 10, 2006).

government sources for a diverse audience that is examined in this research. The "usefulness" of CBF in these products should be similar to the usefulness factor examined in this research.

C.   DHS/FBI

Standard joint FBI/DHS unclassified intelligence products for law enforcement are distributed in PDF format, generally without hyperlink or other networking with contextual background. These products are distributed to police, fire, EMS, Public Health and private sector recipients on a regular basis.[64] In this "one size fits all" distribution, the analyst must include contextual background they believe is required by the diverse recipients without making the product so long that it will not be read. Each of these products contains a customer satisfaction survey that measures the value and quality factors utilized in this research.

Internally, the Department of Homeland Security has the capacity for automated contextual linking within the twenty-one agencies in the department through 250,000 "Autonomy" software seat licenses. According to Autonomy co-founder Richard Gaunt, "Autonomy's intelligence data operating layer (IDOL) provides that context, as well as the ability to bring together relevant information from disparate sources."[65]

The FBI provides both unclassified and classified intelligence to law enforcement through 4,000 officers and agents assigned to a network of 101 Joint Terrorism Task Forces (JTTF) linked to each FBI field office.[66] Supported by FBI Field Intelligence

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[64] Northern California Regional Terrorism Threat Assessment Center, *Northern California Regional Terrorism Threat Assessment Center, A Local, State and Federal Partnership with the San Francisco FBI, FIG, and JTTF* (San Francisco; Northern California Regional Terrorism Threat Assessment Center, 2006), 1.

[65] Autonomy Corporation plc, *Industry Analyst Research Highlights Autonomy's Technology Over Legacy Rules-Based Only Approach* (Sunnyvale, CA: Autonomy, 2006), 1, http://www.autonomy.com/content/News/Releases/2002/1104.html (accessed August 6, 2006).

[66] U.S. Department of Justice, *Fact Sheet: Department of Justice Anti-Terrorism Efforts since 11 September 2001*, Release No. 202-514-2007 (Washington, D.C., 2006), 1, http://www.usdoj.gov/opa/pr/2006/September/06_opa_590.html (accessed January 12, 2007).

Groups (FIG), local law enforcement liaisons are provided security clearances and encouraged to participate either full time or part time in task force operations, providing a layer of geographically tailored intelligence.

D.   FUSION CENTERS

A growing network of DHS supported state and local fusion centers provide a link between intelligence agencies and homeland security professionals, either scrubbing classified intelligence, producing independent intelligence, or passing through unclassified FBI/DHS products to their geographic area. These centers, with diverse leadership structures and discipline participation, represent one method of providing "tailored" intelligence that a limited geographic area might need. Just as the military hyperlink model provides an individualized semi-custom user defined experience across a wide geographic area, the fusion center network makes possible the customization of intelligence for a specific geographic region. Some fusion centers, such as the Illinois Statewide Terrorism Intelligence Center have utilized hyperlinks to fuse contextual background to their intelligence reports in efforts to improve intelligence usefulness.

E.   NEW YORK POLICE DEPARTMENT

The New York Police Department is unique among the approximately 18,000 U.S. law enforcement agencies due not only to its experience with terrorism at the World Trade Center, but the sheer size of the department, its responsibilities, and its resources. Senior Advisor Brian Jenkins from the RAND Corporation summarized that "They're developing best practices here that should be embraced across the country. The Feds could learn from them."[67] Their "NYPD Shield" program is a continuation of New York public/private partnership, with the department emailing unclassified intelligence products to private sector partners who request participation. The "Shield" intelligence products are currently issued as PowerPoint presentations. These presentations include significant contextual background including photographs and maps. On the companion

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[67] Brian Jenkins (RAND Corporation), Interview with the National Tactical Officers Association, February 2005, 58-71, http://www.newyorker.com/fact/content/articles/050725fa_fact2.

password protected website, access to contextual background including links to the MIPT Terrorism Knowledge Base, Terrorism Timelines, an archive of previous intelligence products, and a small library of terrorism security articles is available. These unclassified intelligence PowerPoint reports are being secondarily distributed; on August 17, 2006, the California Office of Emergency Services redistributed the NYPD Shield Unclassified Mumbai PowerPoint to California Fire Chiefs with the comments "Interesting information, don't know if you have seen it...the attached PowerPoint presentation is an excellent overview of the Mumbai rail attacks of July 11, 2006..." Secondary distribution and expert review, while antidotal, indicate superior NYPD product usefulness.

F.   DEPARTMENT OF DEFENSE

The Department of Defense (DoD) utilizes Verity/Autonomy "K2" and "Profiler" software to provide internal context to users of some intelligence systems. This software performs multiple contextual background functions. Upon data entry, a contextual "frame" is built around the data based on the totality of the data being entered and the profile of the submitter; in essence, the software attaches queries that match the data at the time of data entry based on the context of the entry. This system, utilizing original source data, comes closer to providing a hermeneutic understanding of intelligence; intelligence producers are not required to substitute open source material in place of classified original sources. Users of the system build a profile of themselves, building communities of interest that the software uses to prioritize system inquiry responses. The software builds upon that profile based on entry and query history, subsequently using this contextual base to not only prioritize information that a user attempts to "pull" from the system, but to proactively create reports based on the user's contextual profile. It "pushes" reports based on new data entered into the system that matches the self-described and system use contextual profile. Intelligence "pulled" from and "pushed" by the system is provided in context based on these "explicit" and "implicit" profiles of users.[68] This software appears to be designed primarily for analyst use rather than for end users of intelligence.

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[68] Christian Scott (Autonomy Software DHS Program Manager), interview by author, Sunnyvale, California, August 14, 2006.

G.   INTERPOL

Interpol, the international organization of 184 member countries, has several methods of disseminating terrorism information to member countries including working meetings, warning lists, analytical reports, an indices system, "orange" notices, and special notices.[69]   Interpol does not generally receive classified intelligence, but rather intelligence at the Law Enforcement Sensitive level, therefore, there is no need to declassify, amend or "scrub" intelligence that is received from members. Any member country can tell Interpol who may see information that they provide to Interpol, in essence, the originating member country remains the proprietary owner of information.[70] Interpol's I 24/7 virtual private network connects all member countries and is used to distribute the law enforcement sensitive intelligence. This is a law enforcement only system that by policy does not include fire, private sector, public health, or emergency management. Information generally stays within law enforcement; however, it is possible for member agencies to share outside of law enforcement if there is a demonstrated need, with the permission of the originating member. Art theft information is one routine case where information is shared outside law enforcement, being routinely distributed to art dealers in the private sector in order to recover stolen pieces.[71] The Interpol I 24/7 network does not provide hyperlink or other networking to context or background information, acting instead as a distribution system for the unclassified intelligence products of members.[72]   In a manner similar to DHS/FBI PDF files, intelligence producers must include contextual background as they feel appropriate. Unlike DHS/FBI products, Interpol products are generally distributed to only one discipline, law enforcement.

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[69] INTERPOL, *INTERPOL Notices*. (Lyon, France: INTERPOL, 2006), 1-2, http://www.interpol.int/Public/ICPO/FactSheets/GI02.pdf (accessed July 27, 2006).

[70] Public Affairs Officer (Public Affairs Office, U.S. Justice Department), interview by author, Washington, D.C., July 5, 2006.

[71] Public Affairs Officer (Public Affairs Office, U.S. Justice Department), interview by author, Washington, D.C., July 1, 2006.

[72] INTERPOL, *Stolen Works of Art* (Lyon, France: INTERPOL, 2006). http://www.interpol.int/Public/WorkOfArt/Default.asp(accessed August 8, 2006), 1.

H.   JANE'S INFORMATION GROUP ONLINE

Jane's Information Group Online is a subscription based Internet resource that describes itself as:

> …a world leading provider of intelligence and analysis on national and international defense, security and risk developments. Jane's is an independent organization with an unrivalled reputation of accuracy, authority and impartiality. Jane's delivers partners and clients a strategic advantage from intelligence acquired by a unique worldwide network of independent analysts. Governments, militaries, business leaders and academics in over 180 countries rely on Jane's providing timely and insightful information on threat and security issues.
>
> Founded in 1898, Jane's has always been at the forefront of publishing and developing information solutions for its customers. Jane's provides a unique and independent service that allows its clients the ability to make mission or business critical decisions with assurance. Jane's understands the importance of accurate information to navigate business and governmental leaders through an increasingly turbulent world. Every day crucial decisions are made by Jane's customers often based purely on Jane's information.[73]

In a manner similar to Fox News, Jane's utilizes CBF through the use of hyperlinks to both proprietary and open source government material in their intelligence analysis. In addition to internal links, they utilize a "compendium of links to government information sites, counter-terrorism legislation, reports and position papers… and best practice guidance…"[74] In this research the type of CBF utilized by Fox News and Jane's is evaluated for ease of use, usefulness, value and quality for application to unclassified intelligence distribution to NTR.

I.   CONCLUSIONS

Because the practice of providing unclassified intelligence to NTR is relatively new, IC provision of contextual background trails private sector "smart practices." Private sector producers such as Fox News and Jane's have significant experience in producing reports for a broad and diverse audience, while the IC has traditionally

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[73] Jane's Online, *Jane's Intelligence and insight you can trust* (Alexandria, Virginia: Jane's Information Group, 2005), 1, http://www.janes.com/company/about/ (accessed 10/11/2006).

[74] Ibid, 2.

supplied classified intelligence for a relatively homogenous audience. The geographic, jurisdictional, and disciplinary diversity of NTR resembles the diverse audience of private sector producers such as Jane's. This study explores the impact of CBF used by the private sector on unclassified intelligence distributed to NTR. Given the similarly between the diverse audiences of private sector intelligence producers and NTR, research into other smart practices of the private sector is warranted; the IC has significant experience in intelligence analysis, while the private sector has significant experience in communicating with diverse audiences with multiple interests, both of which can be exploited in improving intelligence communication with NTR.

Contextual background has been established as a critical factor in decision making from the time of Plato through the current global war on terror. The Department of Homeland Security and Federal Bureau of Investigation have established value and quality as two factors that reflect customer satisfaction with their unclassified intelligence products, providing an established, standardized method of measuring the impact of CBF on those products. Technology acceptance model factors of usefulness and ease of use also provide valuable feedback on the impact of CBF. This previously validated TAM research provides an established, standardized method of measuring whether the hyperlinks utilized to achieve CBF will be accepted in widespread application. Any changes to unclassified intelligence products that are rated highly for usefulness, ease of use, value and quality that will be widely accepted while improving decision making and customer satisfaction should be considered for immediate application.

III.   HYPOTHESIS TESTING

A.   HYPOTHESIS'

A null hypothesis (H_o) is a hypothesis that can be statistically examined. It is presumed to be true until statistical analysis demonstrates it to be false, or nullified, in which case the alternative hypothesis (H_1) may be accepted. A Null hypothesis can be designed to test that there is no difference between variables, it is then evaluated and the results examined to determine what the probability is that observed differences between variables are by chance. In determining whether to reject the null hypothesis in favor of the alternative hypothesis, we must determine an appropriate level of significance that must be met to reject the null hypothesis.   The smaller this p-value is, the more significant the result; 5% or .05 is generally accepted as significant, while 1% or .01 is more statistically powerful, as it is a much more difficult threshold to meet.   In this research the following two null hypotheses are evaluated to determine whether to accept the alternative hypothesis:

Ho: There is no difference in intelligence product perceived value as represented by DHS/FBI customer satisfaction surveys, on average, with the application of CBF.

H_1: An intelligence product with hyperlinks to open source contextual background is perceived as more valuable based on DHS/FBI customer satisfaction surveys than a non-CBF product, on average.

Ho: There is no difference in intelligence product perceived quality as represented by DHS/FBI customer satisfaction surveys, on average, with the application of CBF.

H_1: An intelligence product with hyperlinks to open source contextual background is perceived as higher quality based on DHS/FBI customer satisfaction surveys than a non-CBF product, on average.

B.   METHODOLOGY

In this empirical research, a national survey for homeland security professionals was designed to discover the impact of hyperlink CBF on unclassified intelligence products. A control product was presented and a base measurement of DHS/FBI quality and value factors was established. The experimental CBF product was presented and a second measurement of DHS/FBI quality and value factors was recorded, establishing the positive or negative impact of CBF on the customer satisfaction factors established by DHS/FBI. Questions from previously validated technology acceptance model factors of ease of use and usefulness were then presented in order to determine if intelligence recipients would accept hyperlinks to achieve CBF. A final forced choice question to determine preference for control or experimental products was presented to confirm DHS/FBI factor results.

1.   Instrument Construction

Two identical sample intelligence products were produced for the survey, one text file as similar as practical to a typical intelligence product distributed to non traditional recipients and a second identical product fused with hyperlinks to contextual background (CBF) found at reliable, government funded websites documented in Appendix A. The material in the sample report was unclassified, having been adapted from the Southern Poverty Law Center Intelligence Project Eco-Radicalism, open source, online report, allowing this research to remain unclassified.[75] The intelligence sample product was distributed to four intelligence subject matter experts from local, county, state, and federal jurisdictions and based on their feedback the sample was shortened.

The survey was prepared for "Zoomerang" online distribution. The survey presented a standard intelligence product, asked seven questions, presented a CBF intelligence product, requesting a response to the same seven questions along with twelve additional questions directly related to ease of use and usefulness consistent with the Technology Acceptance Model (TAM). The first seven survey questions after both standard and CBF versions mirror the DHS/FBI customer satisfaction survey with the

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[75] Southern Poverty Law Center, *Eco-Radicalism, Feds Across Country to Smash 'Eco-Terrorists'* (Montgomery, Alabama: Southern Poverty Law Center, 2005), 1, http://www.splcenter.org/intel/intelreport/article.jsp?aid=608 (accessed September 22, 2006).

questions divided into perceived value and perceived quality factors; Appendix D contains a copy of this two factor customer satisfaction survey that is currently distributed with DHS/FBI unclassified intelligence products. These questions provide direct feedback to DHS/FBI on the impact of CBF on the measures that they seek from their "customers." These questions utilized the same five-point Likert scale as DHS/FBI products, with Strongly Disagree on one end and Strongly Agree on the other end, along with an N/A option. One question from the DHS/FBI Customer Satisfaction Survey regarding timeliness was not utilized, "The product was delivered within established guidelines," as the sample product was not being delivered based on guidelines. All other customer satisfaction survey questions and Likert scale are exactly as found in DHS/FBI documents.

Twelve additional questions were adapted from Technology Acceptance Model research first validated in by Davis in 1989. TAM was developed to explain and predict computer use.[76] In this model, the two factors of "Usefulness" and "Ease of Use" have been demonstrated to predict the use of technology. The questions in these factors utilized an ordinal Likert 6-point scale with Strongly Disagree at one extreme and Strongly Agree at the other end. A final question in the survey asked respondents to directly identify whether a CBF or standard product would be of greater value to their organization.

The pilot study was sent to fifteen subject matter experts (SME) in public health, fire, emergency management, and law enforcement for feedback. The control sample intelligence document was designed consistent with the model below, with the researcher producing, distributing and receiving feedback on the sample intelligence document in a manner similar to existing intelligence production.

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[76] *User Acceptance of Computer Technology: A Comparison of Two Theoretical Models*, 982-1003.
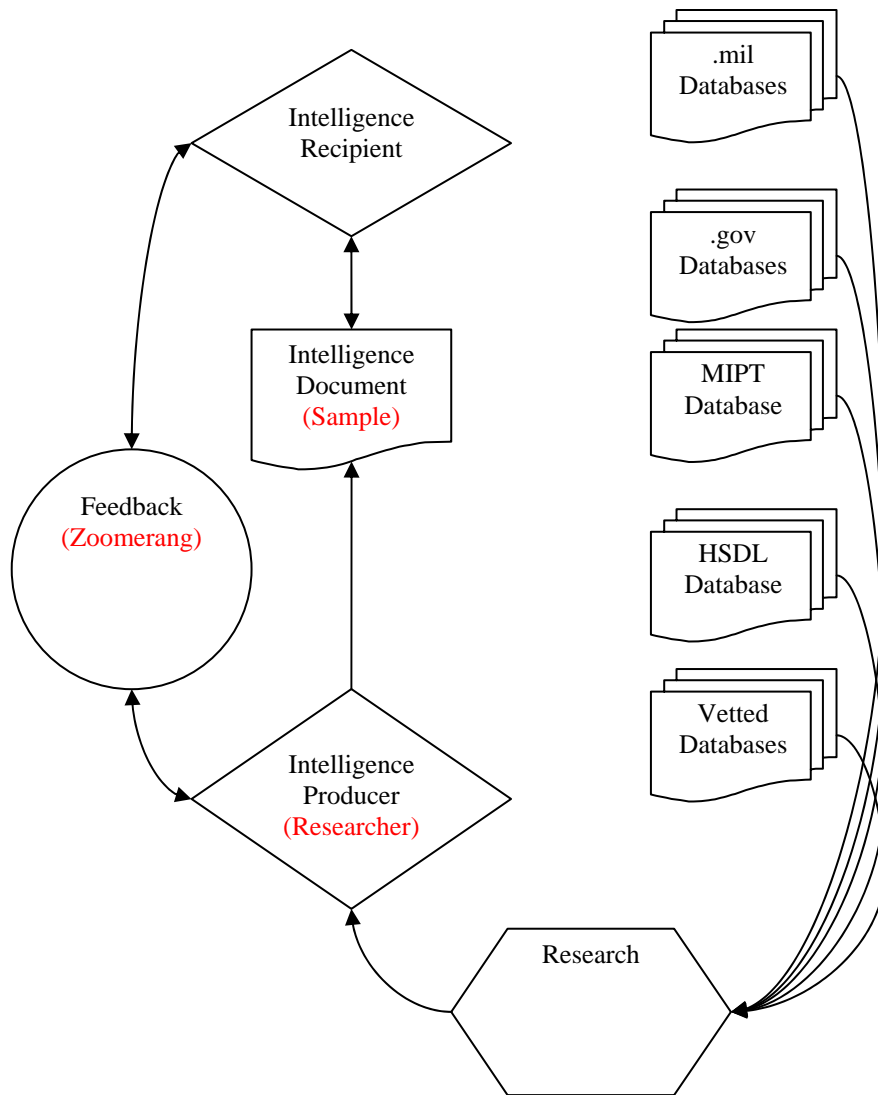
Figure 4.   Control sample design process

The experimental sample intelligence document with hyperlinks was designed consistent with the model below, with the researcher producing, distributing and receiving feedback.
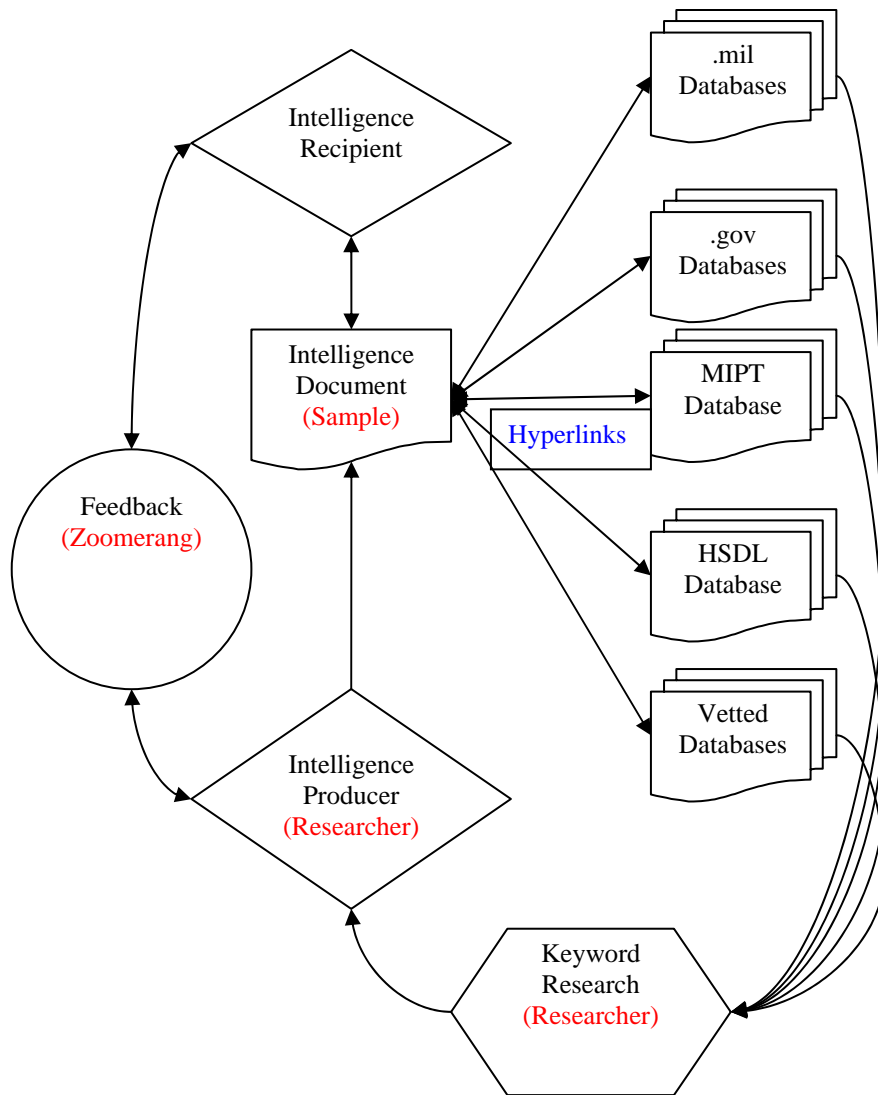
Figure 5.   Experimental sample design process

The hyperlinks utilized in the sample survey product led to contextual background at government funded open source Internet sites vetted by the researcher (Appendix A). In addition, one hyperlink to a company website specifically identified in the intelligence document was included, http://www.huntingdon.com.

SME suggested a "header" and "legalistic sounding disclaimer" to make the survey look more realistic, as well as changing one jurisdiction choice from "city" to "local." After making these adjustments, the survey was distributed to the target audience, who were requested to complete the survey and forward the survey to other

homeland security professionals. As this research utilizes customer satisfaction survey questions from the Department of Homeland Security and Federal Bureau of Investigation, two major producers of unclassified intelligence, a bifurcated sampling method was utilized. In one frame invitations to participate in the survey were emailed to current and former students of the DHS sponsored Naval Postgraduate School, Center for Homeland Defense and Security (CHDS). These students, all of which were selected by DHS to attend the school, include diverse homeland security disciplines including, police, fire, public health, military, EMS, and emergency management. This sampling frame is intended to represent intelligence recipients of interest to DHS. As every current and former student was invited to participate, these students represent the entire universe of CHDS students and no further sampling was needed to survey this population.

A second sampling frame consisted of former students of the FBI National Academy (FBINA). Similar to the DHS sponsored CHDS; each student attending the FBINA is sponsored and selected by one of the fifty-six FBI Field Offices. Each student attending the FBINA is a member of law enforcement, representing local, county, state and international jurisdictions. By 2005, over 38,000 students from 220 sessions had attended FBINA, so further sampling was required. Several domestic students from FBINA session 214 were selected to represent intelligence recipients of interest to the FBI; several CHDS law enforcement survey recipients have previously attended FBINA, however none had attended session 214, avoiding an overlap of samples. A total of 172 email invitations to participate in the survey were sent to current and former homeland security professionals sponsored by the FBI or DHS to attend these courses. Snowball style secondary distribution by these initial recipients was encouraged.

a. DHS/FBI Customer Satisfaction Survey Questions

Quality:
1. The Product was timely and relevant to your mission, programs, priorities, or initiatives.
2. The product was clear and logical in the presentation of information with supported judgments and conclusions.
3. The product is reliable; i.e., sources well documented and reputable.

Value:

1. The product would contribute to satisfying intelligence gaps or predicating cases or intelligence operations, especially previously unknown areas.

2. The product would result in a change in investigative or intelligence priorities and/or a shift from unaddressed to addressed work, or vice versa.

3. The product would result in more informed decisions concerning investigative or intelligence initiatives and/or resource allocation.

4. The product would identify new information associated with pending matters or offered insights into information that could change the working premise in a program or initiative.

       Figure 1 is a screen shot of a DHS/FBI customer satisfaction survey distributed to NTR.

b. *Technology Acceptance Model*

Perceived usefulness:

1. Using the intelligence product with hyperlinks in my job would enable me to accomplish tasks more quickly.

2. Using intelligence products with hyperlinks would improve my job performance.

3. Using intelligence products with hyperlinks would increase my productivity.

4. Using intelligence products with hyperlinks would enhance my effectiveness on the job.

5. Using intelligence products with hyperlinks would make it easier to do my job

6. I would find intelligence products with hyperlinks useful in my job.

Perceived ease of use:

1. Learning to utilize intelligence products with hyperlinks would be easy for me.

2. I would find it easy to use intelligence hyperlinks to obtain decision making information.

3. My interaction with the intelligence product with hyperlinks was clear and understandable.

4. I found the intelligence hyperlinks to be flexible to interact with.

5. It would be easy for me to become skillful at using intelligence products with hyperlinks.

6. I found the intelligence product with hyperlinks easy to use.

c. *Preference*

1. Which type of intelligence product would be of greater value to you and your organization?

The "Zoomerang" online survey tool utilized is included as Appendix E. The data obtained from the online survey was downloaded into a Statistical Package for the Social Sciences (SPSS) program for descriptive, bivariate, multivariate, correlation, regression and reliability analysis.

C. LIMITATIONS OF RESEARCH

It should be noted that the original list of survey recipients, although geographically diverse, was based on two advanced educational programs, which may introduce bias in the results; these professionals had attended the FBI National Academy or the Naval Postgraduate School Center for Homeland Defense and Security. As DHS and the FBI jointly distribute unclassified intelligence products and the questions utilized in the survey were in part based on their joint customer satisfaction survey, it is believed that sending the survey to students of a DHS sponsored (Center for Homeland Defense and Security), and FBI sponsored (FBI National Academy) program would represent a reasonable target audience for DHS/FBI intelligence products. Original distribution to homeland security students and alumni of the Naval Postgraduate School Center for Homeland Defense and Security (NPS CHDS) and FBI National Academy (FBINA) graduates may not adequately represent the technological diversity of homeland security professionals, given the online format of NPS CHDS and leadership positions of FBINA graduates. Pilot study SME feedback, participant free form comments and demographic results reflect stronger ecological validity than external validity; while the survey was originally widely distributed, the anonymous nature of feedback and low frequency of individual jurisdiction/discipline responses demands caution interpreting individual discipline and jurisdiction results.

As research surveys were completed through an anonymous online survey instrument, participants were not able to be contacted for response clarification. The "snowball" distribution style, where those who were originally requested to participate

were encouraged to redistribute to their homeland security contacts, reduces validity, while increasing sample size. This distribution style can introduce bias as it reduces the likelihood that the respondents represent an appropriate population sample. Secondary distribution by these recipients, not controlled by the researcher, was intended to similarly represent the target audience of the DHS and the FBI; the extent to which this sample does not represent the target audience of these agencies represents potential bias in the survey results.[77]

As the survey responses were anonymous, recipients who visited the site or only partially completed the survey, then came back to complete the survey, registered as a visit, a partial and a complete response. Since one recipient may be included in the number of times the site was "visited," the number of "partial" responses and the number of "complete" responses, only completed survey data were utilized for research, and the resulting visit/partial/complete response rates are not utilized. 285 surveys were completed, 182 partial responses were not utilized, and the website was visited a total of 648 times. From this data, the response rate may have been anywhere from 44% to 100%. Not knowing the true response rate is a limitation in this research.

The sample was derived from DHS and FBI sponsored educational programs that do not generally include private sector participants; one result is that the two million private sector security professionals are under represented in this research.

D. RESULTS

1. Demographics

The sample contained 285 responses, all of which were usable. Six discipline choices were offered in the survey; law enforcement was the largest single represented discipline with 35.1% of responses. Forty-nine "Other" responses fell into the following generalized categories:

United States Coast Guard

Military

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[77] *Survey Sampling Methods*, Stat Pac, 1, http://www.statpac.com/surveys/sampling.htm (accessed September 10, 2006).

Homeland Security

Intelligence

Public Works

Medical

Legal

Private Sector

Discipline

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Other	49	17.2	17.2	17.2
	Public Health	42	14.7	14.7	31.9
	Law Enforcement	100	35.1	35.1	67.0
	Fire	51	17.9	17.9	84.9
	EMS	7	2.5	2.5	87.4
	Emergency Management	36	12.6	12.6	100.0
	Total	285	100.0	100.0	

Table 1. Discipline Demographics

Six jurisdictions were represented; the largest single jurisdiction was local respondents at 41.1%. Twenty-four "Other" responses fell into the following general categories:

District of Columbia

Academia

Tribal

Multi County

Jurisdiction

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Other	24	8.4	8.4	8.4
	Federal	56	19.6	19.6	28.1
	State	46	16.1	16.1	44.2
	County	39	13.7	13.7	57.9
	Local	117	41.1	41.1	98.9
	Private Sector	3	1.1	1.1	100.0
	Total	285	100.0	100.0	

Table 2. Jurisdiction Demographics.

The largest single discipline/jurisdiction respondent combination was local law enforcement, with fifty individual responses or 17.5% of total respondents, followed by local fire at 14.4%. Table 2 documents the counts and percentages of each combination of jurisdiction and discipline.

2.   Responses DHS/FBI Quality

The three questions comprising the DHS/FBI Quality component of customer satisfaction surveys,

1. The Product was timely and relevant to your mission, programs, priorities, or initiatives.

2. The product was clear and logical in the presentation of information with supported judgments and conclusions.

3. The product is reliable; i.e., sources well documented and reputable.

were compared for the standard and CBF products.

Question 1

The Product was timely and relevant to your mission, programs, priorities, or initiatives.

		Mean	
Discipline	Jurisdiction	Standard Timely and Relevant	CBF Timely and Relevant
Other	Other	3.00	3.50
	Federal	2.74	3.05
	State	4.18	4.55
	County	2.00	4.00
	Local	3.29	3.43
	Private Sector	3.33	3.67
	Total	3.22	3.58
Public Health	Other	1.88	2.00
	Federal	2.00	2.00
	State	3.30	3.33
	County	3.60	3.47
	Local	3.83	3.67
	Total	3.15	3.10
Law Enforcement	Other	3.25	3.75
	Federal	3.33	3.52
	State	4.14	4.00
	County	3.83	3.83
	Local	3.57	3.96
	Total	3.60	3.85
Fire	Other	3.00	3.00
	State	2.00	2.00
	County	3.14	3.71
	Local	3.63	4.00
	Total	3.51	3.88
EMS	County	4.00	4.00
	Local	3.67	3.67
	Total	3.71	3.71
Emergency Management	Other	3.25	3.75
	Federal	3.13	3.25
	State	3.38	3.50
	County	3.11	3.22
	Local	3.86	4.29
	Total	3.33	3.56
Total	Other	2.68	3.00
	Federal	3.04	3.25
	State	3.77	3.86
	County	3.41	3.54
	Local	3.61	3.93
	Private Sector	3.33	3.67
	Total	3.42	3.66

Table 3. DHS/FBI "Quality" question 1 response demographics.

State law enforcement, local and county public health responses reflect a belief that the standard product was more timely and relevant to their mission, programs, priorities, or initiatives; federal public health, county law enforcement, state fire, other fire, and all EMS respondents did not have a preference in which product was more timely and relevant to their mission, programs, priorities while all eighteen others preferred the CBF product. On average, public health and federal respondents rated both standard and CBF products lower than other disciplines and jurisdictions. In no case did federal respondents rate the CBF product lower than the standard product; the mean improvement of federal respondents was 5.82%. As a discipline, public health rated the CBF slightly lower than the standard product (1.59%). Overall, the mean results for all disciplines combined improved 7% with the application of CBF from 3.42 to 3.66 on the 6-point scale.

Question 2

The product was clear and logical in the presentation of information with supported judgments and conclusions.

Mean

Discipline	Jurisdiction	Standard Clear and Logical	CBF Clear and Logical
Other	Other	3.25	4.40
	Federal	3.45	3.81
	State	3.75	4.25
	County	2.00	5.00
	Local	3.57	4.14
	Private Sector	3.33	4.00
	Total	3.49	4.06
Public Health	Other	2.67	3.44
	Federal	2.50	2.50
	State	3.50	4.00
	County	3.53	3.93
	Local	3.83	4.17
	Total	3.33	3.80
Law Enforcement	Other	4.00	4.25
	Federal	3.50	4.13
	State	3.80	4.27
	County	3.33	4.33
	Local	3.70	4.12
	Total	3.66	4.16
Fire	Other	3.50	4.00
	State	3.00	3.00
	County	3.00	4.00
	Local	4.02	4.20
	Total	3.84	4.14
EMS	County	4.00	4.00
	Local	3.33	4.17
	Total	3.43	4.14
Emergency Management	Other	3.25	3.75
	Federal	3.63	3.75
	State	3.38	3.75
	County	3.33	3.56
	Local	4.00	4.57
	Total	3.53	3.86
Total	Other	3.17	3.88
	Federal	3.46	3.89
	State	3.63	4.09
	County	3.33	3.95
	Local	3.81	4.18
	Private Sector	3.33	4.00
	Total	3.59	4.05

Table 4. DHS/FBI "Quality" question 2 response demographics.

No identified group indicated that the standard product was more clear or logical in the presentation of information with supported judgments and conclusions, while county EMS, state fire, and federal public health showed no preference. Twenty four other combinations of jurisdiction and discipline believed the CBF product was more clear and logical. Mean results improved approximately 13% with the application of CBF from 3.59 to 4.05 on the 6-point scale. Although never rating the standard product higher than the CBF product, public health and federal respondents continued to rate both products lower than the average of all disciplines and jurisdictions.

Question 3

The product is reliable; i.e., sources well documented and reputable.

Mean

Discipline	Jurisdiction	Standard Reliable	CBF Reliable
Other	Other	3.40	4.20
	Federal	3.50	4.33
	State	3.82	4.42
	County	4.00	5.00
	Local	3.00	4.71
	Private Sector	3.67	4.67
	Total	3.51	4.43
Public Health	Other	2.50	3.67
	Federal	2.50	3.50
	State	3.11	4.13
	County	3.27	3.87
	Local	2.83	4.00
	Total	2.98	3.88
Law Enforcement	Other	3.75	4.75
	Federal	3.13	4.17
	State	3.33	4.47
	County	3.83	4.33
	Local	3.39	4.37
	Total	3.36	4.35
Fire	Other	3.00	3.50
	State	2.00	2.00
	County	2.71	4.29
	Local	3.78	4.23
	Total	3.57	4.16
EMS	Local	3.17	4.17
	Total	3.17	4.17
Emergency Management	Other	2.50	4.50
	Federal	3.38	3.88
	State	2.75	4.50
	County	3.00	3.44
	Local	3.43	4.50
	Total	3.06	4.09
Total	Other	2.96	4.08
	Federal	3.28	4.16
	State	3.27	4.34
	County	3.21	3.95
	Local	3.47	4.32
	Private Sector	3.67	4.67
	Total	3.32	4.22

Table 5. DHS/FBI "Quality" question 3 response demographics.

No identified group believed the standard product was more reliable; i.e., sources well documented and reputable; state fire showed no preference and twenty five other combinations of jurisdiction and discipline believed the CBF product was more reliable. Mean results improved approximately 27% with the application of CBF from 3.32 to 4.22 on the 6-point scale, the greatest improvement of any variable reviewed. Public health and federal respondents once again rated both products lower than the overall average of all disciplines and jurisdictions.

3.   DHS/FBI Quality

Appendix D reflects the intention of DHS/FBI to define and obtain feedback on intelligence product quality by requesting responses to the above three questions under the heading of "quality." The individual responses to the three questions were combined to form a DHS/FBI Quality factor; the mean of the three quality questions was calculated for both standard and CBF responses by jurisdiction and discipline:

Mean

Discipline	Jurisdiction	Standard Average Quality	CBF Average Quality
Other	Other	3.0833	3.9167
	Federal	3.2833	3.7500
	State	3.9091	4.4444
	County	2.6667	4.6667
	Local	3.2857	4.0952
	Private Sector	3.4444	4.1111
	Total	3.4130	4.0355
Public Health	Other	2.6296	3.1852
	Federal	2.3333	2.6667
	State	3.4000	3.8889
	County	3.4667	3.7556
	Local	3.5000	3.9444
	Total	3.2222	3.6341
Law Enforcement	Other	3.6667	4.2500
	Federal	3.4267	3.9130
	State	3.8000	4.2444
	County	3.6667	4.1667
	Local	3.5867	4.1600
	Total	3.5867	4.1190
Fire	Other	3.1667	3.5000
	State	2.3333	2.3333
	County	2.9524	4.0000
	Local	3.8130	4.1707
	Total	3.6405	4.0850
EMS	County	4.6667	4.6667
	Local	3.3889	4.0000
	Total	3.5714	4.0952
Emergency Management	Other	3.0000	4.0000
	Federal	3.3750	3.6250
	State	3.1667	3.9167
	County	3.1481	3.4074
	Local	3.7619	4.5238
	Total	3.3056	3.8519
Total	Other	3.0000	3.6667
	Federal	3.3273	3.7610
	State	3.5926	4.1259
	County	3.3419	3.8291
	Local	3.6439	4.1624
	Private Sector	3.4444	4.1111
	Total	3.4775	3.9929

Table 6. DHS/FBI "Quality" factor response demographics.

When the three questions comprising the DHS/FBI quality factor are combined, county EMS and state fire showed no preference, while all twenty-five other combinations of jurisdiction and discipline indicated that the CBF product was of higher quality than the standard product. County EMS rated both products very high (4.66), while state fire rated both products very low (2.33). Mean results improved 14.82% with the application of CBF from 3.48 to 3.99 on the 6-point scale; overall public health and federal respondents followed the same CBF improvement results as all disciplines while rating both standard and CBF products lower than other disciplines/jurisdictions.

4. DHS/FBI Value

The four questions comprising the DHS/FBI Quality factor of customer satisfaction surveys,

1. The product would contribute to satisfying intelligence gaps or predicating cases or intelligence operations, especially previously unknown areas.

2. The product would result in a change in investigative or intelligence priorities and/or a shift from unaddressed to addressed work, or vice versa.

3. The product would result in more informed decisions concerning investigative or intelligence initiatives and/or resource allocation.

4. The product would identify new information associated with pending matters or offered insights into information that could change the working premise in a program or initiative.

were compared for the standard and CBF products.

Question 1

The product would contribute to satisfying intelligence gaps or predicating cases or intelligence operations, especially previously unknown areas.

		Mean	
Discipline	Jurisdiction	Standard Satisfying Gaps	CBF Satisfying Gaps
Other	Other	3.20	4.00
	Federal	2.95	3.57
	State	3.50	4.00
	County	4.00	4.00
	Local	3.29	3.83
	Private Sector	3.67	4.33
	Total	3.23	3.81
Public Health	Other	2.50	3.50
	Federal	3.00	3.00
	State	3.20	3.38
	County	3.33	3.80
	Local	3.50	4.17
	Total	3.15	3.67
Law Enforcement	Other	3.25	4.75
	Federal	3.21	3.83
	State	3.20	4.13
	County	3.33	4.33
	Local	3.26	4.00
	Total	3.24	4.03
Fire	Other	3.00	3.50
	State	3.00	3.00
	County	3.00	4.00
	Local	3.78	4.03
	Total	3.63	3.98
EMS	County	4.00	3.00
	Local	3.17	3.83
	Total	3.29	3.71
Emergency Management	Other	3.75	4.25
	Federal	3.00	3.38
	State	3.25	4.00
	County	2.78	3.33
	Local	3.29	4.29
	Total	3.14	3.78
Total	Other	3.04	3.96
	Federal	3.07	3.64
	State	3.28	3.91
	County	3.18	3.79
	Local	3.45	4.02
	Private Sector	3.67	4.33
	Total	3.28	3.89

Table 7. DHS/FBI "Value" question 1 response demographics.

       Once again, federal responses paralleled those of other disciplines albeit with lower ratings; county EMS respondents preferred the standard product, state fire, federal public health, and county "other" showed no preference, and the twenty-three other jurisdiction/discipline combinations indicated that the CBF product would better contribute to satisfying intelligence gaps or predicating cases or intelligence operations, especially previously unknown areas. Mean results improved 18.6% with the application of CBF from 3.28 to 3.89 on the 6-point scale.

Question 2

The product would result in a change in investigative or intelligence priorities and/or a shift from unaddressed to addressed work, or vice versa.

Mean

Discipline	Jurisdiction	Standard Change	CBF Change
Other	Other	3.00	3.40
	Federal	2.74	3.30
	State	3.00	4.00
	County	2.00	5.00
	Local	3.17	3.67
	Private Sector	3.67	4.00
	Total	2.93	3.62
Public Health	Other	2.71	3.50
	Federal	3.00	3.00
	State	2.25	3.29
	County	3.00	3.67
	Local	3.50	3.83
	Total	2.87	3.55
Law Enforcement	Other	3.50	4.00
	Federal	3.04	3.67
	State	3.27	3.80
	County	3.17	3.83
	Local	3.18	3.66
	Total	3.17	3.71
Fire	Other	2.00	2.50
	State	3.00	2.00
	County	2.71	3.57
	Local	3.19	3.73
	Total	3.06	3.62
EMS	County	4.00	3.00
	Local	3.50	3.67
	Total	3.57	3.57
Emergency Management	Other	3.25	4.00
	Federal	2.75	2.88
	State	3.14	3.71
	County	3.11	3.44
	Local	3.57	4.14
	Total	3.14	3.57
Total	Other	2.95	3.57
	Federal	2.89	3.39
	State	2.98	3.71
	County	3.00	3.64
	Local	3.24	3.72
	Private Sector	3.67	4.00
	Total	3.08	3.63

Table 8. DHS/FBI "Value" question 2 response demographics.

County EMS and state fire responses indicate that the standard product would result in a change in investigative or intelligence priorities and/or a shift from unaddressed to addressed work, or vice versa, federal public health showed no preference, while twenty-four other jurisdiction/disciplines preferred the CBF product. Mean results improved almost 18% with the application of CBF from 3.08 to 3.63 on the 6-point scale with federal respondents continuing their tendency to rate all products lower than other disciplines.

Question 3

The product would result in more informed decisions concerning investigative or intelligence initiatives and/or resource allocation.

		Mean	
Discipline	Jurisdiction	Standard Informed	CBF Informed
Other	Other	3.40	4.20
	Federal	3.15	3.76
	State	3.42	4.08
	County	4.00	5.00
	Local	2.86	3.43
	Private Sector	3.67	4.33
	Total	3.25	3.90
Public Health	Other	3.00	3.63
	Federal	3.00	3.50
	State	2.67	3.75
	County	3.80	4.07
	Local	4.00	4.00
	Total	3.38	3.87
Law Enforcement	Other	3.50	4.50
	Federal	3.29	3.83
	State	3.47	4.07
	County	3.33	4.17
	Local	3.42	4.04
	Total	3.39	4.02
Fire	Other	3.00	2.50
	State	3.00	3.00
	County	3.29	4.14
	Local	3.62	3.95
	Total	3.53	3.90
EMS	County	3.00	3.00
	Local	3.17	4.17
	Total	3.14	4.00
Emergency Management	Other	3.75	4.00
	Federal	2.88	3.25
	State	3.14	4.13
	County	3.33	3.44
	Local	4.00	4.57
	Total	3.37	3.83
Total	Other	3.30	3.87
	Federal	3.17	3.71
	State	3.23	4.00
	County	3.51	3.95
	Local	3.50	4.01
	Private Sector	3.67	4.33
	Total	3.38	3.93

Table 9. DHS/FBI "Value" question 3 response demographics.

"Other" fire indicated that the standard product would result in more informed decisions concerning investigative or intelligence initiatives and/or resource allocation, county EMS, state fire, and local public health showed no preference and twenty-three other combinations indicated that the CBF product was superior with federal respondents continuing to rate both products lower than other jurisdictions. Mean results improved approximately 16% with the application of CBF from 3.38 to 3.93 on the 6-point scale.

The product would identify new information associated with pending matters or offered insights into information that could change the working premise in a program or initiative.

Mean

Discipline	Jurisdiction	Standard New Information	CBF New Information
Other	Other	3.40	4.20
	Federal	3.05	3.71
	State	3.75	4.17
	County	4.00	5.00
	Local	3.33	3.83
	Private Sector	4.00	4.33
	Total	3.38	3.96
Public Health	Other	2.88	3.63
	Federal	3.00	3.50
	State	2.89	3.50
	County	3.80	3.80
	Local	3.50	4.17
	Total	3.33	3.74
Law Enforcement	Other	3.75	4.25
	Federal	3.42	3.96
	State	3.40	4.07
	County	3.33	4.00
	Local	3.34	3.96
	Total	3.38	3.99
Fire	Other	3.00	2.50
	State	4.00	4.00
	County	3.17	4.00
	Local	3.63	4.03
	Total	3.55	3.96
EMS	County	3.00	4.00
	Local	3.00	4.33
	Total	3.00	4.29
Emergency Management	Other	3.75	3.75
	Federal	3.00	3.38
	State	3.50	3.88
	County	3.11	3.44
	Local	3.57	4.29
	Total	3.33	3.72
Total	Other	3.30	3.78
	Federal	3.20	3.76
	State	3.42	3.95
	County	3.45	3.82
	Local	3.44	4.03
	Private Sector	4.00	4.33
	Total	3.39	3.92

Table 10. DHS/FBI "Value" question 4 response demographics.

"Other" fire indicated that the standard product would best identify new information associated with pending matters or offered insights into information that could change the working premise in a program or initiative, "other" emergency management, state fire, and county public health showed no preference, all twenty-three other combinations preferred the CBF product. Mean results improved over 15% with the application of CBF from 3.39 to 3.92 on the 6-point scale. Federal respondents continued to rate both products lower than other jurisdictions with emergency management rating both products lower than other disciplines.

DHS/FBI Value

The individual responses to the three questions were combined to form a DHS/FBI Value factor; the mean was calculated for both standard and CBF responses.

Mean

Discipline	Jurisdiction	Standard Average Value	CBF Average Value
Other	Other	3.2500	3.9500
	Federal	3.0125	3.6190
	State	3.4167	4.0625
	County	3.5000	4.7500
	Local	3.3571	3.9286
	Private Sector	3.7500	4.2500
	Total	3.2448	3.8673
Public Health	Other	2.8750	3.5625
	Federal	3.0000	3.2500
	State	2.8333	3.3214
	County	3.4833	3.8333
	Local	3.6250	4.0417
	Total	3.2125	3.6842
Law Enforcement	Other	3.5000	4.3750
	Federal	3.2396	3.8229
	State	3.3333	4.0167
	County	3.2917	4.0833
	Local	3.3000	3.9150
	Total	3.2980	3.9369
Fire	Other	2.7500	2.7500
	State	3.2500	3.0000
	County	3.2500	4.0714
	Local	3.6188	3.9408
	Total	3.5250	3.8906
EMS	County	3.5000	3.2500
	Local	3.2083	4.0000
	Total	3.2500	3.8929
Emergency Management	Other	3.6250	4.0000
	Federal	2.9063	3.2188
	State	3.4375	4.0000
	County	3.0833	3.4167
	Local	3.6071	4.3214
	Total	3.2847	3.7431
Total	Other	3.1848	3.7935
	Federal	3.0972	3.6364
	State	3.2722	3.8895
	County	3.3205	3.8269
	Local	3.4440	3.9605
	Private Sector	3.7500	4.2500
	Total	3.3143	3.8556

Table 11. DHS/FBI "Value" factor response demographics.

Appendix D reflects the intention of DHS/FBI to define and obtain feedback on intelligence product value by requesting responses to the above three questions under the heading of "value." When the three questions are averaged into a "value" factor, county EMS and state fire responses reflect a belief that the standard product was of more value, "other" fire showed no preference and the twenty-four other combinations of jurisdictions and disciplines indicated that the CBF product was of greater value; public health and federal responses rated all products lower than other disciplines and jurisdictions. Mean results improved 16.33% with the application of CBF from 3.3143 to 3.8556 on the 6-point scale. Both "value" and "quality" factors were defined by the DHS/FBI questions found in Figure 1 under those headings.

Regardless of discipline or jurisdiction, the mean of combined perceived value and quality factors improved with the application of CBF.

		Mean			
Discipline	Jurisdiction	Standard Average Value	CBF Average Value	Standard Average Quality	CBF Average Quality
Other	Other	3.25	3.95	3.0833	3.9167
	Federal	3.0125	3.619	3.2833	3.75
	State	3.4167	4.0625	3.9091	4.4444
	County	3.5	4.75	2.6667	4.6667
	Local	3.3571	3.9286	3.2857	4.0952
	Private Sector	3.75	4.25	3.4444	4.1111
	Total	3.2448	3.8673	3.413	4.0355
Public Health	Other	2.875	3.5625	2.6296	3.1852
	Federal	3	3.25	2.3333	2.6667
	State	2.8333	3.3214	3.4	3.8889
	County	3.4833	3.8333	3.4667	3.7556
	Local	3.625	4.0417	3.5	3.9444
	Total	3.2125	3.6842	3.2222	3.6341
Law Enforcement	Other	3.5	4.375	3.6667	4.25
	Federal	3.2396	3.8229	3.4267	3.913
	State	3.3333	4.0167	3.8	4.2444
	County	3.2917	4.0833	3.6667	4.1667
	Local	3.3	3.915	3.5867	4.16
	Total	3.298	3.9369	3.5867	4.119
Fire	Other	2.75	2.75	3.1667	3.5
	State	3.25	3	2.3333	2.3333
	County	3.25	4.0714	2.9524	4
	Local	3.6188	3.9408	3.813	4.1707
	Total	3.525	3.8906	3.6405	4.085
EMS	County	3.5	3.25	4.6667	4.6667
	Local	3.2083	4	3.3889	4
	Total	3.25	3.8929	3.5714	4.0952
Emergency Management	Other	3.625	4	3	4
	Federal	2.9063	3.2188	3.375	3.625
	State	3.4375	4	3.1667	3.9167
	County	3.0833	3.4167	3.1481	3.4074
	Local	3.6071	4.3214	3.7619	4.5238
	Total	3.2847	3.7431	3.3056	3.8519
Total	Other	3.1848	3.7935	3	3.6667
	Federal	3.0972	3.6364	3.3273	3.761
	State	3.2722	3.8895	3.5926	4.1259
	County	3.3205	3.8269	3.3419	3.8291
	Local	3.444	3.9605	3.6439	4.1624
	Private Sector	3.75	4.25	3.4444	4.1111
	Total	3.3143	3.8556	3.4775	3.9929

Table 12. Combined DHS/FBI "Quality" and "Value" factor demographics.

5.   Analysis DHS/FBI Value/Quality/Standard/CBF Comparisons

In choosing statistical tests it is important to determine whether the results are dependent or independent. If the means (averages) are based on the same people answering all questions, the means are considered dependent, as is the case in this research. Another critical step is to determine whether the data obtained is normally distributed (parametric), or non parametric. By obtaining a basic knowledge of the underlying distribution of a variable, we can make predictions about the results of repeated samples. Normal distribution is reflected in a "bell curve." A review of the data in this research shows that it is non parametric. It is similarly important to determine if the data is nominal, ordinal, or scaled. Nominal data are labels such as "married" or "single" that can be counted, but not be ordered or measured. In this research, jurisdiction and discipline are nominal data. Ordinal data are values or observations that can be ranked, or have a rating scale attached. You can count and order, but not measure ordinal data. Scaled data is a measurement where the distance between any two units of measurements is the same, but the zero point is arbitrary, not attached to the rating scale. The Likert scales used in this research are ordinal, with positive "whole number" integers attached to a rating scale. For dependent, ordinal results as in this research, the Wilcoxon test for paired data is appropriate to test the null hypothesis that there is no difference in responses to standard and CBF products, in order to determine if it is appropriate to reject the null hypothesis (H_0) in favor of the alternative hypothesis (H_1). The Wilcoxon test computes the difference in scores, ranks those differences in scores, and then computes the mean rank for all cases with a negative difference and positive difference. The number of scores in each question varies due to the N/A option provided in the DHS/FBI surveys that were dropped in this computation. The Wilcoxon signed rank test is similar to the t test of central tendency; however it is more robust as it does not assume a normal distribution. Given the non parametric distribution of data observed in this data, the Wilcoxon signed rank test is a more powerful test than the t test.

		N	Mean Rank	Sum of Ranks
CBF Timely and Relevant – Standard Timely and Relevant	Negative Ranks	22(a)	47.32	1041.00
	Positive Ranks	76(b)	50.13	3810.00
	Ties	177(c)		
	Total	275		
CBF Clear and Logical – Standard Clear and Logical	Negative Ranks	23(d)	48.50	1115.50
	Positive Ranks	109(e)	70.30	7662.50
	Ties	148(f)		
	Total	280		
CBF Reliable – Standard Reliable	Negative Ranks	9(g)	48.50	436.50
	Positive Ranks	147(h)	80.34	11809.50
	Ties	118(i)		
	Total	274		
CBF Satisfying Gaps – Standard Satisfying Gaps	Negative Ranks	22(j)	60.32	1327.00
	Positive Ranks	137(k)	83.16	11393.00
	Ties	117(l)		
	Total	276		
CBF Change – Standard Change	Negative Ranks	15(m)	56.30	844.50
	Positive Ranks	122(n)	70.56	8608.50
	Ties	133(o)		
	Total	270		
CBF Informed – Standard Informed	Negative Ranks	18(p)	53.08	955.50
	Positive Ranks	120(q)	71.96	8635.50
	Ties	138(r)		
	Total	276		
CBF New Information – Standard New Information	Negative Ranks	21(s)	71.43	1500.00
	Positive Ranks	132(t)	77.89	10281.00
	Ties	122(u)		
	Total	275		

a   CBF Timely and Relevant < Standard Timely and Relevant
b   CBF Timely and Relevant > Standard Timely and Relevant
c   CBF Timely and Relevant = Standard Timely and Relevant
d   CBF Clear and Logical < Standard Clear and Logical
e   CBF Clear and Logical > Standard Clear and Logical
f   CBF Clear and Logical = Standard Clear and Logical
g   CBF Reliable < Standard Reliable
h   CBF Reliable > Standard Reliable
i   CBF Reliable = Standard Reliable
j   CBF Satisfying Gaps < Standard Satisfying Gaps
k   CBF Satisfying Gaps > Standard Satisfying Gaps
l   CBF Satisfying Gaps = Standard Satisfying Gaps
m CBF Change < Standard Change

n   CBF Change > Standard Change
o   CBF Change = Standard Change
p   CBF Informed < Standard Informed
q   CBF Informed > Standard Informed
r   CBF Informed = Standard Informed
s   CBF New Information < Standard New Information
t   CBF New Information > Standard New Information
u   CBF New Information = Standard New Information

Table 13. DHS/FBI Value/Quality/Standard/CBF comparison ranks.

	CBF Timely and Relevant – Standard Timely and Relevant	CBF Clear and Logical – Standard Clear and Logical	CBF Reliable – Standard Reliable	CBF Satisfying Gaps – Standard Satisfying Gaps	CBF Change – Standard Change	CBF Informed – Standard Informed	CBF New Information – Standard New Information
Z	-5.356(a)	-7.826(a)	-10.280(a)	-9.017(a)	-8.825(a)	-8.562(a)	-8.542(a)
Asymp. Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000

a   Based on negative ranks.
b   Wilcoxon Signed Ranks Test

Table 14. DHS/FBI Value/Quality/Standard/CBF Z scores.

	N	Mean	Std. Deviation	Minimum	Maximum
Standard Average Quality	282	3.4775	.92315	1.00	5.00
Standard Average Value	280	3.3143	.89596	1.00	5.00
CBF Average Quality	280	3.9929	.83527	1.00	5.00
CBF Average Value	277	3.8556	.89453	1.00	5.00

Table 15. DHS/FBI Value/Quality/Standard/CBF standard deviations.

		N	Mean Rank	Sum of Ranks
CBF Average Quality – Standard Average Quality	Negative Ranks	25(a)	65.08	1627.00
	Positive Ranks	168(b)	101.75	17094.00
	Ties	85(c)		
	Total	278		
CBF Average Value – Standard Average Value	Negative Ranks	34(d)	52.32	1779.00
	Positive Ranks	178(e)	116.85	20799.00
	Ties	64(f)		
	Total	276		

a   CBF Average Quality < Standard Average Quality
b   CBF Average Quality > Standard Average Quality
c   CBF Average Quality = Standard Average Quality
d   CBF Average Value < Standard Average Value
e   CBF Average Value > Standard Average Value
f   CBF Average Value = Standard Average Value

Table 16. DHS/FBI mean Value/Quality/Standard/CBF standard deviations.

	CBF Average Quality – Standard Average Quality	CBF Average Value – Standard Average Value
Z	-9.984(a)	-10.684(a)
Asymp. Sig. (2-tailed)	.000	.000

a Based on negative ranks.
b Wilcoxon Signed Ranks Test

Table 17. DHS/FBI Value/Quality/Standard/CBF Wilcoxon signed ranks test.

6.   Conclusions: Perceived Value and Quality

The Wilcoxon test conducted examines the hypothesis that there is no difference in perceived quality and value between standard and CBF products. This is not the case; the observed increased perception in both value and quality would occur fewer than once every thousand times if there really was no difference in perceived quality or value between the standard and CBF product. The improvement in perceived quality and value is statistically significant. While not included in the original hypothesis', the Wilcoxon test on each of the seven questions comprising the DHS/FBI quality and value measures would occur fewer than once every thousand times if there really were no difference between the standard and CBF products. The ranks chart shows that the CBF product was rated higher by an overwhelming margin, from three to sixteen times higher on individual variables (questions) and five to six times higher when combined into value and quality factors.

Reject H_0: There is no difference in intelligence product perceived value as represented by DHS/FBI customer satisfaction surveys, on average, with the application of CBF to open sources in favor of H_1: An intelligence product with CBF to open sources is perceived as more valuable based on DHS/FBI customer satisfaction surveys than a non- CBF product, on average.

Reject H_0: There is no difference in intelligence product perceived quality as represented by DHS/FBI customer satisfaction surveys, on average, with the application of CBF to open sources in favor of H_1: An intelligence product with CBF to open sources is perceived as higher quality based on DHS/FBI customer satisfaction surveys than a non-CBF product, on average.

7. **Responses: Technology Acceptance Model**

a. *Perceived Usefulness*

The six questions comprising the Technology Acceptance Model "Perceived Usefulness" factor of the survey,

1. Using the intelligence product with hyperlinks in my job would enable me to accomplish tasks more quickly.

2. Using intelligence products with hyperlinks would improve my job performance.

3. Using intelligence products with hyperlinks would increase my productivity.

4. Using intelligence products with hyperlinks would enhance my effectiveness on the job.

5. Using intelligence products with hyperlinks would make it easier to do my job

6. I would find intelligence products with hyperlinks useful in my job.

were evaluated to determine the perceived usefulness of hyperlink technology to achieve CBF in unclassified intelligence. On the 6-point Likert scale with 6 representing "strongly agree," and 1 "strongly disagree" with the usefulness of hyperlink technology, the mean varied from 4.42 to 4.74, with a mode of 5, indicating the respondents belief that hyperlink technology was useful in this application.

		Quickly	Performance	Productivity	Effectiveness	Easier	Useful
N	Valid	285	285	285	285	285	285
	Missing	0	0	0	0	0	0
Mean		4.61	4.47	4.42	4.49	4.60	4.74
Median		5.00	5.00	5.00	5.00	5.00	5.00
Mode		5	5	5	5	5	5
Std. Deviation		1.084	1.105	1.162	1.143	1.098	1.082
Variance		1.176	1.222	1.350	1.307	1.206	1.172
Skewness		-.853	-.617	-.565	-.633	-.754	-.961
Std. Error of Skewness		.144	.144	.144	.144	.144	.144
Kurtosis		.835	.336	-.077	.181	.409	1.030
Std. Error of Kurtosis		.288	.288	.288	.288	.288	.288

Table 18. TAM perceived usefulness variable descriptive statistics.

When the six components of perceived usefulness are combined, a mean of 4.5538 with a mode of 5 was found.

Perceived Usefulness

N	Valid	285
	Missing	0
Mean		4.5538
Median		4.8333
Mode		5.00
Std. Deviation		1.02732
Variance		1.055

Table 19. TAM perceived usefulness factor descriptive statistics.

Variation between disciplines was found, with public health respondents finding the hyperlinks useful, but less so than law enforcement and EMS respondents whose usefulness mode was 5 on the 6-point Likert scale. Variance is more fully explored in correlation, regression and multiple regression segments of this research.

Discipline	Average Usefulness
Other	4.5272
Public Health	4.0873
Law Enforcement	4.6967
Fire	4.5915
EMS	4.7381
Emergency Management	4.6481
Total	4.5538

Table 20. TAM perceived usefulness discipline responses.

b.   *Perceived Ease of Use*

The six questions comprising the Technology Acceptance Model "Perceived Ease of Use" factor of the survey,

1. Learning to utilize intelligence products with hyperlinks would be easy for me.

2. I would find it easy to use intelligence hyperlinks to obtain decision making information.

3. My interaction with the intelligence product with hyperlinks was clear and understandable.

4. I found the intelligence hyperlinks to be flexible to interact with.

5. It would be easy for me to become skillful at using intelligence products with hyperlinks.

6. I found the intelligence product with hyperlinks easy to use.

were evaluated to determine the perceived ease of use of hyperlinks to achieve CBF in unclassified intelligence. On the 6-point Likert scale with 6 representing "strongly agree," and 1 "strongly disagree" with the ease of use of hyperlink technology, The mean varied from 4.66 to 5.01, with a mode of 5, indicating the respondents belief that hyperlink technology was easy to use in this application.

		Easy	Decision Making	Clear	Flexible	Skillful	Easy to Use
N	Valid	285	285	285	285	285	285
	Missing	0	0	0	0	0	0
Mean		5.01	4.66	4.84	4.68	4.89	4.98
Median		5.00	5.00	5.00	5.00	5.00	5.00
Mode		5	5	5	5	5	5
Std. Deviation		1.026	1.135	1.054	1.067	1.060	1.017
Variance		1.053	1.289	1.110	1.139	1.123	1.035
Skewness		-1.183	-1.004	-.921	-.724	-1.022	-1.069
Std. Error of Skewness		.144	.144	.144	.144	.144	.144
Kurtosis		.609	.860	.713	.220	1.078	1.289
Std. Error of Kurtosis		.288	.288	.288	.288	.288	.288

Table 21. TAM perceived ease of use variable descriptive statistics.

When the six components of perceived ease of use are combined, a mean of 4.8439 with a mode of 5 was found.

Perceived Ease of Use

N	Valid	285
	Missing	0
Mean		4.8439
Median		5.0000
Mode		5.00
Std. Deviation		.96145
Variance		.924

Table 22. TAM perceived ease of use factor descriptive statistics.

Similar to usefulness, variation between disciplines was found in ease of use by discipline; public health respondents again found the hyperlinks useful, but less so than law enforcement whose mean ease of use response exceeded 5 on the 6-point Likert scale with a mode of 5.

Discipline	Average Ease of Use
Other	4.8605
Public Health	4.4762
Law Enforcement	5.0417
Fire	4.7778
EMS	4.8333
Emergency Management	4.7963
Total	4.8439

Table 23. TAM perceived ease of use discipline responses.

8.   Conclusions: Technology Acceptance

Survey data that shows an improvement in both usefulness and ease of use indicate a broad acceptance of hyperlink technology to achieve CBF across disciplines and jurisdictions, with strong evidence of support in all twelve validated technology acceptance model questions. With a mode of 5 out of a possible 6 on every question, respondents showed overwhelming acceptance of hyperlink technology use in unclassified intelligence to achieve CBF. It is important to note that the core of technology acceptance in this research is the perception that hyperlinking of contextual background to unclassified intelligence products is both useful and easy to use for homeland security professionals.

Discipline	Average Ease of Use	Average Usefulness
Other	4.8605	4.5272
Public Health	4.4762	4.0873
Law Enforcement	5.0417	4.6967
Fire	4.7778	4.5915
EMS	4.8333	4.7381
Emergency Management	4.7963	4.6481
Total	4.8439	4.5538

Table 24. TAM discipline responses.

Jurisdiction	Average Ease of Use	Average Usefulness
Other	4.6319	4.0972
Federal	4.8869	4.5863
State	5.0217	4.7391
County	4.4316	4.2821
Local	4.9373	4.6410
Private Sector	4.7222	4.8889
Total	4.8439	4.5538

Table 25. TAM jurisdiction responses.

All variables demonstrated strong acceptance, even the lowest ranked variable, productivity, received a score of 4.42 out of 6. Utilizing TAM to predict the actual use of technology, the model below diagrams the strong individual variable inputs to "usefulness" and "ease of use" factors that contribute toward the intent to use and ultimate predicted usage of CBF in unclassified intelligence. Previous research has documented that usefulness is the more important predictor of technology use as no matter how easy a technology is to use, it must be useful if it is to be accepted.
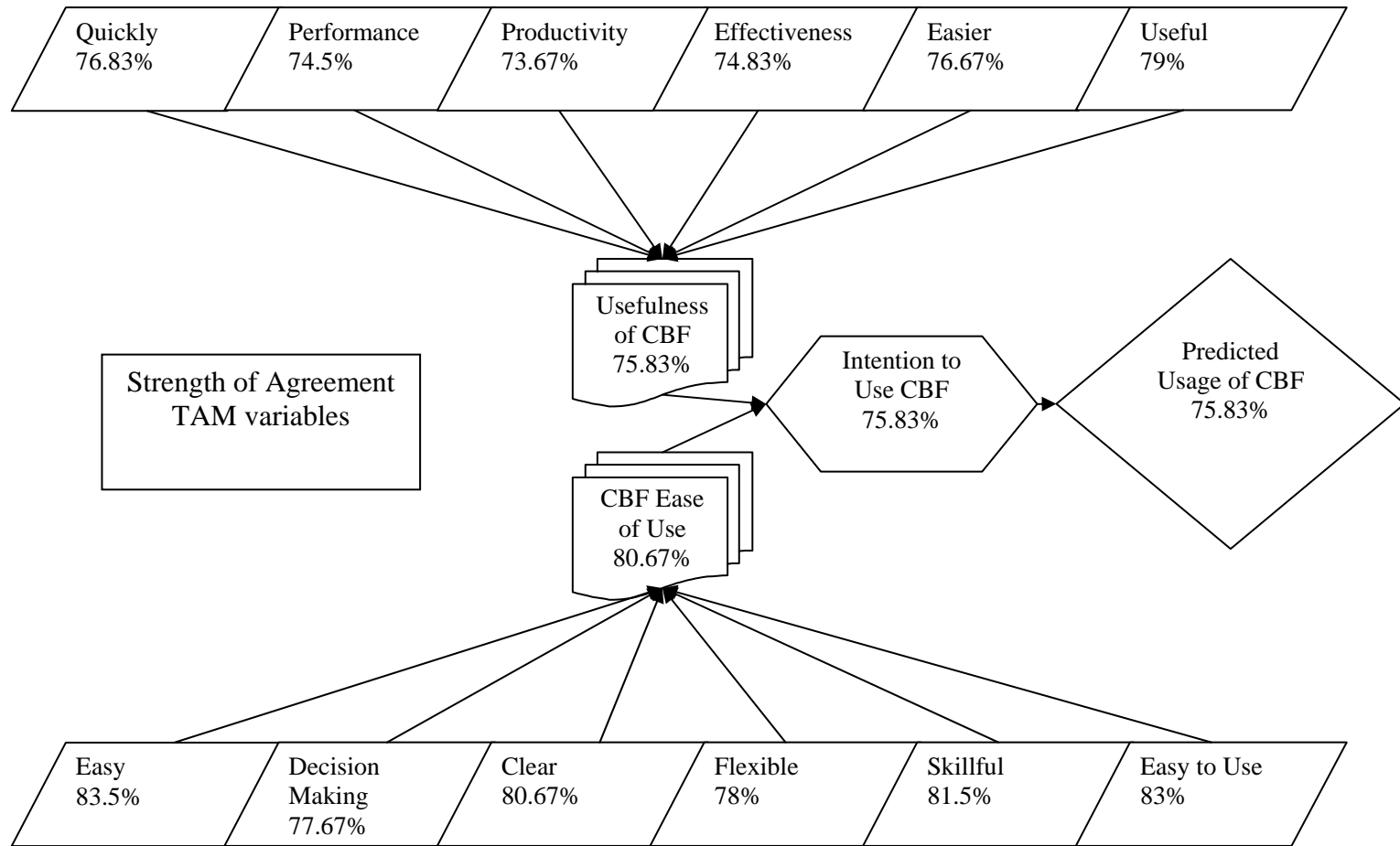
Figure 6.   Technology Acceptance Model Inputs to "Ease of Use" and "Usefulness" Leading to Predicted Usage of CBF

9. Standard vs. CBF Forced Choice Results

The final Likert question, "Which type of intelligence product would be of greater value to you and your organization?" represented a direct choice for subjects between CBF and standard unclassified intelligence products. On the Likert scale forced choice model, 1 represented "Non-Hyperlinked," and 6 "Hyperlinked."

		Frequency	Valid Percent
Valid	Non-Hyperlinked	1	.4
	2	4	1.4
	3	11	3.9
	4	20	7.0
	5	61	21.5
	Hyperlinked	187	65.8
	Total	284	100.0
Missing	System	1	
Total		285	

Table 26. Standard vs. CBF forced choice frequency.

N	Valid	284
	Missing	1
Mean		5.45
Median		6.00
Mode		6.00
Std. Deviation		.929

Table 27. Standard vs. CBF forced choice descriptive statistics.

Valid responses from 284 participants were obtained for this question with 187 or 65.8% of respondents indicating the strongest possible preference for the hyperlinked option offered, producing both a median and mode of 6 with a mean of 5.45; this indicates that given a choice, homeland security professionals overwhelmingly preferred the CBF product. One response was missing as the survey did not require a response to this question.

Although variation between disciplines is to be expected, all disciplines and jurisdictions uniformly preferred the CBF product with means ranging from 5.1 to 5.67

on the 6-point Likert scale with law enforcement, fire, local and private sector respondents showing the strongest preference for the CBF product.

Discipline	Greater Value
Other	5.43
Public Health	5.10
Law Enforcement	5.60
Fire	5.59
EMS	5.43
Emergency Management	5.33
Total	5.45

Table 28. Standard vs. CBF forced choice discipline means.

Jurisdiction	Greater Value
Other	5.38
Federal	5.49
State	5.41
County	5.13
Local	5.57
Private Sector	5.67
Total	5.45

Table 29. Standard vs. CBF forced choice jurisdiction means.

10.   Survey Comments

Survey participants were offered an opportunity to make any comments as a last question in the survey; 109 participants took the opportunity to make comments. The comments reflected the Likert survey results, overwhelmingly positive, with some concerns. Consistent with this research, many of the concerns highlighted the need to insure that all open source contextual background used be accurate and reliable. Table 3 includes all free form comments.

11.   Correlation Analysis

The Technology Acceptance Model (TAM) data in this research is ordinal (rank order) and can be ranked into two ordered series. The Spearman R test of correlation is an appropriate test that can be computed from ranks. In reviewing correlations, all of which were significant at the .01 level, it is clear that the forced choice question, "Which

type of intelligence product would be of greater value to you and your organization?" has greater correlations to all the technology acceptance model questions than DHS/FBI quality and value questions. The correlation coefficient can range in value from -1.00 to +1.00, with +1.00 indicating a perfect, positive linear relationship and -1.00 a perfect, inverse relationship. Correlations between two variables does not imply causality, it is possible that other variables are causing the correlation in whole or in part. The Technology Acceptance Model questions have correlation coefficients ranging from +.428 to +.581 with the forced choice "greater value" question, while DHS/FBI value and quality correlation coefficients ranged from +.199 to +.339. As the Department of Homeland Security and FBI are interested in improving the perceived value of unclassified intelligence product for individuals and organizations, these results warrant further examination. If the forced choice "greater value" question results are accurate, there is more correlation between "greater value" and the validated TAM questions than the DHS/FBI quality and value questions currently in use.

Technology Acceptance Model questions demonstrated strong intra factor correlations between "Usefulness" questions with r values ranging from .724-.880, consistent with prior validating research on this model and contributing to a conclusion that the minor adaptations of original TAM questions necessary for this research maintained that validity. TAM "Ease of Use" showed similarly strong intra factor correlations ranging between .705-.878 supporting prior research. Discriminate validity is evidenced by the low number of item correlations (2/30) that were higher between "Usefulness" and "Ease of Use" than within "Usefulness" and "Ease of Use." These observations lead to the conclusion that the questions represent two separate factors and that the questions discriminate between these two factors.

This conclusion is supported through a single summary statistic, Cronbach's Alpha analysis of reliability:

Cronbach's Alpha	N of Items
.965	6

Table 30. Cronbach's Alpha "Usefulness" reliability statistics.

A Cronbach's Alpha analysis of reliability can be utilized to determine to what degree a survey maker was successful in constructing questions that measure a person's opinion. It provides a lower bound for the true reliability of a survey, analyzing whether the survey will differ because respondents have different opinions, as opposed to confusion or multiple interpretations of survey questions. The statistic is determined based on the number of items in a survey, and measurements of covariance ratios.

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.957	.958	6

Table 31. Cronbach's Alpha "Ease of Use" reliability statistics.

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.818	.824	3

Table 32. Cronbach's Alpha "Quality" reliability statistics.

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.925	.925	4

Table 33. Cronbach's Alpha "Value" reliability statistics.

Strong intra factor reliability is indicated in the Cronbach's Alpha of each of the four factors utilized in this survey with ranges from .818 to .965.

The three questions representing the DHS/FBI "Quality" factor showed much lower intra factor correlations than TAM factors, ranging between .489 and .679. The "Quality" factor questions were almost equally correlated with DHS/FBI "Value" questions with correlations ranging between .448-.645, a possible indication that the

76

DHS/FBI quality and value factor questions are not measuring two separate factors of value and quality; this warrants further research.

The four questions within the DHS/FBI "Value" factor had correlations between .685-.767, showing stronger correlations than the DHS/FBI "Quality" measurements, and indicating that the "value" questions were more closely measuring the same factor.

	v1	v2	v3	v4	v5	v6	v7	v8	v9	v10	v11	v12	v13	v14	v15	v16	v17	v18	v19	v20
V1	1.00	.816	.815	.769	.771	.724	.589	.627	.637	.569	.600	.607	.428	.340	.408	.439	.444	.380	.461	.448
V2	.816	1.00	.877	.846	.796	.762	.553	.681	.606	.579	.563	.563	.466	.370	.482	.453	.508	.434	.485	.485
V3	.815	.877	1.00	.880	.814	.761	.531	.652	.614	.561	.560	.570	.467	.384	.473	.493	.510	.449	.480	.467
V4	.769	.846	.880	1.00	.856	.806	.574	.700	.634	.600	.618	.642	.542	.374	.456	.445	.471	.437	.492	.493
V5	.771	.796	.814	.856	1.00	.853	.647	.708	.685	.627	.691	.688	.540	.344	.412	.414	.426	.366	.474	.465
V6	.724	.762	.761	.806	.853	1.00	.663	.741	.700	.624	.664	.673	.526	.347	.392	.424	.424	.376	.474	.489
V7	.589	.553	.531	.574	.647	.663	1.00	.717	.842	.718	.838	.806	.536	.163	.242	.297	.219	.188	.271	.234
V8	.627	.681	.652	.700	.708	.741	.717	1.00	.756	.721	.744	.705	.524	.316	.400	.403	.377	.341	.425	.390
V9	.637	.606	.614	.634	.685	.700	.842	.756	1.00	.804	.826	.825	.518	.282	.384	.428	.329	.260	.368	.350
V10	.569	.579	.561	.600	.627	.624	.718	.721	.804	1.00	.768	.787	.503	.311	.383	.415	.337	.279	.369	.331
V11	.600	.563	.560	.618	.691	.664	.838	.744	.826	.768	1.00	.878	.574	.249	.292	.371	.270	.225	.296	.291
V12	.607	.563	.570	.642	.688	.673	.806	.705	.825	.787	.878	1.00	.581	.256	.343	.403	.287	.223	.345	.321
V13	.428	.466	.467	.542	.540	.526	.536	.524	.518	.503	.574	.581	1.00	.199	.289	.339	.321	.272	.291	.310
V14	.340	.370	.384	.374	.344	.347	.163	.316	.282	.311	.249	.256	.199	1.00	.604	.489	.577	.567	.523	.506
V15	.408	.482	.473	.456	.412	.392	.242	.400	.384	.383	.292	.343	.289	.604	1.00	.679	.645	.522	.601	.540
V16	.439	.453	.493	.445	.414	.424	.297	.403	.428	.415	.371	.403	.339	.489	.679	1.00	.619	.448	.575	.513
V17	.444	.508	.510	.471	.426	.424	.219	.377	.329	.337	.270	.287	.321	.577	.645	.619	1.00	.706	.767	.754
V18	.380	.434	.449	.437	.366	.376	.188	.341	.260	.279	.225	.223	.272	.567	.522	.448	.706	1.00	.743	.685
V19	.461	.485	.480	.492	.474	.474	.271	.425	.368	.369	.296	.345	.291	.523	.601	.575	.767	.743	1.00	.764
v20	.448	.485	.467	.493	.465	.489	.234	.390	.350	.331	.291	.321	.310	.506	.540	.513	.754	.685	.764	1.00

All Correlations are significant at the 0.01 level (1-tailed).

Table 34. Pearson one tailed correlations.

TAM Usefulness Factor

v1	Quickly
v2	Performance
v3	Productivity
v4	Effectiveness
v5	Easier
v6	Useful

TAM Ease of Use Factor

v7   Easy

v8   Decision Making

v9   Clear

v10   Flexible

v11   Skillful

v12   Easy to Use

v13   Greater Value

DHS/FBI Quality Factor

v14   Hyperlinked Timely and Relevant

v15   Hyperlinked Clear and Logical

v16   Hyperlinked Reliable

DHS/FBI Value Factor

v17   Hyperlinked Satisfying Gaps

v18   Hyperlinked Change

v19   Hyperlinked Informed

v20   Hyperlinked New Information

12.   Regression Analysis

Regression analysis investigates the relationships between variables. It can be used to seek the causal effect of one variable upon another and estimates the statistical significance of or degree of confidence in, relationships. In looking at the impact of one variable upon another, we are conducting "simple regression analysis."   "Multiple regression" estimates the effect of each on a dependent variable and helps explain the impact of multiple simultaneous variables on another single variable. R^2 is the statistic that measures the amount of total variation that is explained by the variable.

In this research, multiple regression analysis with the dependent variable of "Which type of intelligence product would be of greater value to you and your organization?" was conducted with technology acceptance factors of "Usefulness" and "Ease of Use," along with the DHS/FBI customer satisfaction factors of "quality" and "value" in order to estimate the causal effect of the different variables within each of these factors on increasing the value of intelligence products.

In determining the type of multiple regression analysis that is appropriate, it is important to screen the data to determine if it is linear in nature. The TAM "Usefulness" graph with independent variables and "greater value" dependent value demonstrates that this data is linear, indicating that a linear multiple regression is appropriate.   The observed and expected cumulative probabilities can be observed to follow the straight line representing exact matches of observed and expected values.

13. **Multiple Regression Analysis Technology Acceptance Usefulness Factor**

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: greater value
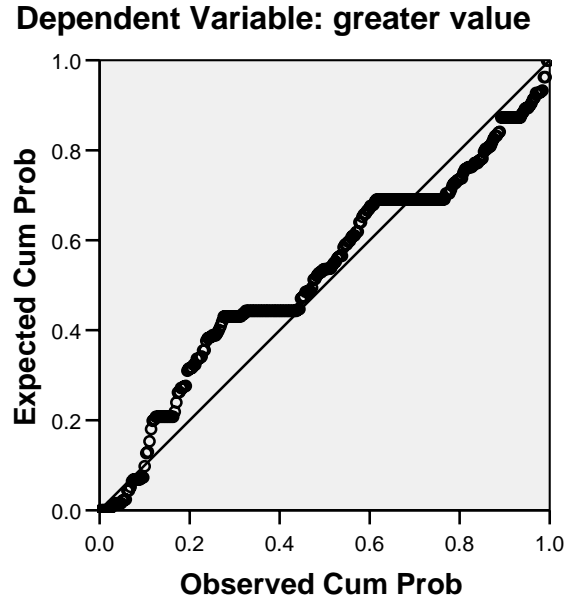
Greater value variable normal P-Plot of regression standardized residual.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.583(a)	.339	.325	.762

a Predictors: (Constant), Useful, Quickly, Productivity, Easier, performance, Effectiveness

b Dependent Variable: greater value

Table 35. Multiple Regression "Usefulness" model summary.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	83.074	6	13.846	23.815	.000(a)
	Residual	161.628	278	.581		
	Total	244.702	284			

a Predictors: (Constant), Useful, Quickly, Productivity, Easier, performance, Effectiveness

b Dependent Variable: greater value

Table 36. Multiple Regression "Usefulness" anova.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.180	.215		14.817	.000
	Quickly	-.106	.083	-.124	-1.275	.204
	Performance.	.030	.102	.035	.290	.772
	Productivity	-.096	.100	-.120	-.957	.339
	Effectiveness	.254	.105	.313	2.420	.016
	Easier	.084	.098	.099	.855	.393
	Useful	.323	.089	.377	3.634	.000

a   Dependent Variable: greater value

Table 37. Multiple Regression "Usefulness" coefficients.

R Square is an estimate of how well the model evaluated explains the population variance of the dependent variable, in this case "Which type of intelligence product would be of greater value to you and your organization?" In this analysis, all the questions in the TAM "Usefulness" factor together explain only 1/3 (.339) of the dependent variable, not a substantial predictor of "greater value."

It is useful to compare the "Regression" sum of squares with the "Residual" sum of squares. If the Regression is large in relation to Residual, the model being evaluated can be said to account for a large portion of the dependent variable variance. That is not the case in "Usefulness," the relatively high residual indicates that this model fails to explain much of the variation, and calls for examination of other variable sets.

Another critical value in this multiple regression is "t;" the t statistic indicates the relative importance of each variable (question) in the multiple regression model tested. Values substantially below -2.00 or above 2.00 may be considered useful predictors. In this analysis, "Using intelligence products with hyperlinks would enhance my effectiveness," and "I would find intelligence products with hyperlinks useful in my job" are useful predictors, as both have t above 2 and are significant at the .05 and .01 level respectively.   The other variables (questions) in the "Usefulness" factor did not substantially contribute.

A multivariate analysis utilizing only the two variables shown in the full "Usefulness" factor analysis to have a t statistic over 2 demonstrates that these two variables account for almost all the variance predicted by the six variables in

"Usefulness." The R Square in this case actually increases from .339 to .377, indicating the two questions alone better explain the dependent variable variance than all six questions together, although the two question model still fails to explain much of the variation.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.614(a)	.377	.373	.735

a   Predictors: (Constant), easy to use, decision making
b   Dependent Variable: greater value

Table 38. "Usefulness" two variable multiple regression model summary.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	92.354	2	46.177	85.475	.000(a)
	Residual	152.348	282	.540		
	Total	244.702	284			

a   Predictors: (Constant), easy to use, decision making
b   Dependent Variable: greater value

Table 39. "Usefulness" two variable multiple anova.

14.   Multiple Regression Analysis Technology Acceptance Ease of Use Factor

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.623(a)	.388	.375	.734

a   Predictors: (Constant), easy to use, decision making, Flexible, Easy, Skillful, and Clear
b   Dependent Variable: greater value

Table 40. Multiple Regression "Ease of Use" model summary.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	95.036	6	15.839	29.421	.000(a)
	Residual	149.666	278	.538		
	Total	244.702	284			

a   Predictors: (Constant), easy to use, decision making, Flexible, Easy, Skillful, and Clear
b   Dependent Variable: greater value

Table 41. Multiple Regression "Ease of Use" anova.

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.503	.228		10.975	.000
	Easy	.146	.093	.161	1.569	.118
	decision making	.125	.060	.153	2.097	.037
	Clear	-.033	.104	-.038	-.323	.747
	Flexible	.095	.080	.109	1.183	.238
	Skillful	.026	.100	.029	.254	.800
	easy to use	.248	.110	.271	2.261	.025

a Dependent Variable: greater value

Table 42. Multiple Regression "Ease of Use" coefficients.

Although slightly higher than "Usefulness," "Ease of Use" R Square of .388 does not substantially predict the variance of "greater value." The large Regression compared to Residual will cause us to continue to look for variance sets that better explain "greater value" variance. Similar to "Usefulness," only two variables, "I would find it easy to use intelligence hyperlinks to obtain decision making information" and "I found the intelligence product with hyperlinks easy to use" have t statistics above 2, making them useful predictors of dependent variable variance.

15. Multiple Regression Analysis DHS/FBI Quality Factor

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.375(a)	.141	.131	.876

a Predictors: (Constant), H reliable, H timely and relevant, H clear and logical
b Dependent Variable: greater value

Table 43. Multiple Regression DHS/FBI quality factor model summary.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	33.687	3	11.229	14.624	.000(a)
	Residual	205.783	268	.768		
	Total	239.471	271			

a Predictors: (Constant), H reliable, H timely and relevant, H clear and logical
b Dependent Variable: greater value

Table 44. Multiple Regression DHS/FBI quality factor anova.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.763	.269		14.000	.000
	H timely and relevant	-.040	.064	-.046	-.625	.532
	H clear and logical	.115	.089	.114	1.286	.199
	H reliable	.327	.083	.312	3.951	.000

a   Dependent Variable: greater value

Table 45. Multiple Regression DHS/FBI quality variable coefficients.

As might be expected after reviewing the bivariate correlation results that showed the individual correlations of the technology acceptance variables to have stronger correlations with "greater value" than the DHS/FBI Quality and Value factors, the multiple regression analysis of "DHS/FBI Quality" has less explanatory power than the TAM factors. The "Quality" R Square indicates that only 14% of dependent variable variance is explained by this factor, the high Regression to Residual ratio causes us to look for other explanations, and only one of the three questions, "The product is reliable; i.e., sources well documented and reputable" has a t statistic above 2, albeit the highest yet at 3.951. A review of the "reliable" variable alone shows only a minor drop in variance explanation from 14% for all three variables to 13% with the single variable.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.363(a)	.132	.128	.874

a   Predictors: (Constant), H reliable
b   Dependent Variable: greater value

Table 46. Multiple Regression DHS/FBI quality "reliable" variable model summary.

16.   Multiple Regression Analysis DHS/FBI Value Factor

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.325(a)	.106	.092	.894

a   Predictors: (Constant), H new information, H change, H satisfying gaps, H informed
b   Dependent Variable: greater value

Table 47. Multiple Regression DHS/FBI value factor model summary.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.156	.240		17.314	.000
	H satisfying gaps	.061	.096	.066	.640	.523
	H change	.004	.091	.004	.040	.968
	H informed	.048	.108	.051	.448	.654
	H new information	.217	.098	.226	2.221	.027

a   Dependent Variable: greater value

Table 48. Multiple Regression DHS/FBI value factor variable coefficients.

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4.49	5.81	5.45	.305	273
Residual	-4.043	1.514	.000	.887	273
Std. Predicted Value	-3.149	1.181	.000	1.000	273
Std. Residual	-4.523	1.693	.000	.993	273

a   Dependent Variable: greater value

Table 49. Multiple Regression DHS/FBI value factor residual statistics.

The "Value" factor showed the lowest explanatory power with an R Square of .106, or less than 11% of dependent variable variance. Only one variable, "The product would identify new information associated with pending matters or offered insights into information that could change the working premise in a program or initiative" had a t statistic above 2, and Predicted/Residual indicates a poor explanation of dependent variable variance

17.   Multiple Regression Analysis Summary

The analysis of how well each factor explains the variance of "Which type of intelligence product would be of greater value to you and your organization?" shows that "Ease of Use," the most significant factor with an R Square of 0.388, explains less than 40% of "greater value" variance. The TAM factors of Usefulness and Ease of Use demonstrated dramatically greater explanatory power than the DHS/FBI Quality and Value factors.

Factor	R Square
Usefulness	0.339
Ease of Use	0.388
Quality	0.141
Value	0.106

Table 50. Multiple Regression Usefulness/Ease of Use/Quality/Value R square.

The following diagram summarizes both explanatory R Square (R^2) and individual variable correlations (R) with greater value. In this diagram it is clear that the highest correlated DHS/FBI variable, "The product is reliable; i.e., sources well documented and reputable" equals the correlation of "usefulness," the lowest TAM variable at .339, supporting findings that overall technology acceptance modeling is a better predictor of "greater value" ratings than current DHS/FBI questions.
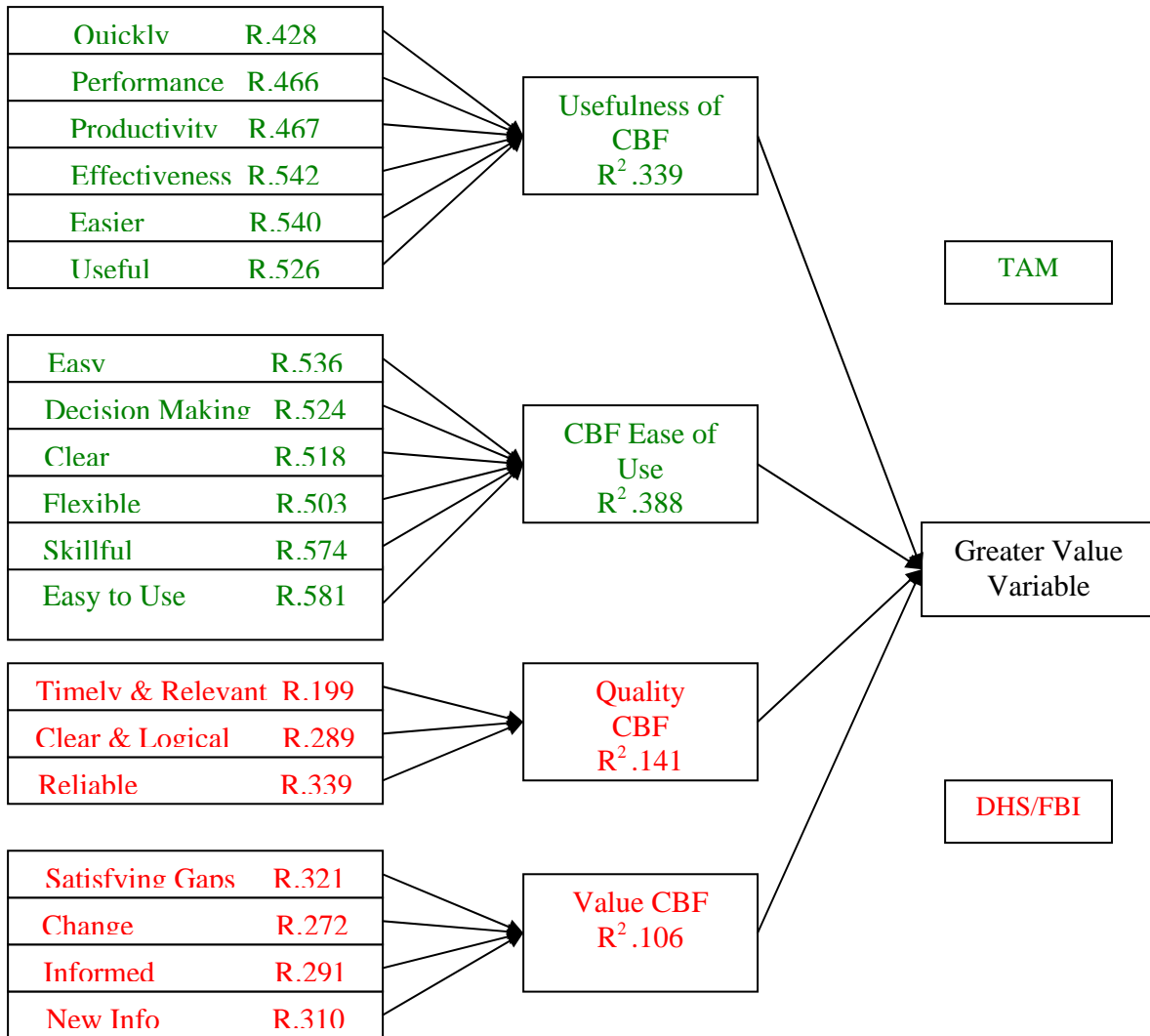
Figure 7.　Factor multiple regression and individual variable correlation coefficient relationships with "greater value" variable.

Conducting a multiple regression analysis with the individual t statistics that were over 2 for each factor yielded the largest R square at .416, indicating that this set of variables accounts for approximately 41% of "greater value" variance. "I found the intelligence product with hyperlinks easy to use" has the only substantial t statistic in this analysis; at 5.223, it still explains less dependent variable variance than unknown variables as indicated by the constant t statistic of 8.331

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.645(a)	.416	.403	.725

a   Predictors: (Constant), Hyperlinked New Information, Easy to Use, Hyperlinked Reliable, Effectiveness, Decision Making, Useful

Table 51. t statistic > 2 multiple regression model summary.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	99.629	6	16.605	31.559	.000(a)
	Residual	139.954	266	.526		
	Total	239.582	272			

a   Predictors: (Constant), Hyperlinked New Information, Easy to Use, Hyperlinked Reliable, Effectiveness, Decision Making, Useful
b   Dependent Variable: Greater Value

Table 52. t statistic > 2 multiple regression anova.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.213	.266		8.331	.000
	Useful	.076	.084	.086	.901	.369
	Effectiveness	.108	.071	.129	1.523	.129
	Decision Making	.073	.065	.086	1.117	.265
	Easy to Use	.369	.071	.387	5.223	.000
	Hyperlinked Reliable	.023	.063	.022	.370	.711
	Hyperlinked New Information	.027	.058	.028	.466	.642

a   Dependent Variable: Greater Value

Table 53. t statistic > 2 coefficients.

Reviewing "Easy to Use" alone shows an R Square of .355, that largest single explanatory variable; continued review of Regression/Residual shows a high Residual and the t statistic shows that this variable is almost equal to the constant.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.596(a)	.355	.353	.747

a   Predictors: (Constant), Easy to Use

Table 54. "Easy to Use" model summary.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	86.826	1	86.826	155.640	.000(a)
	Residual	157.876	283	.558		
	Total	244.702	284			

a   Predictors: (Constant), Easy to Use
b   Dependent Variable: Greater Value

Table 55. "Easy to Use" anova.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.750	.221		12.420	.000
	Easy to Use	.544	.044	.596	12.476	.000

a   Dependent Variable: Greater Value

Table 56. "Easy to Use" coefficients.

The multiple variable regression analysis of the variables in this research does not substantially explain responses to "Which type of intelligence product would be of greater value to you and your organization?" The multicollinearity of the results indicates that there may be variables outside of those examined in this research that better explain "greater value" variance. Further research to produce validated DHS/FBI customer satisfaction survey questions is warranted.

E.   CONCLUSIONS

Previous theory of reasoned action and technology acceptance model research has provided empirical evidence of the relationship between TAM ease of use and usefulness factors and actual system use. The demonstrated validity of Technology Acceptance Model questions regarding "Usefulness" and "Ease of Use", combined with overwhelming acceptance of the hyperlink technology in this research strongly predicts the acceptance of hyperlink technology to achieve CBF in unclassified intelligence across the broad range of homeland security disciplines and jurisdictions, extending the application of TAM to homeland security settings. In this research, homeland security professionals have demonstrated a clear intention to use hyperlinks to achieve CBF, strongly predicting actual use.

This predicted acceptance, paired with definitive feedback that the CBF product would be of greater value to organizations and the statistically significant improvements in DHS/FBI "Value" and "Quality" factors indicates that this concept has the potential to significantly improve the provision of unclassified intelligence to millions of homeland security professionals. CBF has been demonstrated to be one tool that can assist in meeting the demands and recommendations of the Markle Foundation, NTR, the 9/11 Commission, California Police Chiefs, DHS, Major City Police Chiefs, the CIA, the National Strategy for Homeland Security, the National Infrastructure Advisory Council, and the RAND Corporation cited in this research. CBF of unclassified intelligence for NTR contributes toward:

- "...news…in context." (9/11 Commission, cited on page 1 of this research)
- "…adequate context for homeland security providers to effectively utilize information…specific, tailored for each local entity, rapidly disseminated, and does not overburden recipients with vague or irrelevant information." (Markle Foundation, page 1)
- Improves law enforcement perception of intelligence quality and value. (California Police Chiefs, page 2)
- Is a "better method of sharing intelligence with state and local law enforcement agencies?" (DHS, page 2)
- Contributes toward providing "adequate…background…for 700,000 officers on the street." (Major City Police Chiefs, page 6)
- "…harness(es) the power of information technology…" (Markle Foundation, page 8)
- Provides "background and contextual information available at…policymaker's fingertips in a timely fashion..." (CIA, page11)
- Moves toward "full integration of (the) private sector into the intelligence cycle." (National Infrastructure Advisory Council, page 16)
- Encourages "effective partnership with state and local government and the private sector…" (National Strategy for Homeland Security, page 15)
- Is "tailored to meet requests from government departments, police, and private industry." (RAND, page 25)

91

Research has found that even well educated decision makers who understand the power of statistical testing often rely on analogies or metaphors to change deeply held beliefs, analogical reasoning combined with statistical analysis is more effective in changing those beliefs than statistics alone.[78]

In describing the power of context in terrorism decision making Professor Fathali Moghaddam contends that "..terrorism is explained by the power of context…" and provides the following analogy:

> …although John could choose to wear a bright red and yellow tie at his uncle's funeral in New York, he is very likely to choose a dark, somber tie instead; just as when John gets married, his future wife could choose to follow an alternative fashion trend and wear a black dress at their wedding, but she is far more likely to wear a white dress. In each case, the individual choices, John deciding to wear a dark tie at a funeral and his bride deciding to wear a white dress at their wedding, are made with some measure of free will and we can hold the individuals responsible for their choices, but we must also accept that their choices were heavily influenced by the social contexts (of a funeral and a wedding).[79]

Another contextual metaphor/urban legend about the FBI describes how J. Edgar Hoover demanded short memos with wide margins (in order to make notations), then received a memo with narrow margins. He promptly returned the memo with the notation, "Watch the borders." Subordinates promptly sent hundreds of agents to guard our national borders with Canada and Mexico!

Whether it is as mundane as dressing appropriately for a funeral, as expensive as sending hundreds of agents to the borders, or as critical as meeting the unclassified intelligence needs of millions of homeland security professionals, context matters. This research demonstrates that through CBF it is practical for the Intelligence Community to provide NTR the context required to make good decisions. Context that is consistent with the hermeneutic of the originating agency, is immediately available to decision makers, is "fused" to keywords, is available to over 87,000 jurisdictions, improves both quality and value of intelligence products and utilizes technology that is widely accepted.

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78 Nagy, Thomas, Theresa Jefferson and Jamal Altorkistani, *Selling Proven Methods for Improving the Usability of the Web: Experimental Evidence of the Benefits of Metaphors for Supporting Heuristic Evaluation*, http://home.gwu.edu/~nagy/Hfweb99.htm. (accessed October 18, 2006), 1.

79 Moghaddam, Fathali, *From the Terrorists' Point of View What They Experience and Why They Come to Destroy* (Westport, London: Praeger Security International, 2006), 11

IV. RECOMMENDATIONS

Research has outlined the critical impact of context on decision making, the importance of intelligence in homeland security, the need to involve millions of diverse homeland security professionals in asymmetric conflict, and the importance of technology in intelligence operations. Statistical analysis of the data indicates that hyperlinking unclassified intelligence products to open source contextual background (CBF) increases the perceived value and quality of that intelligence. Given a choice, homeland security professionals overwhelmingly preferred a CBF product, 268 to 16. Observed increases in perceived value and quality and clear preference for CBF in intelligence products make it clear that CBF positively impacts information sharing as demanded by national directives, initiatives and homeland security professionals. A critical evaluation of these findings utilizing technology acceptance model research indicates that not only does CBF improve unclassified intelligence products; the use of hyperlink technology to achieve CBF is widely accepted by NTR. Strong ease of use and usefulness findings across disciplines and jurisdictions predict that NTR will use this technology if employed in unclassified intelligence production and distribution. In order to improve information sharing to and between NTR as demanded, the following recommendations should be considered:

- Unclassified intelligence producers with the capability should immediately fuse vetted, accurate, open source contextual background to their intelligence products through the use of hyperlink technology.

Homeland security professionals have expressed acceptance of hyperlink technology in unclassified intelligence distribution. Intelligence producers such as NYPD have successfully integrated other technologies such as PowerPoint into unclassified intelligence production and advanced contextual background technology such as "Intelink," "K2," "Profiler," and "Autonomy" are successfully used in classified intelligence systems. This Department of Homeland Security sponsored research has demonstrated the acceptance of technology across a broad range of homeland security disciplines and the effectiveness of TAM in evaluating technology prior to widespread homeland security application.

- DHS should immediately sponsor research to determine what other technologies, if any, would be acceptable and improve perceived value and quality in unclassified intelligence products. More sophisticated contextual background systems such as K2, Profiler or Autonomy, community of interest search systems prioritizing results based on the search history of homeland security professionals in similar disciplines/jurisdictions/geographic areas, discipline specific products, products with discipline specific contextual background hyperlinks and PowerPoint are all technologies that are utilized by some jurisdictions or in applications outside unclassified intelligence that should be evaluated utilizing TAM for broad homeland security application. Technology that is found useful and easy to use should be considered for widespread application to improve information sharing.

This research has demonstrated that statistically significant improvements in DHS/FBI defined perceived value and quality factors along with strong TAM ease of use and usefulness factor ratings are possible with the addition of open source contextual background to unclassified intelligence. NTR found the simple addition of contextual background to unclassified intelligence improved that intelligence, contributing to improved information sharing as demanded by national directives, initiatives and homeland security professionals.

- The Department of Homeland Security should sponsor research into what other information, data or intelligence components would improve perceived quality and value of unclassified intelligence products for NTR. The preferred length of unclassified intelligence, the optimal amount of contextual background, the inclusion of sources for further information, citations, and the fusion of related online training to unclassified intelligence products are examples of changes to unclassified intelligence that should be evaluated utilizing TAM.

Interpol acts as a distributor of unclassified intelligence products produced by all member agencies to other member nations as opposed to being a producer of unclassified intelligence themselves and regional organizations in the U.S. have successfully distributed unclassified intelligence produced by different disciplines and jurisdictions (such as the California OES distribution of NYPD unclassified intelligence Power Points).

- The Department of Homeland Security should investigate the feasibility of distributing the unclassified intelligence products of allied agencies such as NYPD in distribution systems under their control à la Interpol.

The regional fusion center concept has demonstrated an ability to coordinate multiple disciplines in counter terrorism efforts.

- The Department of Homeland Security should continue to support the fusion center concept, encouraging the use of these centers to "tailor" intelligence to the unique needs of their multidisciplinary partners and geographic area of responsibility, consistent with study recommendations. Additionally, DHS should sponsor research into additional methods of geographic "tailoring" of unclassified intelligence.

Analysis of responses to DHS/FBI customer satisfaction survey questions produced results that reflect low correlation with "greater value;" there appears to be multicollinearity with multiple questions measuring the same phenomena along with some individual questions that do not substantially contribute to 'value" and "quality" factors with potential overlap between questions and factors, while previously validated TAM questions regarding "usefulness" and "ease of use" continued to demonstrate statistical validity.

- DHS/FBI should continue to collect data on customer satisfaction, partnering with the Naval Postgraduate School, Center for Homeland Defense and Security, providing ongoing data to the university and working collaboratively to analyze data, refine customer satisfaction (intelligence feedback) survey questions, and leverage the academic rigor and diverse knowledge, skills and abilities of staff and students to improve unclassified intelligence.

The Naval Postgraduate School, Center for Homeland Defense and Security has established itself as a successful educational model, bringing well educated, experienced and diverse professionals together in a collaborative, focused effort to improve homeland defense and security. Every discipline and jurisdiction represented in the cohorts has a demonstrated need for unclassified intelligence, and this research reflects a desire and ability to receive improved unclassified products. The need for quality unclassified intelligence is a significant commonality across the diverse disciplines, jurisdictions, and

positions of CHDS students; the vast majority of employees in every parent agency do not have security clearances, potentially making unclassified intelligence needs the most significant common denominator at CHDS. It is practical to leverage the knowledge, skills and abilities of CHDS students along with the sponsorship of DHS to improve unclassified intelligence.

- The Naval Postgraduate School, Center for Homeland Defense and Security should initiate a specific course on unclassified intelligence, utilizing the collective knowledge, skills and abilities of cohort members to obtain feedback and produce original research on network centric strategies to improve unclassified intelligence production and distribution for respective employing agencies.

As the Center for Homeland Defense and Security approaches the graduation of 200 Homeland Security Professionals, an opportunity to leverage this critical mass of field tested, academically qualified and geographically dispersed research partners exists for DHS. Each participant of CHDS, individually selected by DHS to represent jurisdictional, disciplinary, and geographic diversity within the practice of U.S. homeland security has demonstrated a significant commitment toward ongoing improvements in homeland security. More than a university based educational program, CHDS' unique access to these diverse professionals, contacts within multiple levels of government and developing university partnerships provides an opportunity to take the next step, combining these assets to further assist homeland security through increased applied academic research. Unclassified intelligence research provides an opportunity to significantly impact homeland security through the millions of NTR without security clearances who make the bulk of public contacts every day. While this "Wal-Mart" homeland security intelligence for everyone, everywhere, may lack the public appeal of top secret, need to know intelligence research, it addresses the needs of those who actually get the work done on a day to day basis, the patrol officers responsible for 80% of all arrests, firefighters, emergency medical technicians, and public health professionals responding daily to emergency calls for service, and the two million security professionals protecting 85% our nation's infrastructure.

- CHDS should immediately initiate an unclassified intelligence research grant in partnership with DHS, utilizing current and former students and faculty to integrate the recommendations contained in this research, identifying specific actions that support the national vision and demands of NTR.

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APPENDIX A. CONTEXTUAL BACKGROUND WEBSITES

http://newark.fbi.gov/dojpressrel/2006/nk030206usa.htm

http://www.tkb.org/Category.jsp?catID=6

http://www.mipt.org/pdf/Military-Guide-to-Terrorism-Twenty-First-Century.pdf

http://www.nal.usda.gov/awic/legislat/pl102346.htm

http://www.tkb.org/KeyLeader.jsp?memID=6114

http://www.tkb.org/Group.jsp?groupID=4234

http://www.fbi.gov/wanted/alert/sandiego_da.htm

http://www.tkb.org/Group.jsp?groupID=14

http://www.tkb.org/Group.jsp?groupID=41

http://www.fbi.gov/publications/terror/terror99.pdf

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APPENDIX B. COUNTS AND PERCENTAGES

			Jurisdiction						Total
			Other	Federal	State	County	Local	Private Sector	
Discipline	Other	Count	5	21	12	1	7	3	49
		% within discipline	10.2%	42.9%	24.5%	2.0%	14.3%	6.1%	100.0%
		% within jurisdiction	20.8%	37.5%	26.1%	2.6%	6.0%	100.0%	17.2%
		% of Total	1.8%	7.4%	4.2%	.4%	2.5%	1.1%	17.2%
	Public Health	Count	9	2	10	15	6	0	42
		% within discipline	21.4%	4.8%	23.8%	35.7%	14.3%	.0%	100.0%
		% within jurisdiction	37.5%	3.6%	21.7%	38.5%	5.1%	.0%	14.7%
		% of Total	3.2%	.7%	3.5%	5.3%	2.1%	.0%	14.7%
	Law Enforcement	Count	4	25	15	6	50	0	100
		% within discipline	4.0%	25.0%	15.0%	6.0%	50.0%	.0%	100.0%
		% within jurisdiction	16.7%	44.6%	32.6%	15.4%	42.7%	.0%	35.1%
		% of Total	1.4%	8.8%	5.3%	2.1%	17.5%	.0%	35.1%
	Fire	Count	2	0	1	7	41	0	51
		% within discipline	3.9%	.0%	2.0%	13.7%	80.4%	.0%	100.0%
		% within jurisdiction	8.3%	.0%	2.2%	17.9%	35.0%	.0%	17.9%
		% of Total	.7%	.0%	.4%	2.5%	14.4%	.0%	17.9%
	EMS	Count	0	0	0	1	6	0	7
		% within discipline	.0%	.0%	.0%	14.3%	85.7%	.0%	100.0%
		% within jurisdiction	.0%	.0%	.0%	2.6%	5.1%	.0%	2.5%
		% of Total	.0%	.0%	.0%	.4%	2.1%	.0%	2.5%
	Emergency Management	Count	4	8	8	9	7	0	36
		% within discipline	11.1%	22.2%	22.2%	25.0%	19.4%	.0%	100.0%
		% within jurisdiction	16.7%	14.3%	17.4%	23.1%	6.0%	.0%	12.6%
		% of Total	1.4%	2.8%	2.8%	3.2%	2.5%	.0%	12.6%
Total		Count	24	56	46	39	117	3	285
		% within discipline	8.4%	19.6%	16.1%	13.7%	41.1%	1.1%	100.0%
		% within jurisdiction	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	8.4%	19.6%	16.1%	13.7%	41.1%	1.1%	100.0%

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APPENDIX C. COMMENTS

#	Response
	30. Comments?
1	It was not clear early on that we were to compare the difference between info with, and without hyperlinks. That should be pointed out early.
2	I think you should add a sub-category to distinguish LE intel from other LE groups. The info in the bulletin isn't going to change anything most intel units are going to do because they should already have info, and it won't be considered timely. Now, non-intel might give another response.
3	The hyper linked document allows me to get more information in the areas I need.
4	Easy to understand and source, especially the hyperlinked version. Excellent example of quality intelligence dissemination at an unclassified level.
5	None
6	The format with hyperlinks is by far the better intelligence product.
7	Hyperlinks would not necessarily make the job faster because it could take longer for the investigator/employee/administrator to navigate the hyperlinks however the hyperlinks would be invaluable to those who would choose to use them.
8	Information with contact or source information is most relevant to ensure quality reporting/actions
9	Though the two documents said basically the same thing the second one was much easier to follow because I could look up what I didn't know and determine its worth to my organization.
10	In my current day-to-day job I wouldn't react to this type of info without further authority to do so but, if I was directed to react, the hyperlinks would be very useful since there wasn't enough information in the non-hyperlinked info for me to have a good grasp of the situation.
11	A hyperlink with the classified ID of the 11 and their MOs. a list of potential secondary sites. a capability to share with "significant private partners" a financial cost/risk column for cross reference and potential escalation/de-escalation analysis...(this allows for speculation to future

	hardening or MOs) nice job...this can be translated into other sub disciplines i.e., EMS public health and fire intel sharing you may want o speak to Jim Tindall 502 or I can send you my thoughts about creating a national medical intel center which could greatly benefit from this concept
12	Hyperlinks can also be used in a similar manner as explanatory footnotes in a research paper. Hyperlinks provided further explanation if the reviewer was not familiar with the subject, group, tactic, etc. referenced in the intelligence report.
13	Hyperlinks benefit in a military environment might be of limited value unless a cross-domain security solution exists. Much intel analysis is done on JWICS and SIPRNET. These systems do not have much interconnection with unclass networks.
14	I know it is just a sample but both missed important decision data. What region of the state (if available or say it is not). Descriptors for wanted subjects (photos if available) and the names of known group members.
15	I feel the hyper links add an added component to the Intel product which can be used at the customer needs.
16	The use of hyperlinks is a great idea. The initial bulletin is like an executive summary. The hyperlinks provide the opportunity for to gain more information if needed.
17	The hyperlinks provided access to the sources of information that were helpful in developing a complete picture with background.
18	The hyperlinks made the report more credible and interesting than the example without supporting documentation. The only suggestion I would make is to limit the graphics if possible to speed up download time. The last hyperlink (FBI 1999 Terrorism Report) took too long to download and this may cause some people to be frustrated.
19	The problem with hyperlinks is that they need to be kept active. I clicked on one which might not be active on purpose but then I would have to spend the time to research the link if it was information that I thought was necessary to read or maybe I felt well if the links aren't active then maybe the report isn't credible and I shouldn't bother with it.
20	The questionnaire asked for my discipline, and then it removed N/A as an answer. Most of the questions regarding intelligence and job effectiveness should have been answered with N/A from an emergency management perspective, but that answer was not available.
21	This looks like a great project! I'll be curious to see the final proposal

	and recommendations--especially considerations regarding classification/distribution, etc. This might not be part of the scope of the project, but it would be interesting to have a strategic planning group come up with a fact sheet with the information too--the links are great, but time constraints may delay reading important information.
22	Excellent product. I can't tell you how excited I would be to have a report such as to work off of. Please push this out as soon as you can. With limited time and resources these days, we need all the help we can get.
23	I use hyperlinks within documents and pdf's in most of my work. If the hyperlink does not exist in the PDF then I place hyperlinks within the document. Hyperlinks are very important in locating important supporting information. However, the hyperlinks MUST be link to the proper reference otherwise the link would be misleading.
24	The addition of hyperlinks was an improvement. The number of hyperlinks used, however was distracting. Not all of them worked, and took more time to look at than it did to read the article.
25	Public Health in this region is VERY rarely included in the intel loop. This is very different from my former location where the hyperlinked version would have been very useful.
26	When using a date in the summary, I would include the year to avoid confusion and allow the reader to quickly see the age of the data before deciding to view the ink.
27	The use of the hyperlinked information is a real time saver and is the obvious choice for the busy manager. My only concern is there may be a tendency for the manager to become lazy and rely only on the information presented without independent research on his/her part. The selection of the most correct and possibly diverse sources of hyperlinked information is critical to his/her success. From the Emergency Management perspective, the intelligence information will allow us to prepare for those events that may not be prevented even though we have some intelligence indicating they are a possibility in the near future. This is valuable information for the emergency manger assuming he/she is cleared to inform those that need the information to prepare.
28	Great idea - logical, not sure if current SOGs for Intel products already include this. Would be interesting to know. Some of what I get - FOUO stuff - does use hyperlinks.

29	What a great simple change.
30	Thank you...
31	The fire service doesn't get or use much in the way of advanced intelligence for resource allocation. I have strained my brain trying to find an intelligence "niche" for the FS, but it seems to be very small. For large departments (such as mine), if the advanced warning time is sufficient, we could use it for specialized training in the potential target facility, but developing this takes time. Adding a list of potential targets--or past target structure types--(e.g., testing laboratories, Federal buildings, etc.) for the group involved would be helpful...maybe as a hyperlink?
32	Great idea to be able to drill down to obtain additional information on hyperlinked items. How about a color coded system, to be able to discern between Names, Organizations, Attacks.
33	The second intelligence document with the hyperlinks provided much more information, documented credible sources and also allowed for the logical flow of the report. It was much better than the first report without hyperlinks. The portion of the intelligence product that was missing was the SO WHAT, an Assessment from the information/intelligence presented in the report and recommendation of actions, if any for the user of the product to take as a result of the intelligence report.
34	Hyperlinks are a great resource tool if you follow a few simple guidelines: 1. Hyperlinks must be accurately setup on a key word rather than an entire sentence. 2. Hyperlinks must point directly to the relevant source. (News Media and many websites move links around constantly so what is available during the report may not be available after distribution. 3. Keep the number of links down to the most important topics, and a brief overview of the source is still needed. (Follow an MLA format and there shouldn't be any problems.)
35	Hyperlinks better than no links. Kicker is that the hyperlinks are only additive if the information at the linked site is useful. It's either GI/GO or the 'other guy' has an informative, useful page. Using the examples given, predominantly a civilian law enforcement example, most of the information available is already provided. Would it truly be beneficial to know when Mr. San Diego was arrested for car theft when he was 15? I must say this is a good effort. My view is from DoD, and my personal view is that you kill bad guys, you don't arrest them. This survey is very domestic focused, and seems to reinforce the view that 9/11 et al, are law enforcement issues. This misses the point that such events are perpetrated by foreign, non-GENEVA signatories; they are hostile and

	lethal, and researching them like a criminal case will, in the long run, hurt the Nation. I don't know if there is a better answer within the US Homeland. Too many lawyers and too much bureaucracy.
36	I found the intelligence report with the hyperlinks provided me with more information in about the same amount of time as the report without the links. I did not see additional information that would have changed the priorities of my job. I think one of the values I could see from the hyperlinks is the ability to build a "living" intelligence report with additional information added as it becomes available, resulting in more timely and specific information.
37	This was a very useful exercise. I do believe that the way information is imparted to analysts allows them to collate more effectively; however, it is still the quality of the information, rather than just the way it is presented, which is most important to the EM aspects of intelligence operations. For instance, since EM is a response/planning discipline, any operational aspect has to be proactive; so, in order for additional value to be added, EOC's have to be activated, teams assembled, information disseminated...and yet, if the information is valueless or without credibility, it makes it all that much more difficult to convince the decision makers that a decision needs to be made. The hyperlinks were valuable, but I would venture, only from a research viewpoint. Second-flight incarnations of this platform could have small "notes" in place of the hyperlinks so that one doesn't even have to wait for the hyperlinks to activate; as the mouse is moved over the hyperlink, the notes immediately pop up. This would certainly make the information gathering and situational awareness process more timely.
38	Loved the use of hyperlinks - more efficient and time-saving for me!
39	Since I work in "health" we have more limited access to the background information that traditional LE has access to. Therefore, the ability to get additional information via a hyperlink provides good background information for review and assistance in considering the potential health impacts or need specific to changes in "medical/public health" intelligence gathering such as syndromic surveillance etc.
40	Hyper links embedded in documents is a great idea
41	The concern with hypertext links is the tracking of web links by the source. While useful, the hypertext links really would just help novices close the initial learning gap. For example, SHAC is well known for those of us who monitor the AE activities throughout the nation. Absent secure links I would be hesitant to visit some hypertext linked

	sites, especially the unknown websites.
	Special thanks for conducting research in this important area of HSHD.
42	I do not use the type of info reported on in product for my job, but I like the tool itself, and found it very easy to use
43	In my present position the two scenarios would not benefit me. I answered the questions based on me being employed in a position that could use this type of intelligence.
44	Those of us in Environmental Health who will participate in responding in the event of a disaster or Security incident need more information...of threats...not just notification of an event. I wonder about the security of the notification system...how will we prevent it from getting into the wrong hands?
45	You change your scoring halfway thru the last survey. You start with 6 meaning N/A, and then it switches to strongly agree. Some may miss this transition. It's obvious you're testing the use and viability of hyperlinks, not sure you need to ask so many questions to get there. Good survey and good luck.
46	The resources are easier to use with hyperlinks and are more likely to be used. A good start in general. Need more useable information in the field. Hyperlinks would be a good idea on all levels, classified or non-classified.
47	The hyperlinked report allowed for greater authentication, increased my view as to credibility and allowed me to "see" the supporting detail and concerns for myself.
48	one of the links could not be found on the Justice Department server
49	The hyperlink allowed me to access information that interested me, and quickly get the "meat" of the intel report vs. having to weed through a lot of "stuff". The hyperlink provided an opportunity to deeper into the topics that interested me, thus allowing me to focus my reading time more efficiently.
50	Great concept - keep it up.
51	This is a great foundation...I would like to see this with an analytical product that identifies trends and threats - and to be completely selfish that effect the fire service, hazmat, EMS and Urban Search and Rescue.
52	The hyperlinked example was familiar to me primarily because of my

	previous use of "wikipedia" - it was easy to use and provided more information. I thought the second example was definitely a better product, easier to use, and provided opportunity for greater knowledge.
53	I like the versatility of the hyperlink, if I didn't know the subject well I could click the hyperlink and get the background
54	excellent use of a common tool
55	Great idea - potentially very useful. My only concern was info overload - while it should improve productivity I would have a tendency to delve too deeply into the supporting information and might lose sight of the focus of the intel product.
56	I found the Hyper Links to be an all around better format.
57	Hyper links offer the reader the opportunity to locate more detailed information or additional sources of information. Great idea!
58	Hyperlinks are useful, but could be more information than needed. We operate in an information overload and do not need excess, non useful information. Good Intel does not necessarily mean more Intel but it needs to be relative to the product I'm using.
59	There is an obvious difference in the quality and depth of the two products. Unfortunately, I have seen way too many of the former and not enough of the latter during the period of my career when I worked in the intelligence arena. The second certainly provides clarification and ease of use...obviously; if I were still in the field I would prefer the second product.
60	It would be more useful if he links were established as credible reliable sources. We get lulled into using hyperlinks not checking the veracity of the poster for the hyperlink... assuming the author did that vetting for us. Being intelligence professional skepticism runs deep so I would want to verify not only the initial report but any additional information referenced. I would caution hyperlinks are not a panacea unless standards are established to ensure the entire product (including the links) are verified and trusted as being accurate.
61	Although intel doesn't always have judgments or conclusions, it is certainly more useful that anecdotal information. I thought the hyperlinks help to develop a better understanding of the information that was presented in the sample.
62	Until I participated in your survey, the Animal Rights activists were just marginally part of my perception. You changed my mind with the hyperlinks since I learned that some of these groups target the nuclear

	sector. Very useful for a manager who likes to get relevant info quickly, with enough depth to be certain that the information is credible, but without a lot of keystrokes.
63	Hyperlinked product is excellent and easy to use.
64	More information is available through the hyperlinks, ease of access, ability to quickly gather historical data etc.
65	Good-luck with your research. I feel strongly that using hyperlinks will enhance not only the effectiveness but will also limit "unnecessary" time researching documents. i.e.,: statutes, agreements, codes etc.
66	The system is as good as the intel
67	Hyper-links are much more beneficial to time saving and a quick up to snuff.
68	One of the hyperlinks did not have the correct information when clicked on. I believe it was "Kevin Kjonaas." Putting too many hyperlinks could cause distraction however, so I believe there is a tradeoff between providing too much information and timely information.
69	If this survey results in hyper-links being included in future intelligence briefings, this will have been worth the time spent on the survey and would greatly enhance local gov't's ability to plan and respond more effectively.
70	Hyperlinks will definitely improve knowledge in areas that small agencies don't normally have the time to spend on, and add credibility to the information being reported.
71	None
72	It was like night and day!
73	The type of hyperlink is more important than just having the links available. Some hyperlinks are not valuable or add value to the info block. Hyperlinks that help with additional insight, pros/cons, or can help link one event with another is most helpful.
74	Hyperlinks are the way to go. The take full advantage of today's technology.
75	Good concept, people will seek out more information when it is easily accessible. Perhaps the difference between a more though out, researched product versus a mediocre survey of information.
76	As a policy maker I don't see much intelligence; however I do see the

	benefit of having intelligence with additional background information for a non-intel/law enforcement policy maker can grasp a better picture of the situation.
77	Nice concept that allows for greater collaboration
78	Would hyperlinked data go through the Internet? If so, how is the transmission of classified data to be secured?
79	The use of hyperlinked intelligence (AND OTHER REPORTS) is a great idea. Hopefully, this will be the way of the future.
80	It is clearly better with hyperlinks. It cuts down on investigative background time.
81	PHOTOS AND PRIMARY UNIT OR POINT OF CONTACT IS ALWAYS NEEDED HOWEVER LACKING IN QUITE A FEW INTEL REPORTS. AS MUCH AS POSSIBLE ONE LEAD UNIT OR AGENCY SHOULD BE IDENTIFIED AS MORE AND MORE WE ARE STEPPING ON EACH OTHERS TOES AND OVERLAPPING.
82	Great idea!
83	Second sample give more knowledge.
84	Hyperlinks to large files take some time to download, which breaks the continuity of information flow. If the hyperlinks were to edited summaries of Intel info, it would facilitate more timely downloads and reading.
85	1. Being in Emergency Management, intelligence are not a regular feature of my job - but they should be. 2. Hyperlinks are only good if current, and as a report ages, links are likely to become inactive. Also, links to a specific item within a web page are more efficient than a generic link to a web page - in that you then have to spend time searching for the info you want.
86	Intelligence analysts are required to sift through voluminous amounts of reports and data to develop an assessment. Any tools -- such as the use of hyperlinks -- that can be incorporated to facilitate speed of analysis should be utilized.
87	As an emergency manager my needs for intelligence generally center around knowing the where's and when's of a potential incident --- the sources, methods, leads, and general law enforcement and intel background information is of little value to me.
88	At first I was not sure just what you were asking. I may not be on a front

	line organization, however, I would find this information important and needed.
89	The hyperlinked product is superior. It effectively provides the means to answer questions thus eliminating subsequent searching.
90	none
91	The product didn't contain recommendations or conclusions so it was difficult to rate the product on those criteria.
92	Great idea, and while hyperlinking will require more front-loading of information, will significantly increase the usefulness of the product and will significantly reduce additional research required by the analyst.
93	Your agree....and disagree were at the wrong ends....1 should represent Agree.
94	none
95	None
96	Good Luck!!!
97	Very illustrative survey - well done!
98	Hyperlinks allow for shorter executive summaries as well as more details if needed. It also allows for different levels of security. I.e., Exe Sum at the FOUO and Hyperlinks at a more secure level.
99	Great concept. Look forward to reading the thesis when it is published.
100	Honestly, I'd consider all my responses to be outliers and should not be considered in your thesis. Reasoning: I don't use intelligence products in my day to day activities. We create emerging technology solutions to support homeland security. The entities I support would most likely be valuable in guiding and developing algorithms that could be utilized to automatically scan and mine large volumes of material to help develop the intelligence product that you would communicate to users. I would have considered prescreening questions at the beginning of the survey to include/exclude survey responders based upon their need/use/interaction with intelligence products. The survey appears that it would be very useful for those it pertains to. Best of luck!
101	None
102	Be careful of hyperlinking too much...sometimes that is a distracter and may drive the reader down the wrong "rabbit hole" as they start following links away from the main story/product

103	The "hyperlinks" were great! The initial direction (first paragraph) of the scenario was so vague, however, that it made it difficult to comment on effectiveness. From a Statewide perspective and having 566 municipalities the intelligence dealing with a single meeting within the next 2 months anywhere in the State is hard to follow-up on. If the point of the survey was to test intelligence with and without the hyperlink - it is clear that the hyperlink product is very worthwhile and informative.
104	I am a health physicist and basically only care about radiation - the hyperlinks would allow me to rapidly determine if there was a history or "connection" to radiation. If a suspect had a degree in physics and we had a report of stolen radioactive material - we might start pulling the tread. The hyperlinks would give any body a better chance of seeing a connection to their field. Downside - it could take a lot of time to surf through all the info.
105	Hyperlinks are a valuable tool in being able to reinforce conclusions or facts; however, it is important that the links be to credible, known sources. I would take some stock into a source that was linked to in a government briefing more than I would by searching Google for information on a subject. However, it would be important that the briefings only contain credible sources that the governmental agency issuing the briefing has validated the information that the sources contain.
106	Superb use of intel...the more information provided, the greater opportunity for decisions to be made that affect local operations.
107	Good tool for an alert with the hyperlinks allowing more time for research into possible threats in local area
108	Hyperlinks are great for providing background information - but it is not hyperlinks that are the problem - the problem is the quality of intelligence and the availability of actionable information. For example, in this example the information is not actionable for my organization.
109	Hyperlinks provided quick, useful information when needed.

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APPENDIX D. DHS/FBI QUALITY/VALUE CUSTOMER SATISFACTION SURVEY

Product Title _____ Product Date _____
Customer _____
Intelligence Function/Investigative Program_____

Quality

1	2	3	4	5	NA	This product was delivered within established deadlines.
1	2	3	4	5	NA	The product was timely and relevant to your mission, programs, priorities or initiatives.
1	2	3	4	5		The product was clear and logical in the presentation of information with supported judgments and conclusions.
1	2	3	4	5		The product is reliable i.e., sources well documented and reputable.

Value

1	2	3	4	5	NA	The product contributed to satisfying intelligence gaps or predicating cases or intelligence operations, especially in previously unknown areas.
1	2	3	4	5	NA	The product resulted in change in investigative or intelligence priorities and/or a shift from unaddressed to addressed work, or vice versa.
1	2	3	4	5	NA	The product resulted in more informed decisions concerning investigative or intelligence initiatives and/or resource allocation.
1	2	3	4	5	NA	The product identified new information associated with pending matters or offered insights into information that could change the working premise in a program or initiative.

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APPENDIX E. ZOOMERANG SURVEY

**Naval Postgraduate School
Center for Homeland Defense and Security
Intelligence Research**

Thanks for helping me move this research forward. I am close to sending this survey out to a wide range of homeland security professionals (including you!) and asking them to respond and send the link to other homeland security professionals. Please let me know what you think I should change on the survey before I send it out. I am particularly interested in the sample intel product and links chosen. The first set of questions should look familiar as they are from FBI/DHS intel customer satisfaction surveys. The remainder of the questions are adapted from a validated technology acceptance survey. Please feel free to give me feedback by email, phone or in person! I appreciate your help, having Subject Matter Experts such as yourself review this is important. TX! Chuck
Below is how the survey will come to participants:

Thank you for participating in our survey. Your feedback is important.

Please note—you may receive this survey from multiple sources. Please only take the survey once.

Start Survey!

Naval Postgraduate School
Center for Homeland Defense and Security
Intelligence Research

Homeland Security

Questions marked with an asterisk (*) are required.

2   *My employment is primarily:

Private Sector
County
Federal
Municipal
State
Other, Please Specify

Next

Naval Postgraduate School
Center for Homeland Defense and Security
Intelligence Research

Homeland Security

Questions marked with an asterisk (*) are required.

1   *My discipline is best described as:

Emergency Management
Fire
Public Health
EMS
Law Enforcement
Other, Please Specify

Next

Naval Postgraduate School
Center for Homeland Defense and Security
Intelligence Research

Homeland
Security

Questions marked with an asterisk (*) are required.

NPS NAVAL POSTGRADUATE SCHOOL

CENTER FOR HOMELAND DEFENSE AND SECURITY
THE NATION'S HOMELAND SECURITY EDUCATOR

Please read this condensed sample unclassified Intelligence Product. Seven questions on the quality and value of this product will be asked after you have completed reading this sample. You may come back to this page via the back button at any time.

SAMPLE - FOR RESEARCH ONLY

The State Police have received information that environmental terrorists may have scheduled a long term strategic planning session in the state within the next 60 days. Please contact your local law enforcement or the FBI Joint Terrorism Task Force with any information you may receive concerning this meeting or contacts with known or suspected environmental terrorist group members.

In March, a closely watched trial in New Jersey ended with the convictions of Stop Huntingdon Animal Cruelty (SHAC) and six of its members for using the group's Web site to incite violence against people associated with Huntingdon Life Sciences, a firm that tests drugs on animals. Victims, who had personal information about them and their families posted on the Web site, testified that they had received death threats, seen their windows smashed and cars overturned, and had their children threatened, among other things. The six, who now face up to seven years in prison, were the first ever charged under the Animal Enterprise Protection Act, a law that was amended in 2002 to include "animal enterprise terrorism."

One of those convicted was Kevin Kjonaas, who was president of SHAC until his indictment in the case in 2004. Jurors heard

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evidence that Kjonaas had made a call to Daniel Andreas San Diego just hours after San Diego allegedly bombed two California businesses in August 2003, although Kjonaas was not charged with any crimes in connection with the bombings. The FBI has offered a $250,000 reward for the arrest of San Diego, who has tattoos of burning buildings on his chest.

On Jan. 19, another major case was brought against 11 people accused of terrorist attacks in Oregon, Wyoming, Washington, California and Colorado on behalf of the Animal Liberation Front (ALF) and the Earth Liberation Front (ELF) In a 65-count indictment returned by a grand jury in Oregon, the 11, who called themselves "The Family," are accused of 17 attacks, including sabotaging a high-tension wire and destroying a Vail, Colo., ski resort, in a $12 million arson.

3   *The Product was timely and relevant to your mission, programs, priorities, or initiatives.

Strongly Disagree				Strongly Agree	N/A
1	2	3	4	5	6

4   *The product was clear and logical in the presentation of information with supported judgements and conclusions.

Strongly Disagree				Strongly Agree	N/A
1	2	3	4	5	6

5   *The product is reliable; i.e. sources well documented and reputable.

Strongly Disagree				Strongly Agree	N/A
1	2	3	4	5	6

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6 *The product would contribute to satisfying intelligence gaps or predicating cases or intelligence operations, especially previously unknown areas.

Strongly Disagree				Strongly Agree	N/A
1	2	3	4	5	6

7 *The product would result in a change in investigative or intelligence priorities and/or a shift from unaddressed to addressed work, or vice versa.

Strongly Disagree				Strongly Agree	N/A
1	2	3	4	5	6

8 *The product would result in more informed decisions concerning investigative or intelligence initiatives and/or resource allocation.

Strongly Disagree				Strongly Agree	N/A
1	2	3	4	5	6

9 *The product would identify new information associated with pending matters or offered insights into information that could change the working premise in a program or initiative.

Strongly Disagree				Strongly Agree	N/A
1	2	3	4	5	6

Naval Postgraduate School
Center for Homeland Defense and Security
Intelligence Research

Homeland Security

Questions marked with an asterisk (*) are required.

NPS NAVAL POSTGRADUATE SCHOOL — CENTER FOR HOMELAND DEFENSE AND SECURITY — THE NATION'S HOMELAND SECURITY EDUCATOR

Please read this condensed sample unclassified Intelligence Product. Nineteen questions on the quality and value of this product will be asked after you have completed reading this sample. You may come back to this page via the back button at any time.

SAMPLE - FOR RESEARCH ONLY

The State Police have received information that environmental terrorists may have scheduled a long term strategic planning session in the state within the next 60 days. Please contact your local law enforcement or the FBI Joint Terrorism Task Force with any information you may receive concerning this meeting or contacts with known or suspected environmental terrorist group members.

In March, a closely watched trial in New Jersey ended with the convictions of Stop Huntingdon Animal Cruelty (SHAC) (page 80 of 280) and six of its members for using the group's Web site to incite violence against people associated with Huntingdon Life Sciences, a firm that tests drugs on animals. Victims, who had personal information about them and their families posted on the Web site, testified that they had received death threats, seen their windows smashed and cars overturned, and had their children threatened, among other things. The six, who now face up to seven years in prison, were the first ever charged under the Animal Enterprise Protection Act, a law that was amended in 2002 to include "animal enterprise terrorism."

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120

One of those convicted was Kevin Kjonaas , who was president of SHAC until his indictment in the case in 2004. Jurors heard evidence that Kjonaas had made a call to Daniel Andreas San Diego just hours after San Diego allegedly bombed two California businesses in August 2003, although Kjonaas was not charged with any crimes in connection with the bombings. The FBI has offered a $250,000 reward for the arrest of San Diego, who has tattoos of burning buildings on his chest.

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10 *The product was timely and relevant to your mission, programs, priorities, or initiatives.

Strongly Disagree				Strongly Agree	N/A
1	2	3	4	5	6

11 *The product was clear and logical in the presentation of information with supported judgements and conclusions.

Strongly Disagree				Strongly Agree	N/A
1	2	3	4	5	6

12 *The product is reliable; i.e. sources well documented and reputable.

Strongly Disagree				Strongly Agree	N/A
1	2	3	4	5	6

13 *The product would contribute to satisfying intelligence gaps or predicating cases or intelligence operations, especially previously unknown areas.

Strongly Disagree				Strongly Agree	N/A
1	2	3	4	5	6

14 *The product would result in a change in investigative or intelligence priorities and/or a shift from unaddressed to addressed work, or vice versa.

Strongly Disagree				Strongly Agree	N/A
1	2	3	4	5	6

15 *The product would result in more informed decisions concerning investigative or intelligence initiatives and/or resource allocation.

Strongly Disagree				Strongly Agree	N/A
1	2	3	4	5	6

16 *The product would identify new information associated with pending matters or offered insights into information that could change the working premise in a program or initiative

Strongly Disagree				Strongly Agree	N/A
1	2	3	4	5	6

17 *Using the intelligence product with hyperlinks in my job would enable me
to accomplish tasks more quickly.

Strongly
Disagree   Strongly Agree

1   2   3   4   5   6

18 *Using intelligence products with hyperlinks would improve my job
performance.

Strongly
Disagree   Strongly Agree

1   2   3   4   5   6

19 *Using intelligence products with hyperlinks would increase my
productivity.

Strongly
Disagree   Strongly Agree

1   2   3   4   5   6

20 *Using intelligence products with hyperlinks would enhance my
effectiveness on the job.

Strongly
Disagree   Strongly Agree

1   2   3   4   5   6

21 *Using intelligence products with hyperlinks would make it easier to do
my job.

Strongly
Disagree   Strongly Agree

1   2   3   4   5   6

22 *I would find intelligence products with hyperlinks useful in my job.

Strongly
Disagree   Strongly Agree

1   2   3   4   5   6

23 *Learning to utilize intelligence products with hyperlinks would be easy for
me.

Strongly
Disagree   Strongly Agree

1   2   3   4   5   6

24 *I would find it easy to use intelligence hyperlinks to obtain decision
making information.

Strongly
Disagree   Strongly Agee

1   2   3   4   5   6

25 *My interaction with the intelligence product with hyperlinks was clear and understandable.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

26 *I found the intelligence hyperlinks to be flexible to interact with.

Strongly Disagree					Strongly Agee
1	2	3	4	5	6

27 *It would be easy for me to become skillful at using intelligence products with hyperlinks.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

28 *I found the intelligence product with hyperlinks easy to use.

Strongly Disagree					Strongly Agree
1	2	3	4	5	6

Next
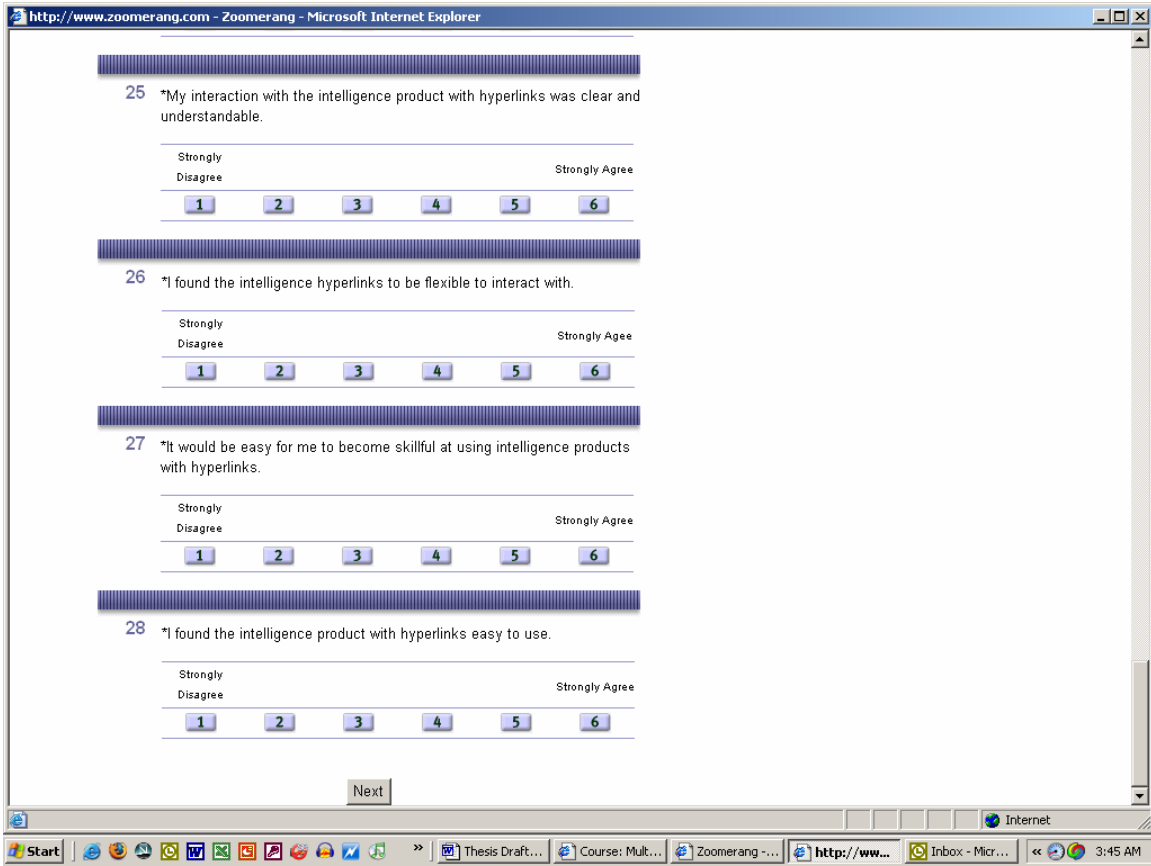
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LIST OF REFERENCES

Alavi, Maryam *Assessment of the Concept of Decision Support Systems as Viewed by Senior-Level Executives.* Minnesota: MIS Quarterly (Vol. No. 4): 1-9, 1982. http://www.jstor.org.libproxy.nps.navy.mil/view/02767783/ap010024/01a00040/7?searchUrl=http%3a//www.jstor.org/search/BasicResults%3fhp%3d25%26si%3d1%26Query%3dperceived%2bvalue%2bin%2bdecision%2bmaking&frame=noframe&currentResult=02767783%2bap010024%2b01a00040%2b0%2cFF03&userID=837833b1@nps.navy.mil/01cc99333cb9210c8aec98ea&dpi=3&config=jstor, (accessed 7/21/2006).

Alpert, Geoffrey. *Police Pursuit and the Use of Force. A Final Report to the National Institute of Justice*. Washington, D.C.: National Criminal Justice Reference Service, 1997. http://www.ncjrs.gov/pdffiles/164831.pdf (accessed 05/25/06).

Andrew, Christopher. "Intelligence Analysis Needs to Look Backwards before Looking Forward." *History and Policy.org*. http://www.historyandpolicy.org/archive/pol-paper-print-23.html (accessed 5/19/2006).

Ashcroft, John. *Address to the American Enterprise Institute*. Washington, D.C.: Thompson Gale, 2003.

Association of State and Territorial Health Professionals. *State Public Health Worker Employee Shortage Report, A Civil Service Recruitment and Retention Crisis.* Washington, D.C.: ASTHO.org., 2004, http://www.astho.org/pubs/Worker-Shortage (accessed 8/6/2006).

Autonomy Corporation plc. *Industry Analyst Research Highlights Autonomy's Technology Over Legacy Rules-Based Only Approach.* Sunnyvale, California: Autonomy, 2006. http://www.autonomy.com/content/News/Releases/2002/1104.html (accessed 8/6/2006).

Baird, Zoë. *Protecting America's Freedom in the Information Age*. New York, New York: The Markle Foundation, 2002. http://knxup2.ad.nps.navy.mil/homesec/docs/nonprof/nps05-070903-01.pdf (accessed 02/02/2006).

———. *Creating a Trusted Network for Homeland Security*. New York, New York: The Markle Foundation, 2002. http://www.markle.org/downloadable_assets/nstf_report2_part_two.pdf#search=%22adequate%20contextual%20background%20homeland%20security%22 (accessed 09/24/2006).

Bellavita, Christopher, and Ellen M. Gordon. "Changing Homeland Security: Teaching the Core." *Homeland Security Affairs II*. no. 1 (April 2006): 1-19, http://www.hsaj.org/?article=2.1.1 (accessed 5/25/2006).

Brézillon, Patrick, and Jean-Charles Pomerol. *Proceduralization of the Contextual Knowledge for Decision Making*. Abstract. October 28, 2002: 1-13. http://www-poleia.lip6.fr/~brezil/Pages2/Publications/Luxembourg.pdf (accessed 02/02/2006).

Bush, George W. *National Strategy for Homeland Security*. Washington, D.C.: Office of Homeland Security, 2002.

———. *Homeland Security Presidential Directive/HSPD-5*. Washington, D.C.: Office of Homeland Security, 2002.

———. *The National Security Strategy of the United States of America.* Washington, D.C.: Office of Homeland Security, 2002.

Chalk, Peter, Seth Jones and William Rosenau. *Understanding the Enemy: Lessons for Effective Threat Assessments.* Santa Monica, CA: RAND, 2004.

Chambers, John, and Erie Nye. Letter to George Bush from the National Infrastructure Advisory Council, Edited by George W. Bush. Washington, D.C.: The National Infrastructure Advisory Council, 2004. http://www.dhs.gov/interweb/assetlibrary/NIAC_EEIS_Letter_0804.pdf (accessed 1/24/2006).

Chen, Zhengxin. *Computational Intelligence for Decision Support*. CRC Press International Series on Computational Intelligence. Edited by L. C. Jain. Boca Raton, FL: CRC Press, 2000. http://www.engnetbase.com.libproxy.nps.navy.mil/books/482/1799_PDF_TOC.pdf (accessed 05/26/06).

Choucri, Nazli, and others. *Improving National and Homeland Security through Context Knowledge Representation and Reasoning Technologies.* Working Paper, Composite Information Systems Laboratory. Cambridge, MA: Sloan School of Management, Massachusetts Institute of Technology, 2006. http://web.mit.edu/smadnick/www/wp/2006-03.pdf (accessed 8/3/2006).

Clay, Paul and others. *Factors Affecting the Loyal use of Knowledge Management Systems.* Bloomington, Indiana: Indiana University, 2005. http://csdl2.computer.org/comp/proceedings/hicss/2005/2268/08/22680251c.pdf (accessed 10/11/2006).

Clinton, William J. *Executive Order to Strengthen the Federal Government-University Research Partnership.* Washington, D.C.: Office of Science and Technology Policy, 2000. http://www.ostp.gov/html/011001_3.html (accessed 2/12/2006)

Davis, F. D., R. Bagozzi, and P. R. Warshaw. "User Acceptance of Computer Technology." *Management Science* 35. no. 8 (1989): 982-1003. http://links.jstor.org/sici?sici=0025-1909(198908)35%3A8%3C982%3AUAOCTA%3E2.0.CO%3B2-1 (accessed 5/26/2006).

Davis, G.G., and others. *The Facts about COPS: A Performance Overview of the Community Oriented Policing Services Program*. Washington, D.C.: Heritage Foundation, 2000. http://new.heritage.org/Research/Crime/loader.cfm?url=/commonspot/security/getfile.cfm&PageID=12171 (accessed 7/28/2006).

Decker, Raymond J.. *Efforts to Improve Information Sharing Need to be Strengthened*. Washington, D.C.: General Accounting Office, 2003. http://72.14.207.104/search?q=cache:tP1ByR2Wcv8J:www.gao.gov/new.items/d03760.pdf+gao+police+survey+meet+police+intelligence&hl=en&gl=us&ct=clnk&cd=1 (accessed 02/18/2006).

Department of the Army. *Police Intelligence Operations*. Washington, D.C.: Headquarters, Department of the Army, 2006. http://www.fas.org/irp/doddir/army/fm3-19-50.pdf (accessed 8/4/2006).

———. *COUNTERINSURGENCY* (Draft Not for Implementation). Washington, D.C.: Headquarters, Department of the Army, 2006, http://www.fas.org/irp/doddir/army/fm3-24fd.pdf (accessed 8/12/2006).

Department of Homeland Security and Federal Bureau of Investigation. *Intelligence Bulletin No. 203, (U/LES) Miami Arrests Disrupt Homegrown Terrorist Plot*. Washington, D.C.: DHS/FBI, 2006.

Director of National Intelligence. "Report on the Progress of the Director of National Intelligence in Implementing the "Intelligence Reform and Terrorism Prevention Act of 2004." Washington, D.C.: Office of the Director of National Intelligence, 2006. http://www.fas.org/irp/dni/implement.pdf (accessed 9/9/2006).

Fishbein, M., and I. Ajzen. "Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research." MA: Addison-Wesley Reading, 1975.

Flowers, Robert. "Strategies to Build a Trusted and Collaborative Information Sharing System for State-Level Homeland Security." M.A. Thesis, Naval Postgraduate School, 2004. http://knxas1.hsdl.org/homesec/docs/theses/04Jun_Flowers.pdf.

Gonzales, Alberto. *Engaging the Private Sector to Promote Homeland Security: Law Enforcement-Private Security Partnerships*. Washington, DC: Bureau of Justice Assistance Clearinghouse, 2005.

———. "Prepared Remarks for Attorney General Alberto R. Gonzales
at the Council on Foreign Relations." U.S. Department of Justice. December 1, 2005.
http://www.usdoj.gov/ag/speeches/2005/ag_speech_051201.html (accessed
12/4/2005).

Government Accountability Office. *Information Sharing the Federal Government Needs
to Establish Policies and Processes for Sharing Terrorism-Related and Sensitive but
Unclassified Information.* United States Government Accountability Office Report
to Congressional Requestors 6, no. 385. March 17, 2006: 1-77,
http://www.gao.gov/new.items/d06385.pdf (accessed 5/25/2006).

Hillen, John. "Know Nothings: U.S. Intelligence Failures Stem from Too Much
Information, Not enough Understanding." *National Review*. August 3, 1998, 1-6.
http://www.findarticles.com/p/articles/mi_m1282/is_n14_v50/ai_21102283
(accessed 02/21/2006).

International Association of Chiefs of Police. *Consolidating Police Services: An IACP
Planning Approach Executive Brief Bureau of Justice Assistance*. Washington, D.C.:
U.S. Department of Justice, 2003.

Interpol. *Interpol Notices.* Lyon, France: Interpol, 2006.
http://www.interpol.int/Public/ICPO/FactSheets/GI02.pdf (accessed 7/27/2006).

———. *Stolen Works of Art.* Lyon, France: Interpol, 2006.
http://www.interpol.int/Public/WorkOfArt/Default.asp (accessed 8/8/2006).

Jane's Online. *Jane's Intelligence and Insight You Can Trust.* Alexandria, Virginia:
Jane's Information Group, 2005. http://www.janes.com/company/about/, (accessed
10/11/2006).

Jenkins, Brian. "Interview with the National Tactical Officers Association." February,
2005.
http://72.14.235.104/search?q=cache:hunQI3PbSD8J:www.newyorker.com/fact/cont
ent/articles/050725fa_fact2+National+Tactical+Officers+Association+NYPD+Brian
+Jenkins&hl=en&gl=us&ct=clnk&cd=10 (accessed 10/10/2006).

National Commission on Terrorist Attacks upon the United States. *The 911 Commission
Report. Final Report of the National Commission on Terrorist Attacks upon the
United States*. United States Government Printing Office, 2004.

Kelly, Patrick. *Intelligence Support to Homeland Security: Supporting the Supporting
Effort.* Carlisle Barracks, Pennsylvania: U.S. Army War College, 2002.
https://www.hsdl.org/homesec/docs/dtic/ADA404363.pdf (accessed 5/21/2006).

Kerr, Richard, Thomas Wolfe, Rebecca Donegan, and Aris Pappas. *Intelligence and Analysis on Iraq: Issues for the Intelligence Community.* 2005, http://www.gwu.edu/~nsarchiv/news/20051013/kerr_report.pdf (accessed 1/24/2006).

Lin, Chienting, and others. *Examining User Acceptance of COPLINK Technologies by Law Enforcement Officers: A Survey Study.* Arizona: University of Arizona, 2002. http://citeseer.ist.psu.edu/cache/papers/cs2/365/http:zSzzSzwww.digitalgovernment.orgzSzlibraryzSzlibraryzSzdgo2002zSz..zSzpdfzSzlin.pdf/examining-user-acceptance-of.pdf, (accessed 8/20/2006).

Martin, Fredrick. *Top Secret Intranet: How U.S. Intelligence Built Intelink - the Worlds Largest Most Secure Network.* Upper Saddle River, NJ: Prentice Hall, 1999.

Memorial Institute for the Prevention of Terrorism. "MIPT, About MIPT Terrorism Knowledge Base." Oklahoma City, Oklahoma: National Memorial Institute for the Prevention of Terrorism, 2006. http://www.tkb.org/AboutTKB.jsp, (accessed 9/3/2006).

Miller, Patrick. *How Can We Improve Information Sharing Among Local Law Enforcement Agencies.* Monterey, California; Naval Postgraduate School, 2005, https://www.hsdl.org/homesec/docs/theses/05Sep_Miller.pdf, (accessed 10/10/2006).

Moghaddam, Fathali. *From the Terrorists' Point of View What They Experience and Why They Come to Destroy.* Westport, London; Praeger Security International, 2006.

Mueller, Robert. *FBI Strategic Plan 2004-2009.* Quantico, Virginia: Federal Bureau of Investigation, 2004. http://www.fbi.gov/publications/strategicplan/strategicplanfull.pdf (accessed 5/20/2006).

Nagy, Thomas, Theresa Jefferson and Jamal Altorkistani. *Selling Proven Methods for Improving the Usability of the Web: Experimental Evidence of the Benefits of Metaphors for Supporting Heuristic Evaluation.* 1999. http://home.gwu.edu/~nagy/Hfweb99.htm, (accessed 10/182006).

National Capital Regional Information Center. National Capital Regional Information Center Information Bulletin 1B-06-04. Washington, D.C: National Capital Regional Informational Center, 2006.

North Atlantic Treaty Organization. "Tactical Decision Aids and Situational Awareness." Amsterdam, The Netherlands: North American Treaty Organization, November 2, 2001. http://knxup2.ad.nps.navy.mil/homesec/docs/dtic/ADA400661.pdf (accessed 01/27/2006).

Northern California Regional Terrorism Threat Assessment Center. *Northern California Regional Terrorism Threat Assessment Center, A Local, State and Federal Partnership with the San Francisco FBI, FIG, and JTTF.* Northern California Joint Terrorism Task Force, 2005. http://ncrttac.org/index.cfm/CFID/19020328/CFTOKEN/64043242/MenuItemID/73/MenuGroup/Home.htm (accessed 11/18/2005).

O'Conner, Tom and Baker, Paula. *Police in Society Syllabus.* Raleigh, North Carolina: Wesleyan College, 2005. http://faculty.ncwc.edu/toconnor/205/205lect08.htm, (accessed 10/182006).

Palmieri, Lisa M. *Information vs. Intelligence: What Police Executives Need to Know.* Massachusetts: International Association of Law Enforcement Intelligence Analysts, Inc. 2005: http://www.ialeia.org/pubs/InformationvsIntelligence.pdf (accessed 01/28/2006).

Parfomak, Paul W. *Guarding America: Security Guards and U.S. Critical Infrastructure Protection.* The Library of Congress: Congressional Research Service, 2004. (accessed 01/21/2006).

Pirolli, Peter. *Assisting People to Become Independent Learners in the Analysis of Intelligence.* Palo Alto, California: Office of Naval Research, 2006. http://www.fas.org/irp/eprint/pirolli.pdf (accessed 9/2/2006).

Porteus, Liza. *Weapons of Mass Destruction Handbook.* Fox News, 2006. http://www.foxnews.com/story/0,2933,76887,00.html?sPage=fnc.specialsections/homelandsecurity, (accessed 9/10/2006).

Potter, Dennis. The First Three Minutes: Law Enforcement's Role in Crisis Management. Fairfax, Virginia: Commission on Accreditation for Law Enforcement Agencies, 2006. http://64.233.187.104/search?q=cache:0Y6G1XiUjgkJ:www.calea.org/newweb/newsletter/No82/first3minutes.htm+dennis+potter+the+first+three+minutes&hl=en&gl=us&ct=clnk&cd=1 (accessed 10/7/2006).

Ravitch, Frank. *Struggling with Text and Context: A Hermeneutic Approach to Interpreting and Realizing Law School Missions.* Queens, NY: St. Johns Law Review, 2000. http://findarticles.com/p/articles/mi_qa3735/is_200007/ai_n8886993/pg_5 (accessed 10/10/2006).

Senate Select Committee on Intelligence. *Hearing of the Senate Select Committee on Intelligence on the Nomination of General Michael Hayden to be the Director of Central Intelligence.* United States Senate. 109, 17, April 15, 2005, http://www.fas.org/irp/congress/2006_hr/051806transcript.pdf (accessed 9/5/2006).

Southern Poverty Law Center. *Eco-Radicalism, Feds Across Country to Smash 'Eco-Terrorists'*. Montgomery, Alabama: Southern Poverty Law Center, 2005. http://www.splcenter.org/intel/intelreport/article.jsp?aid=608, (accessed 9/22/2006).

Steele, Robert. *The New Craft of Intelligence Personal, Public and Political.* Oakton, Virginia: OSS International Press, 2002. https://www.hsdl.org/homesec/docs/zroom/cm/ns4156/steele2002ch15.pdf (accessed 5/17/2006).

Stillman, Rear Adm. Patrick. "The Integrated Deepwater System: Exciting Opportunities for Coast Guard-Navy Cooperation." U.S.H.S., U.S.C.G., Integrated Deepwater System, March 17, 2005.

Stanford University. *Hermeneutics*. (Palo Alto, CA: Stanford Encyclopedia of Philosophy, 2005. http://plato.stanford.edu/entries/hermeneutics/ (accessed 10/2006).

Stat Pac. *Survey Sampling Methods*. Bloomington, Minnesota: Stat Pac, 2005. http://www.statpac.com/surveys/sampling.htm (accessed 9/10/2006).

Teitelbaum, Lorne. *The Impact of the Information Revolution on Policymakers' use of Intelligence Analysis*. Santa Monica, California: RAND, 2005. http://www.rand.org/pubs/rgs_dissertations/2005/RAND_RGSD186.pdf (accessed 5/24/2006).

Tully, Edward. *Terrorism the Impact on State and Local Law Enforcement*. Alexandria, VA: International Association of Chiefs of Police, 2002. http://www.neiassociates.org/mccintelligencereport.pdf. (accessed 2/9/2007).

United States Department of Homeland Security. *Homeland Security Advisory System*. U.S. Department of Homeland Security, 2005. http://www.dhs.gov/dhspublic/display?theme=29 (accessed 11/22/2005).

United States Department of Justice. "Fact Sheet: Department of Justice Anti-Terrorism Efforts since 11 September 2001, Release No. 202-514-2007," Washington, D.C.: U.S. Department of Justice, 2006. http://www.justice.gov (accessed 10/6/2006).

United States Department of Justice. "Federal Law Enforcement Statistics." Washington, D.C.: Bureau of Justice Statistics. http://www.ojp.usdoj.gov/bjs/fedle.htm (accessed 12/2/2005).

———. "State and Local Law Enforcement Statistics." Washington, D.C.: Bureau of Justice Statistics. http://www.ojp.usdoj.gov/bjs/sandlle.htm (accessed 12/1/2005).

United States Senate. "Department of Homeland Security Appropriations Act, 2007, HR 5441, Senate Debate on the Department of Homeland Security Appropriations Act 2004." United States Senate. https://www.chds.us/courses/file.php/112/moddata/forum/742/13414/DHS_Approp_Bill.txt, (accessed August 22, 2006).

United States State Department. *Did a Plane Hit the Pentagon?*. Washington, D.C.: State Department, 2005. http://usinfo.state.gov/media/Archive/2005/Jun/28-581634.html (accessed 9/15/2006).

Wal-Mart. *The Wal-Mart Story*. Bentonville, Arkansas: Rockfish Interactive, 2006. http://www.walmartfacts.com/content/default.aspx?id=1, (accessed 10/18/2006).

Westerfield, H. Bradford. *Strategic Intelligence: Windows into a Secret World*. edited by Loch Johnson, James Wirtz. Los Angeles, California: Roxbury Publishing Company, 2004. http://www.hsdl.org/homesec/docs/zroom/cm/ns4156/westerfield2004p198.pdf (accessed 02/02/2006).

Witt, James. *America at Risk*. Washington, D.C.: FEMA, 2000. http://knxup2.ad.nps.navy.mil/homesec/docs/health/nps15-051004-22.pdf (accessed 11/22, 2005)

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