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Adapting information operations to a changing world: Future options for the United States government

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Future Options for the United States Government

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USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

Abstract

In 1998, the Department of Defense in the United States released the first of a series of seminal policies on Information Operations (IO). Entitled *Joint Publication 3-13*, this instruction laid out for the first time, in an unclassified format, how the American military forces could utilise this particular element of power. As a relative newly defined activity, this publication proposed to revolutionise the manner in which warfare, diplomacy, business and a number of other areas are conducted. However, this radical transformation in the United States government with regard to IO has not occurred over the last decade and a significant gap exists in the capability of the federal bureaucracy to support operations in this arena. While strategic policy and doctrine have been developed and promulgated, in most cases only by the Department of Defense, the actual conduct of IO activities and campaigns across the United States, are normally performed at a much more tactical level. This delta between theory and reality exists because the interagency organisations are often unwilling or unable to make the transformational changes that are needed to best utilise information as an element of power. In this research, the author has developed definitions and models that articulate not only why this delta exists, but also specific strategies for utilising IO in a manner by the United States federal organisations that best optimises the inherent capabilities of this element of power. Specific recommendations are noted below, and will be laid out in greater detail throughout the paper:

- Develop an Academic Theoretical Construct for IO
- Understand that Different Approaches and Processes are Needed to Support IO
- Establish an International IO Standards Effort
- Meeting the IO Training Needs

This research is more than just a reflection on the shifting nature of power. As the title of the research suggests, information is changing in this new era, and how a nation or federal agency understands that fact, will greatly increase its ability to manipulate power to their advantage. Thus the overall goal of this paper will be to bring together not only these disparate themes, but also the different threads of information to show the tremendous changes that are occurring today, in order to better demonstrate this revolution in power. In this research, key sources were be drawn on, all of which are relatively recent in origin, to show how the gaps in

theory with respect to information, are perhaps one reason for the delta that currently exists in IO. Likewise, the author also attempted to review the broad spectrum of published works on IO, that have become available over the last decade, in order to give a complete assessment of what needs to be done with respect to the federal bureaucracy in order to continue moving forward. Feedback from the project participants and the literature review also indicated that there were a number of areas that were considered deficient when one reviews and analyses these issues within the United States government with regards to the conduct IO. In addition, it can also be noticed that a series of common themes from both the literature review and research interviews that centre on a few key points – namely the desire for strategic goals, the use of standards, as well as integrated communication systems, tools, IO metrics and the need for common training efforts to conduct IO activities across all federal agencies.

There was also a dichotomy between the stated desires of the interviewees, prominent IO authors and theorists as far as the IO capabilities of the United States, the published theory on this subject and that actual tactical reality. This gap is the crux of this research and can be seen most clearly in the Conceptual Models, which emphasised a desire by many of the thesis participants for a more comprehensive series of strategic IO efforts by the federal government, to truly maximise the power inherent in IO. However at the same time, there was also a realisation among many of the participants of this project that these actions would not happen on a timely basis, and that instead, a more realistic approach was probably more feasible, one that involved a broader set of criteria which might be more useful to try to solve these tough problems using a bottom up methodology instead. Likewise, a key concept that also arose in the conduct of this research is the understanding that the road to success with regard to IO involved an actual limiting of the stated objectives, a 'boxing-in' if you will of IO policy, into a more 'useable' set of concepts, definitions, theories and capabilities, that are attainable and feasible, with the resources available to the federal bureaucracy. This 'walking away' from the early IO rhetoric to a more pragmatic approach is probably one of the most important items to take away from this thesis, in that many of the participants have come to understand that in order to succeed in IO, that they need to lessen their goals. This change can be seen most clearly in the Department of Defense where the original IO policy issued in 1998 was deemed too radical and ambitious, and has since been modified as the federal agencies in the United States understand better what is truly needed to best utilise this new capability.

Declaration

I certify that this thesis does not, to the best of my knowledge and belief:

i. Incorporate without acknowledgment any material previously submitted for a degree or diploma in any institution of higher education;

ii. Contain any material previously published or written by another person except where due reference is made in the text; or

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Date: 10 November 2008

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This is to Beth – the love of my life, and my three sons – Thomas, Christopher and Ethan, all of who have supported me throughout this long and arduous process. I want to thank you for allowing me the opportunity to undertake this adventure. Finally, I would also like to thank my parents, for always encouraging me to be the best and to never give up.

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List of Acronyms

AFIWC	Air Force Information Warfare Centre
AIA	Air Intelligence Agency
ASD/C3I	Assistant Secretary of Defense/Command, Control, Computers and Intelligence
ASD/SOLIC	Assistant Secretary of Defense/Special Operations and Low-Intensity Conflict
BIOSG	Bilateral Information Operations Steering Group
BIOWG	Bilateral Information Operations Working Group
CAAP	Critical Asset Assurance Program
CERT	Computer Emergency Response Team
CIA	Central Intelligence Agency
CIAO	Critical Infrastructure Assurance Office
CC	Commander in Chief
CIP	Critical Infrastructure Protection
CIPIS	Critical Infrastructure Protection Integration Staff
CIPWG	CIP Working Group
CITAC	Computer Investigation & Infrastructure Threat Centre
CJCS	Chairman of the Joint Chiefs of Staff
CNA	Computer Network Attack
CND	Computer Network Defense
CNO	Computer Network Operations
DASD S&IO	Deputy Assistant Secretary of Defense for Security and Information Operations
DCI	Director of Central Intelligence
DIA	Defense Intelligence Agency
DIAP	Defense-Wide Information Assurance Program
DIAPSG	Defense Information Assurance Program Steering Group
DII	Defense Information Infrastructure
DIRNSA	Director National Security Agency
DISA	Defense Information Systems Agency
DISN	Defense Information Systems Network
DIOC	Defense Information Operations Council
DoC	Department of Commerce
DoD	Department of Defense
DoE	Department of Energy
DoJ	Department of Justice
DoS	Department of State
FBI	Federal Bureau of Investigation
FEDCIRC	Federal Computer Incident Response Capability
FEMA	Federal Emergency Management Agency
FIRST	Forum of Incident Response & Security Teams
GNOSC	Global Network Operations Security Centre
GSA	General Services Administration
I & IA	Infrastructure and Information Assurance
IA	Information Assurance
IC	Intelligence Community

ICC	Information Coordination Centre
IMINT	Imagery Intelligence
INFOCON	Information Condition
IO	Information Operations
IO S&I	Information Operations Strategy and Integration
IOSS	Interagency OPSEC Support Staff
IOTC	Information Operations Technology Centre
IPI	International Public Information
IPIIWG	International Public Information Interagency Working Group
IPTF	Infrastructure Protection Task Force
IW	Information Warfare
IWSC	Information Warfare Support Centre
JCIWS	Joint Worldwide Intelligence Communications System
JCMA	Joint COMSEC Monitoring Activity
JCS	Joint Chiefs of Staff
JCSE	Joint Communications Support Element
JDISS	Joint Deployable Intelligence Support System
JFSC	Joint Forces Staff College
JIOC	Joint Information Operations Centre
JIVA	Joint Intelligence Virtual Architecture
JPO-STC	Joint Program Office – Special Technology Counter Measures
JTF-CNO	Joint Task Force – Computer Network Operations
JSC	Joint Spectrum Centre
JWAC	Joint Warfare Analysis Centre
LIWA	Land Information Warfare Activity
MASINT	Measurement & Signature Intelligence
MPP	Mission Program Plan
NCA	National Command Authorities (after 2001 understood to mean only the Secretary of Defense)
NCS	National Communications Systems
NCTF-CND	Navy Component Task Force – Computer Network Defense
NIAP	National Information Assurance Partnership
NIPC	National Infrastructure Protection Centre
NIST	National Institute of Standards and Technology
NIWA	Naval Information Warfare Activity
NSA	National Security Agency
NSC	National Security Council
NSIRC	National Security Incident Response Centre
NSOC/IPC	National Security Operations Centre/Information Protect Cell
NSPD	National Security Presidential Directive
NSTAC	National Security Telecommunications Advisory Committee
NSTC	National Science and Technology Council
NSTISSC	National Security Telecommunications and Information Systems Security Council
NTIA	National Telecommunications & Information Assurance
ONDCP	Office of National Drug Control Policy
OMB	Office of Management and Budget

OSD	Office of the Secretary of Defense
OSINT	Open Source Intelligence
OSTP	Office of Science & Technology Policy
PCAST	President's Committee of Advisors on Science & Technology Policy
PCCIP	Presidential Commission on Critical Infrastructure Protection
PDD	Presidential Directive Decision
PD&PA	Public Diplomacy and Public Affairs
PIR	Priority Intelligence Requirement
PM	Perception Management
POG	Psychological Operations Group
POTUS	President of the United States
PSN	Public Switched Network
RPP	Regional Program Plan
TWI	Transnational Warfare Interests
UCP	Unified Command Plan
USD(P)	Under Secretary of Defense for Policy
USG	United States Government

Chapter One - Introduction: Understanding the Problem

"The Next World War: Computers are the Weapons, and the Front Line is Everywhere..."

(Adams, 1998, p.3)

The contemporary world is transforming itself into the Information Age, which has been called 'an era of networks' (Copeland, 2000; Arquilla and Ronfeldt, 1996, 2001). Loudly proclaimed by many as a revolutionary process throughout the world, it is interesting however to compare and contrast the differences between rhetoric and reality, especially in the employment of Information Operations (IO). A relative newly defined activity, this transformation of traditional uses of power promises to revolutionise the manner in which warfare, diplomacy, business and a number of other areas are conducted. However the gap between proposed capability and actual conduct of operations in the United States government is wide and while strategic doctrine and guidance may exist to best utilise the power of information, in fact, actual information campaigns are almost always conducted at a tactical level. In this thesis, the author develops definitions and models that articulate not only why this delta exists, but also specific strategies for utilising IO in a manner that best optimises the inherent capabilities of this element of power. These ideas were taken from 100 background and research interviews conducted over a five-year period from practising mid-level officials of the interagency organisations in the United States that are involved in conducting information campaigns. It is hoped that these conclusions developed in this project may be useful for future IO planners, as well as senior level decision makers. This research was based on the following hypothesis, and will step through a rigorous theoretical methodology to develop a coherent set of findings as part of this thesis.

Hypothesis: In the United States government, a significant gap exists in regards to the conduct of Information Operations. Strategic policy and doctrine have been promulgated, but in most cases, the actual IO activities and campaigns, are normally performed at a more tactical level. The delta between theory and reality exists because the federal bureaucracy is unwilling or unable to make the transformational changes that are needed to best utilise information as an element of power.

1.1 Information Operations

Information as an element of power is and has always been somewhat of a nebulous term, but in this new era it possesses a capability that is now considered crucial to the success of

American national security. However the ability to best utilise this element of power to support the requirements of United States government is still unknown. This is because IO crosses so many boundaries within the interagency process, that it is often very difficult to quantify exactly what constitutes an information campaign. One reason for this is that you now have other organisations within the federal bureaucracy such as the State Department, which while they have traditionally concentrated on diplomatic efforts to support American interests abroad, are now instead being asked instead to facilitate strategic IO activities around the world. Not only is this kind of tasking abnormal for these different cabinet agencies, but it also belies their normal chains of communication and day-to-day procedures. So more often than not, the most recent attempts to conduct strategic high-level IO activities in the United States are instead aborted for a more tactical set of options that are normally conducted by the Department of Defense as part of their standard set of operations. A good example of these dichotomies with the capability of IO is seen in three military activities conducted recently by American forces over the last decade. Whether it was Kosovo, Afghanistan or Iraq, the primary focus of these campaigns from the viewpoint of Washington, DC was on the military victory. In none of these operations, did IO play the transformational role that its advocates have predicted, and while a number of capabilities and related activities have been utilised, often with good success, at best these efforts are still almost all concentrated at the localised or tactical level. Nowhere has the strategic revolution in warfare advocated by informational power enthusiasts in the mid 1990's materialise as predicted and desired.

This gap between the early theoretical desires for IO and the actual reality of operations conducted today is the focus of this thesis. For the contemporary world now is now witness to wholesale onslaughts of manipulated images, where nations, groups and individuals attempt to manage the messages that are received. Information campaigns have been advocated and theorised to be conducted in a very similar manner, whether merchandise like a soft drink is being sold or a threat to national security like weapons of mass destruction. This is the whole idea to which the acolytes of informational power advocate with respect to IO, namely that the mind of the consumer or the public needs to be influenced, to get them to believe in a product or cause. It is all the same in this new era these early IO enthusiasts contend, where the nature of power has radically changed, with perception management and computer network operations figuring prominently as new informational capabilities. To date, interviewees involved in this

research project have not witnessed this revolution in the use of information, which will transform the structure of power around the world. In particular, with respect to the specific American situation, the changes envisioned within the United States federal government, particularly with respect to influence campaigns, have thus far have not yet occurred as well, and in many cases foreign policy operations are still conducted using traditional military and diplomatic methods.

1.2 Emerging IO Theory

However not withstanding these issues, the transformational ideas inherent in IO are crucial and must become a reliable capability of the American arsenal, because as the events of 11 September 2001 indicate, military, political or economic power are often simply ineffective in dealing with these new kinds of threats to the national security of the United States. The aforementioned terrorist attacks were a blow to the American public and government images that affected the perceptions of many people in this country. The fear produced by the terrorist acts can only be defeated by using a comprehensive plan, in which information is a key element. In this new era, all factors of power must be utilised, for as some academics argue, in the future it will be 'networks that will be fighting networks' (Arquilla and Ronfeldt, 1999). Good examples of this abound in Operation *Enduring Freedom* and Operation *Iraqi Freedom*, where networks in the form of information campaigns fought networks made up of perceptions, and the side that will ultimately emerge from this epic conflict as the victor, is the one that can best shape and influence the minds of not only their adversary, but their allies as well (Advisory Group on Public Diplomacy for the Arab and Muslim World, 2003).

Unfortunately the shift from the industrial age to the information environment may not mean that the United States will forever remain the dominant player in the political arena. Arquilla and Ronfeldt also write that nation-states are losing power to hybrid structures within this interconnected architecture, where access and connectivity, including bandwidth will be the two key pillars of any new organization. They posit that truth and guarded openness are the recommended approaches to be used in both the private and government sectors to conduct business, and in their opinion, time zones will be more important than borders. It will be an age of small groups, using networks to conduct 'swarming' attacks that will force changes in policy (Arquilla and Ronfeldt, 1997a). Key features include:

- Wide open communication links where speed is everything
- Little to no censorship, the individual controls his own information flow
- Truth and quality will surface, but not initially
- Weakening nation-states and strengthening networks (Ibid, 1997b)

The changes that are mentioned in their book *Noopolitik* are truly revolutionary and describe a profound shift in the nature of power. Unfortunately, this transformation has not been translated from a strategic concept to tactical actions (Kuusisto, 2004). Thus, the intent of this research is to fill that void, to describe why the early strategic theory on IO, do not match the current tactical reality.

1.3 The Day-to-Day Reality of how IO is conducted by the United States

So while much of the early policy concerning IO stated the need for a more strategic and centralised execution philosophy of executing a top-down process by the American government, the day-to-day reality of operations is much different (CJCS MOP 30, 1993; DoDD S3600.1, 1996; DoD JCS JP 3-13, 1998). This early concentration on the development of high level IO strategy perhaps mirrors the philosophy of doctrine from an earlier era of the nation's history. During the Cold War, the United States and its allies and the Communist bloc were in a psychological confrontation between two competing and essentially incompatible ideologies emanating from Washington and Moscow (Taylor, 2002). The Soviet Union and the Warsaw Pact were easily the most recognizable of the 'threats' to the free world, but other nations such as China, North Korea, Iran, Iraq, Syria and Libya were also part of the equation. This bipolar Cold War era was an arena of 'realist' conflicts, such as Vietnam, Korea, etc with states acting as the prime actors and anarchy a central theme. This was a 'war' in the real sense, in that nations were mobilised and armed forces were always at the ready to commit at a moment's notice if needed. A sense of urgency existed, so high-level doctrine and strategy were developed to meet these perceived needs; yet ultimately it was not the military or diplomatic efforts that succeeded in ending this effort, but instead the economic and to some extent the informational might of America that eventually prevailed. Today the former Soviet Union is a shadow of its past existence, with a population below the United States, and it has had difficulty deploying a number of its forces in Kosovo because of equipment failures, (Clarke, 2000).

In this post Cold War era, when some of the greatest threats known to mankind such as a major surprise nuclear attack appear to many academics and politicians aslessened in intensity,

the fact that the United States is still under attack from a number of different enemies, including the Al Qaeda terrorist network seems curious. Once again, there are many reasons, but primarily it is because the perception of enemies has changed. Why is this? Perhaps it is because the lack of equilibrium familiar during the Cold War, unrest in the Middle East, conflict in Southwest Asia are all significant factors in this new era. While there are still 'rogue states' (in United States terms) that can occupy the politicians and give credence to budget appropriations, other groups including extremist religious factions are freer to operate and to carry out attacks on the United States, in this post-bipolar period. Most of these Non-Government Organizations (NGO) or terrorist groups are no longer operating underneath the umbrella of a superpower, and therefore have much more autonomy than ever before. Over the past 15 years, and especially in the last decade, there has been an explosion of attacks on the United States, some of which information has played a key role. While a number of these incidents were conducted by lone individuals, others were the work of activists, foreign military units, terrorists and even nation states. Each of these attacks hi-light the vulnerability of America and its population to these new types of warfare, where information and the integration of the government play a key role. For as mentioned previously, there is a tremendous gap between the theoretical potential of IO and its day-to-day implementation, and there are many times where the United States federal government is having tremendous difficulty in defending itself from informational attacks in this new environment.

However, that is not to say, that the interagency organisations of the American bureaucracy have not recognised this delta and in their defence, many of these officials are attempting to better utilise information as an element of power. Evidence of this can be seen in the creation of the Department of Homeland Security, reorganisation changes at the State Department, and the attempts to train an IO educated workforce in the form of authorised academic centres of excellence such Naval Post Graduate School, Idaho State University, New Mexico State University, Capital City College and other academic venues. Likewise, by managing information and using planning tools to synchronise, synergise, and de-conflict influence-based activities in an overall plan to affect the adversary, officials in Washington, DC have also attempted to enable the horizontal integration of these activities across the whole interagency and coalition environment. A good example of this was the efforts to coordinate the perception management messages of the United States, the North Atlantic Treaty Organisation

and the United Kingdom during the Kosovo conflict in 1999 (ibid). While not perfect, the collaboration was an improvement over previous efforts.

As part of this research, it was noted that this shift from one era to another is not without precedent. The United States became a world leader in the industrial age because it could mobilise the collective might of its population through mass production, automation, economic incentives and geographic location. To understand this revolutionary change in the role of information, it must be appreciated that this era of industrial might is in decline, and that the information revolution is now upon us (Toffler, 1970). However the ability for the United States government to conduct influence campaigns around the world is under a tremendous amount of stress and uncertainty. In previous generations, information practitioners could count on a monolithic enemy (the Soviet Union), and a somewhat static communications technology throughout the Cold War (broadcast network television and radio). This situation unfortunately created an erroneous belief that the information that was broadcast to the known adversary could be controlled; however, this is no longer possible in today's environment. The Internet and other emerging communication networks (wireless, peer-to-peer, etc) have forever destroyed the power formerly resident only in the government, and that asymmetry now gives the power of information to all. This is a good example of the power of bottom-up execution and control. Alvin Toffler and Heidi Toffler alluded to this capability in their book *War and Anti-War*, where they talk about the de-massification of the media or the ability to compartmentalise influence campaigns (Toffler and Toffler, 1993). In addition, while federal bureaucrats could at one time count on the fact that they owned or could somewhat control the dissemination outlets for information; this is also increasingly no longer the case. The use of web sites, blogs, streaming video, portals and other 'alternative' news sources have ended the government's monopoly of information control, where this new technology is available. Incredible advances in communications are changing the information environment, and in many cases, this new technology is supporting the traditional cultural and economic issues of third world communities, which have given these populations a much greater power in this new dynamic.

1.4 The Relevance of this Research

It is this concept of power and control of information that is the core of this research. In this thesis, most of the analysis focuses on the key areas of perception management and

computer network operations within IO. The former is often referred to by different names depending on which branch of the United States government that you are referencing to include psychological operations (Defense), public diplomacy (State), strategic communications (National Security Council) or influence operations (White House). In essence all of these terms can be considered analogous and in this text, the author has elected to use these terms somewhat interchangeably. Likewise computer network operations can also go by different names such as information assurance, computer security, cyber warfare, computer network attack, etc. Once again, the author has elected to use these terms interchangeably as well. In addition, while there are many other capabilities of IO, such as deception, electronic warfare and the like that could also be examined, this research was narrowed to the two key areas mentioned earlier, namely the perception management and computer network operations portion of IO. This is because it is the attempts to conduct these specific kinds of influence campaigns, where the United States government has had the most difficulties recently, and where the delta is the greatest between theory and reality, so it is hoped that recommendations from this research will offer the most potential for change within the federal bureaucracy.

In this research, the use of a modified Soft Systems Methodology approach and active interviews was deemed most appropriate, as part of a qualitative procedure. In order to get the trust from this large group of government and academic participants, the author interviewed some of them repeatedly over a multi-year period, in what has been labelled as developing a sustained and intensive experience (Creswell, 2003). Out of the original 100 background interviews, with 63 different people, a total of 40 key participants were ultimately selected, for a total 54 separate interviews, to best help the author understand not only the nuances of the problem, but also so that he could obtain the most current and accurate information about the current and future state of IO within the federal government. It is therefore the intent of this thesis to answer not only the research questions listed below, but also to gather and collect the opinions of these key individuals as to what should occur in the future by the federal bureaucracy to better utilise this element of power. Thus each of the survey questions used was designed to flesh out a different perspective of the United States government, to specifically examine the policy, personnel and organisational modifications that are ongoing within these agencies that were built in the industrial (second wave) era, as they attempt to transform themselves. So, not only are the research interviews seeking to answer the 'what is' question from these surveys and

subsequent analysis, but the author was also attempting to answer the 'what should be' question as well.

1.5   Research Questions

1. Can a viable model be developed for medium to long-term strategic United States federal government information campaigns?
2. Within a viable model, what are the essential components?
3. Within a viable model, what is the most appropriate organisational structure?

From these research questions and the subsequent data developed from the participants, the author was able to develop a comprehensive theoretical model of not only how IO is currently integrated into the United States government, but also how it could be integrated in the future to include changes to personnel, policy and organisations. However as mentioned previously, these efforts are not enough and there still exists a wide gap between rhetoric and reality with respect to IO. Therefore this research will examine the theory, policy, doctrine and strategy for IO in the United States government as well, to determine how information as an element of power is actually utilised by the federal bureaucracy to conduct operations in the Information Age. This is achieved by using a systemic, long-term interpretive approach to collecting data from high profile individuals, who as mentioned earlier have various roles within the IO and associated government influence and/or perception management and computer network operations communities. To do this, the author has explored the differences between current IO theory and operations, which was done by utilising the Soft System Methodology process to define core concepts such as the environment, worldviews, clients, actors, owners and the transformation process through an active interview process. From this methodology, the author then developed two primary conceptual models, with 12 secondary views that attempt to explain the gap or delta of IO performance by the American government. From this qualitative data, a number of key themes were developed by the author, which were later verified with the original interviewees and validated by third-party independent IO academics. It is believed that this methodology enabled the doctoral process to be completed with sufficient academic rigour to ensure the accuracy and completeness required.

1.6 Summary

This paper is an attempt to summarise all of the disparate efforts by the various components of the federal bureaucracy that have attempted to utilise different portions or capabilities of IO, with an emphasis on perception management and computer network operations. In addition, this research has also attempted to investigate how the key agencies of the United States government can use the inherent power of information, to better conduct influence or strategic communication campaigns in the future. Likewise, this research also tried to develop a series of models to better describe a strategy to best utilise IO by the United States. It is hoped that the outcome of this research will provide a process that can be used to transform these organisations, in a manner that will better allow them to understand and use the power of information to meet the threats in the future. For the bottom line is the question as to whether the federal bureaucracy can conduct an effective information campaign in this changing environment, while assuring the security of their networks and information systems in this new architecture? To do this, the United States may need to change its collective interagency structure that has evolved over the last 200 years, into a more networked organisation that can master the issues in the information age. This is a crucial issue, as it can be questioned if America will remain a dominant player during this new era, where industrial capacity is not nearly as important to a nation as its interconnectivity of information nodes? Thus to conclude this introductory section, it is the goal of this thesis to answer these questions while producing a model that better describes and develops a strategy for how the United States can best conduct information operations in this new era.

Chapter Two - A Review of Information Operations in the United States

"In an age when terrorists move information at the speed of an email, money at the speed of a wire transfer, and people at the speed of a commercial jetliner, the Defense Department is bogged down in the micromanagement and bureaucratic processes of the industrial age - not the information age. Some of our difficulties are self-imposed, to be sure. Some are the result of law and regulation. Together they have created a culture that too often stifles innovation....

The point is this: we are fighting the first wars of the 21st century with a Defense Department that was fashioned to meet the challenges of the mid-20th century. We have an industrial age organization, yet we are living in an information age world, where new threats emerge suddenly, often without warning, to surprise us. We cannot afford not to change and rapidly, if we hope to live in that world." (Rumsfield, 2003)

This quote by the former Secretary of Defense emphasises the dichotomy that exists today within the Department of Defense of the United States government. The need for change is widely recognised across the bureaucracy but implementation has been slow and uneven. This condition unfortunately is symptomatic of the federal bureaucracy as a whole. In this next section, the author will outline the development of IO in America, as it has evolved over the last 60 years and compare it to the available literature, to develop a cogent and coherent argument to understand the context of this research. While these publications are very diverse and range over many academic subject areas to include power, information, international relations, computer security and organisational theory, each will be linked by the author to the evolution of IO within the United States government to provide an understanding of their context. The reason for this diversity of literature is due to the incredibly broad nature of IO itself. Because the definition of IO covers such a large number of subjects, at once it is everything as well as nothing, which makes it very difficult to understand where to frame the boundaries of the discussion. There is no clear line or easy demarcation to determine what clearly is or is not a part of IO, so more often than not, the researcher is forced to cast his net far and wide in search of primary sources that allude to or reference this emerging capability. Therefore the reader will notice a wide variety of sources cited and alluded to as the author describes the development of this new warfare capability in the United States.

Information Operations is a formal attempt by the United States government to develop a set of doctrinal approaches for its military and diplomatic forces to use and operationalise the

power of information. Per the original primary Department of Defense policy on IO, the target is the adversary decision-makers and therefore the primacy of effort will be to coerce that person or group of people, into doing or not doing a certain action (Joint Publication 3-13, 1998). To affect the adversary decision-maker, IO attempts to use many different capabilities such as deception, psychological operations and electronic warfare, to shape and influence the information environment. This is a very high level and strategic approach to policy within the United States government but as mentioned in the first chapter, in reality, IO is more often than not, performed at a much lower or tactical level. Therefore this section of the thesis will be aimed at studying the available academic literature to evaluate the differences as IO has evolved into a full-fledged warfare area.

2.1 Literature Review: An Introduction

This research is unique and develops new theoretical concepts with regard to IO, for in the interviews conducted, few academic works were identified that concentrated on IO and none were discovered with respect to its conduct by the United States government. The most notable ones such as Rattray's and Dunn's are mentioned and referenced in this chapter, but none of these previous studies, specifically fills this particular research area based on the aforementioned hypothesis (Rattray, 2001; Dunn, 2002). Therefore in this section, the context of what has already been done and connected or linked to this study is examined. In addition, the need for this thesis is justified by identifying gaps in the academic literature as compared to operational reality of IO as it is conducted by the United States government today

In this introductory portion of the literature review, the context is set by defining the key elements of power, information and information operations, within the construct of the traditional international relations theory, to show where it fits ... and noticeably, where it does not.. This is done to give a baseline of knowledge from which to understand the concepts which will later be developed in this thesis. In addition, in this chapter, the overall trends in the literature with respect to IO, will be traced and developed into a larger picture of this warfare capability. One interesting aspect that the reader will notice almost immediately is the preponderance of government publications and official documents utilised in this research. There are number of reasons for this, most notably the fact that this research is concentrated on the United States government and therefore directives or instructions that have been issued from

an 'official' source tend to lend a lot of credence to the authenticity of the information. In addition, because IO is an activity that spans multiple federal organisations, the number of government publications also tends to be high as each activity publishes its 'own' version of how it will conduct these particular operations.

The literature review is divided into three parts – an introductory or definition section, the main body that traces the development within the United States government while comparing and contrasting the key events to the available literature, and a summary section that attempts to tie all of these publications together into a coherent picture. Therefore each of the articles, books or directives that were referenced, were done so because they have either contributed or directly influenced (both positively and negatively) to the evolution of IO. For example, while some texts are included on the elements of power, these were done so only where it was in relation to information and IO. Also the author attempted whenever possible to use primary sources, so for example internet documents that were unsubstantiated, were not used, unless they were previously published in approved, vetted, or reliable source material. This included opinion pieces in blogs, websites or chat rooms and so as alluded to earlier, in this thesis, there will be extensive use of 'official' publications, interviews and recognized journals, books and academic studies were utilised as the main source of academic literature for this research.

2.2 Theoretical Constructs

One of the challenges in this research is that it does not propose to update, challenge, adapt or confront any of the traditional theories of international relations. This is because the changes described in this research represent a profound shift in the nature of power. The thesis that lies before you discusses a huge transformation regarding power and information that has not been either fully accepted by academics schooled in the traditional theoretical schools, or has been part of a vigorous debate within the scholarly journals on these precepts. So in general, there tends to be is a shortage of ideas and thoughts, that is a comprehensive theoretical construct to adequately express these new ideas. As Rosenau (1998, p.33) relates, "A new lexicon is needed for this purpose...there is a huge gap between our sense of profound transformations and our ability to grasp them from a huge shortage of the tools needed... our vocabulary and conceptual equipment for understanding the emergent world lag well behind the changes

themselves". Therefore there is a gap, a need that exists for a new theoretical construct, one that can better model and explain events in this new Information Age.

As many analysts realise, the quest for a new academic theory is normally unfulfilled, because we ask our models to do too much. To begin with, most theories do not predict, but instead give you ideas of what events are likely or not likely to happen. What theory does in reality is to help you organise facts, identify variables, and determine which factors are the most important. The understanding that there is no comprehensive theory of international relations often can go a long way toward explaining how useful these models really can be. It can take a while to understand, that there is not one set of assumptions or structure that will answer all political questions of our times, but instead that theory can give you a map of the landscape. For all of international relations is about perception – the insight that an adversary or ally may have often comes from observation of the different forms of power that a state or group may have. Therefore, it was not surprising that in the past, since military power was often the easiest factor to measure or count that this element of power tended to be given the greatest weight in any sort of calculation. But as history has demonstrated on numerous occasions, the ownership of a preponderance of military does not always translate into victory. The fungibility of military power as expressed in Keohane and Nye's theory on complex interdependence is not nearly as high as many analysts believe, thereby giving false illusions as to its usability (Keohane and Nye, 1989). Other forms of power in the form of political, economic, social, religious and informational all play a role as well, because they are often hard to measure or calculate, their potential is often neglected or reduced in importance. Thus, it should be noticed in this research that a theoretical construct and a proposed methodology has been developed that provide a hypothesis, a point of departure, a construct, and framework in which to more comfortably view the events as they occur.

The primary focus of this research is divided into three areas - policy, organisation and training with respect to information, within the three main government agencies involved with foreign policy in the United States – namely the White House and the National Security Council; the Department of Defense and the State Department. The two key areas of IO that are examined for development are computer network operations and perception management, for as mentioned earlier, these are the two warfare areas that have changed the most within the last decade. Computer network operations as noted previously, is an umbrella term that encompasses a wide

range of cyber-related activities. For the purpose of this thesis, we will divide computer network operations into three parts:

- Offensive – Computer Network Attack
- Defensive – Computer Network Defense and/or Infrastructure Assistance
- Support – Computer Network Exploitation

Each of these areas has a role to play in this new and exciting warfare arena, with the very term denoting thoughts of cyber warfare and futuristic technology. While many people have visions of precision accuracy and war without needless violence, others have a vision of a more kindler and gentler form of warfare for man to evolve to. As many officials within the federal bureaucracy have come to realise as part of this study, attitudes about computer network operations often does not equate to reality. Thus while by definition computer network attack is a current capability of the United States, some would say that it is so limited by legal, political and security constraints, as to make it virtually useless to the unified combatant commanders.

Perception management is the other key area of IO that has changed significantly over the last decade. Through the use of computers, telecommunications, video, the internet, e-mail and other technological advances, the ability to shape an image or conduct an influence campaign has increased greatly. Instances that are mentioned in this research include the use of a video camera by the Somalia warlord Aideed in 1993, the denial of service attacks by the Electronic Disturbance Theatre in 1998, and perhaps most influential, the timing of the second explosion at the World Trade Centre in 2001. All of these events were perception management campaigns designed to manipulate public opinion. In each case the tools used were all different, but the goal was the same – to produce an effect, or a perception in the mind of the target. As will be shown in this research, the ability of the United States government to affect this capability has also radically changed over the last decade.

Earlier arguments about the growing role of information were set forth by Robert Keohane and Joseph Nye in their seminal book, *Power and Interdependence,* which describe in detail how these academics portrayed the changing role of information with regards to the power capabilities within the world political structure (Keohane and Nye, 1989, p. 23). Also mentioned previously were John Arquilla and David Ronfeldt, who in a series of books culminating in their much heralded *The Emergence of Noopolitik: Toward an American Information Strategy,* together recognised that we now live in the information age - an era of networks, interdependence, international organizations and transnational activities (Arquilla and Ronfeldt,

1992, 1993, 1996, 1997a, 1997b, 1999). This latter set of authors stated their belief that nation-states are losing power to hybrid structures such as non-governmental organizations and multi-national corporations within this interconnected architecture. Access and connectivity, including bandwidth are two key pillars of these new organisations, while truth and guarded openness will be the approach used by both the private and government sector to conduct business. They felt that time zones were more important than borders, and foretold of an age of small groups, using networks to conduct swarming attacks that will force changes in policy. Key features as quoted by these two authors include these important points:

- Wide open communication links where speed is everything
- Little to no censorship, the individual controls his own information flow
- Truth and quality will surface but not initially
- Weakening nation-states and strengthening networks (Arquilla and Ronfeldt, 1997, p. 441)

2.3　　　International Relations Theories

This lack of a defined theoretical construct surrounding IO led the author to first examine the methodologies that serve as a foundation for the international relations field. Through the use of theories and models, academics in this area hope to better understand the complicated proceedings of world politics. Kegley (1995, p. 8) states that the "theory of international relations needs to perform four principle tasks. It should describe, explain, predict and prescribe". In this section, the three major categories or classic international relations theories – liberal, realist and alternative are all examined in detail with respect to IO, to try to determine how well they can explain the changes brought on by this new element of power. All authors and theories are reviewed with respect to the four fundamental points outlined below:

- Object of analysis and scope of enquiry
- Purpose of social and political enquiry
- Appropriate methodology
- Is international relations distinct from, or related to other fields
(Burchill and Linklater, 1996, pp. 16,-21)

The theoretical constructs that comprise international relations are relatively new, with the field not separating from the larger domain of history until 1919. Much of the outgrowth of international relations can be attributed to the academic reaction of the horrors of World War I. A need was felt to study the lessons learned from this conflict in an attempt to try to prevent a war of this magnitude from ever happening again. Thus the majority of the effort in the interwar

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period was conducted by scholars from the United States and United Kingdom to answering the following three questions:

- What had war achieved, other than death and misery for millions?
- Were there lessons from the war that could be learnt to prevent a recurrence of conflict on this scale?
- Was the war caused by mistake, misunderstanding or malicious intent?

(Ibid, p.5)

2.3.1 Liberalism

The first of these academic theories to evolve within the new field of international relations was Liberalism, which grew as mentioned above as a reaction to the grim reality of the Great War. There are many sub-categories within the liberal framework, which include International Liberalism, Liberal Utopianism, Neo-Liberalism, Complex Interdependence and International Regimes. By definition, a liberal view of international relations believes human nature is essentially good or altruistic. There is a prevalent fundamental human concern for the welfare of others, and liberals believe that bad human behaviour is not a product of evil people, but rather evil institutions. War is thus not considered inevitable, and the liberals view war as an international problem, that can be avoided, and that international society must eliminate anarchy by reorganising itself (Kegley, 1995, p. 4). These beliefs contrast sharply with those from the realist viewpoint, with the object of analysis and scope of enquiry probably the biggest differences between liberals and realists. A good example of these differences is the study of internal state politics as an explanation of a nation's actions. Some liberal academics believe that it is precisely these internal politics that greatly affected the international economics. One researcher in particular argued that domestic politics were the overriding concern of the majority of the policymakers and that any benefits associated with international policies were often outweighed by the high political price at home (Simmons, 1994, pp. 4-18). The study of human activity also seems to be a main focus of liberal research, with whole books devoted to the study of how nations begin wars. One liberal academic assumed that man is intelligent and is somehow trapped by his decisions. This leads to a discussion of why man starts wars or once in a conflict yet refuses to get out of one when he knows better (Maoz, 1990, p. xii). This paradox can be compared to those who attempt to analyse why there are cases of misperception in world politics. Likewise any avenue of liberal beliefs is often concerned with the study of the causes, consequences, perceptual errors, beliefs, and images that are used by decision-makers (Jervis,

1976, p. 3). These academics felt that the "perceptions of the world and of other actors diverge from reality in patterns that we can detect and for reasons that we can understand." (David, 1991, p. 235). Thus, one purpose of the liberal enquiry is to demonstrate how we can better understand man and the factors that affect his political decisions. The anarchy that is so prevalent in the realist theory is present but within the state system, not at the international level. The states are not acting as independent units pursuing national interests but rather as vehicle for leaders own personal gain (Ibid, p. 237).

If the methodology liberals use to study their craft is examined, most will agree that it is from a traditional viewpoint with an emphasis on history, law and philosophy. A good example is analysis of international regimes, where one researcher uses the international aviation regime to compare and contrast the efficiency of different theories.

> The positional of all regime theorists, regardless of whether they are institutionalists or modified structural realists, can be translated into a single hypothesis: Given the considerable interdependence in the world, which necessitates cooperation among states, international regimes are pervasive in the international system-particularly in issue areas that lie outside the zero-sum realm of security - and once created, they are likely to persist (Nayar, 1995, p.143).

Do liberals believe that the study of international relations is a separate and distinct academic field? Yes, because to be effective, they must reach out to other domains and use research conducted in these different disciplines. For example, Jervis believes that psychologists work with respect to international relations is important, but he is wary of applying it directly to case studies. On the other hand, he also believes that "most international regimes scholars have paid no attention to psychology - that they have failed to recognize the importance of misperception" (Jervis, 1976, p. 6). Likewise he also understands that if decision-makers recognise the limitations of their mindsets and if they attempt to try to see the world the way the other sees it, then they may be able to decrease the cases of misperception. Specifically, he suggested that to expose implicit assumptions and give a decision-maker more freedom of choice, he should encourage the formulation and application of alternative images. While this may be accomplished by the divergence of interests, goals, training and information available within any large organization, often times this is not enough. It is often difficult, psychologically and politically, for any one person to examine many alternatives, so instead Jervis suggests they should employ devil's advocates. There are limits to the utility of a third-party opinion that is not

truly neutral, but overall Jervis believed that a minority view is needed to guard against cases of misperception. It is then that these devil's advocate's can ensure that new information, rather than calling the established sub-goal into question, will not be interpreted within the old framework (Jervis, 1976, pp. 415-416).

2.3.2 Realism

Liberalism was the first major theory of international relations and it was the predominant focus during the interwar period. It was not until the late 1930's and the publication of *The Twenty Years' Crisis* that a major alternative international relations theory, in the form of realism, was championed (Carr, 1939). This theory was later refined to neo-realism by the effects of World War II, and the onset of the Cold War (Morgenthau, 1967; Waltz, 1990). The 'realities' of power politics during this period also did much to cement the realist theory's, into the predominant school of thought within international relations for the next 40 years. The major beliefs of realism start with the idea that man is by nature sinful and wicked. He lusts for power and you cannot eradicate this instinct, while the struggle for power is an all-consuming goal, with all other interests subjugated. Therefore nations will define the acquisition of power as in their best interest and will build military capabilities to maintain and defend themselves. The military will always be considered the primary source of power, and states will not rely on allies to protect them plus treaties with other nations are only useful for balancing power. While these ideas do not constitute all of the concepts of realism, they should give the reader a broad view of the theory's basic assumptions. Included under the broader category of realism are additional sub-areas entitled Neo-Realism, Structural Realism, International Political Economy and Decision Making Theory.

As opposed to liberal theory, the realists are mainly focused on the international system and the nation states in their research. This is evident in Morganthau (1967), which many consider the first academic to advocate a realistic theory on international relations. Based on lectures given at the University of Chicago, he tried to differentiate realist theory by listing its six principles and defining power, including the many elements and factors. Also, he attempted to give realism a scientific approach and then conducted a very detailed analysis of the limitations of power and the problems in world politics. Morgenthau's opus was and still is considered a magnificent attempt to produce a grand theory of international relations.

Realism as a theory, has evolved greatly in its social and political enquiry from its initial development. The change was mainly an attempt to show how the anarchical nature of the international system is the overriding determinant on man. First expounded by Waltz (1990), who took the themes from realism that had been espoused by Carr and Morganthau, he later refined them and developed a new theory which is now known as neo-realism. In his seminal work, Waltz used philosophers such as St Augustine, Hobbes, Kant and Spinoza, to show that the root of all evil is man, and thus man is the root of the specific evil of war (Waltz, 1990, p. 3). Waltz also quotes Rousseau to say that he finds the major causes of war neither in men nor in states but in the state system itself (Ibid, p. 11). These arguments and others are steps on the road to Waltz's theory that international relations are characterised by the absence of truly governmental institutions. It is this anarchy that forces states to act the way that they do. This is because "each state pursues its own interests, however defined, in ways it judges best. Force is a means of achieving the external ends of states because there exists no consistent, reliable process of reconciling the conflicts of interest that inevitable arise among similar units in a condition of anarchy" (Ibid, p. 238). Dessler in his *International Organization* article *What's at Stake in the Agent-Structure Debate?* tries to take Waltz one step further by developing a structural model of international relations. This transformational structural theory Dessler argues, can better explain and develop decision-making processes, horizontal linkages and a more comprehensive ontology (Dessler, 1989, pp. 441-474).

This development of new international relations theory is the heart of the debate between neo-realists and neo-liberals. Some of the most contentious ideas are not about theory as much as the factors that define a theory. For example, power as mentioned earlier, is a major focus in the study of realist theory. David Baldwin attempts to address these issues by analysing what exactly power is and how does it relate as a variable. He reviews much of the doctrine in this area and his general consensus seems to be that power is not as well defined and useful as many people believe. He thinks the term is too loosely used, that there should be much more defining or narrowing of its use and the issue of fungability is not nearly as great as many theorists would desire (Baldwin, 1980, pp. 161-180).

The methodology used by realist's can also be quite traditionalist. Keohane explores the growth of international organisations and their influence in the international regimes that has significantly changed the dynamic in the last decade. Some of this is due to the extensive

amount of international cooperation since World War II, although Keohane (1984, p.3) warns that "a rising level of cooperation may be overwhelmed by discord, as increased interdependence and governmental intervention create more opportunities for policy conflict". He believes that international regimes "enhance the likelihood of cooperation by reducing the costs of making transactions that are consistent with the principles of the regimes. They increase the symmetry and improve the quality of the information that governments receive" (Ibid, p. 244).

The study of international regimes by realists is also important in that it shows an evolving theological methodology to perhaps a closer relationship with liberalism. Nayar (1998 p. 168) shows this aspect in his article on aviation. Although primarily concerning international regimes, in his conclusion Nayar states that realism is more robust than previously given credit for. He believes that liberal institutionalism considers international regimes as representing shared values and norms of an evolving, if nascent, international community transcending interstate conflict. Nayar then goes on to state that realism regards international regimes as related to interests and capabilities of states, and that any cooperation among states is regarded as contingent and transient. Thus, it is his belief that structural realism emerges with the superior explanatory power in the case of international regimes. Keohane has a similar argument, namely that hegemony is not as important as cooperation, and that "cooperation is viewed by policymakers less as an end in itself than a means to a variety of other objectives" (Keohane, 1984, p. 10). He also states that while hegemony may be used to create cooperation, it is the willingness of governments to remain within international regimes long after they could have left which is similar to what Nayar argued in his article.

Also, Realists take a scientific approach to their study of theory methodologies. In Lebow and Stein's (April 1990, pp. 347-352) article in *World Politics*, the authors proceeded to denigrate many of the so-called tests and data that deterrence theorists had used. They questioned the validity and reliability of the data, the application of the deterrence definition, and how intent can be verified. Realists tend to address technology issues readily, for example, in an *International Studies Quarterly* article, der Derian (1990) addressed some of the problems that operators are experiencing in conducting business in modern society. The speed at which decisions are made and information passed often overwhelms the policy-maker. This model sounds similar to what Jervis was arguing about the rise of misperception by decision-makers. Der Derian also believes that 'speed is the essence of war' and that time is more important than

geography for success on the battlefield. In this article, Der Derian tries to bridge differences in theoretical approaches mainly by arguing that the post-structural ideas of Keohane "can grasp - but never fully capture – the significance of these new forces for international relations" (Der Derian, September 1990, p. 307).

Thus, the ideas of technology and the use of it in foreign policy is often crucial to realist mindset, and are also implicit in the development of IO theory. The factors that der Derian discusses in his article - simulation, surveillance and speed – can all be summarized by information technology. This is also the general consensus and thrust of the article by Shapiro (September 1990, pp 329-339) in *International Studies Quarterly*. In this paper, Shapiro basically argues that no longer is foreign policy limited to diplomats and the government but has instead become available to the masses due to technology. There are more players involved with a variety of interests and equities that must be met in order for an issue to be resolved. Some of these new players are multi-national corporations, the media, as well as non-governmental organizations. Whoever they are, in Shapiro's view the masses are complicating the discourse of American security policy. The media in particular gain Shapiro's ire, because he believes that they have altered the ability of the government officials to conduct foreign policy. This is very interesting, because much of the realist's consternation evolves from the fact that the nation states are losing control in this new era,. Politics are becoming more complicated because there are multiple players with different agendas that all have access to the playing field now due to the rise of information technology. These factors are exactly what make advocates of IO so excited, because the power of the government is being transferred to the people.

2.3.3 Alternative Theories

The final category of international relation theories reviewed as a possible construct for this thesis includes all of the so-called alternative issues. It has only been in the last two decades, since the fall of the Soviet Union in 1991, that a major challenge to the dominance of realism and liberalism has erupted within the international relations field. Some of these controversies were caused by the collapse of bipolarity, others by the perceived eroding stature of the nation-state. Whatever the reason, a whole host of alternative and competing theories have arisen that have challenged many sacred assumptions about international relations. These consist of Marxism, Critical Theory, Feminist Theory, Ecological Theory, Post-Modernism, Institutionalism and

Constructivism. Because of their diverse backgrounds there is no standard definition for alternative theories. Instead advocates try to focus more on these types of alternative issues, bringing them out of the margins to ensure that their equities are adequately addressed.

The object of analysis in alternative international relations theory often addresses subjects that have been neglected by traditional international relations research. Likewise their social and political interest areas tend to be vastly different than 'mainstream' academics. This can be seen in Christine Sylvester's (1994) book *Feminist Theory and International Relations in a Post Modern Era*. She argues that all of the great international relations debates would have been affected by feminist theorising had women been included. This lack of feminist insight Sylvester argues not only limits the effectiveness of these theories but also shows to the extent that the international relations field is parochial in its scope of enquiry. The 'typical' methodology utilised by international relations academics is also attacked by Sylvester in her book, as too limited and not exclusive enough of all viewpoints (Sylvester, 1994, p. 4).

Alternative theories, more than any other, tend to broaden the field of international relations. Finnemore (1996) argues that scholars in the international relations field would do well to look into the academic work being conducted in sociology. Although Jervis had argued that psychologists were limited in their ability to solve issues within international relations theory, Finnemore believes the opposite to be true. She states that the institutionalist research conducted in since the 1970's has done much to provide evidence of global cultural homogenisation. The growing interdependence that she sees is a product of a 'Westernisation' of the world in which the notion of bureaucracies and markets are flourishing. In addition, because of the idea that a nation-state is the 'only' legitimate unit that can operate in the modern society, many areas are being pushed into becoming a state, when they are not equipped to do so (Finnemore, 1996, pp. 328-336). Thus, she argues that it is sociology's work on the individual and institutionalism that need new emphasis in our current era. Research conducted on education policy, the cultural awareness that an individual receives from the state is crucial to the development of the nation's identity. She argues that by understanding the sociologist's research into the spreading of western values, the international relations scholar may well better understand some of the factors that they face around the world. Likewise Simmons (1994, p. 283) work on international economics has important comments for adherents to the game theory model as well. Her research indicated that the internal political situation so overwhelms any

other thought processes, that many extra conditions are often added on as new factors, making it is virtually impossible to try to compare and contrast equivalent behaviour.

In conclusion then, the value of an academic theory is based on its usefulness in adequately assessing world politics. With the dramatic events started by the end of the Cold War, the liberal ideology has regained much of its former status and has seriously challenged realism as the pre-eminent theory within the international relations field. This is not so much because that the liberal theorists predicted all of the events of the preceding decade, but more importantly that realism as a theory did not! Likewise the alternative theories, while maybe not representing a grand international relations theory, have nonetheless chipped away at the importance of realism for not addressing the many factors that these advocates see as important modifiers. There are many ideas that influence political decisions and all of these must be taken into account in forming a comprehensive academic theory. For no matter what ideology or theory a researcher represents, they still must argue and ensure that their model can meet the four goals described in this paper. This is the basic question that every student must ask - is this theory relevant and does it describe in adequate terms the events that are being studied. For if a theory cannot describe, explain, predict and prescribe accurately the world politics then is it really a theory at all?

2.4   Definitions of Power, Information and IO

"Traditional measures of military force, gross national product, population, energy, land, and minerals have continued to dominate discussions of the balance of power. These power resources still matter, and American leadership continues to depend on them as well as on the information edge... Information power is also hard to categorize because it cuts across all other military, economic, social, and political power resources, in some cases diminishing their strength, in others multiplying it ".

(Nye and Owens, 1996, p.22).

After a thorough review of the different academic theories that comprise the International Relations field, there were none in whole that matched to the issues involved with regard to IO. So an analysis of power and information was undertaken next. Power can mean many things, to many people. Generally its use is understood, that is, who has power and who does not. Power is also one of those ubiquitous terms that everyone seems to understand but few can actually define. Hans Morgenthau defined the elements of national power as geography, natural

resources, industrial capacity, military preparedness, population, national character, national morale and the quality of diplomacy and government (Morgenthau, 1967). Nowhere in Morgenthau's definition is the use of information seen as an element of power. So this begs the question - have the elements of power changed over the last four decades? A short answer is yes and no, depending on the sources that one reads. For example, in a recent study by RAND, a revised view of power was suggested that combined national resources and performance to create an updated version of military capability as shown below:
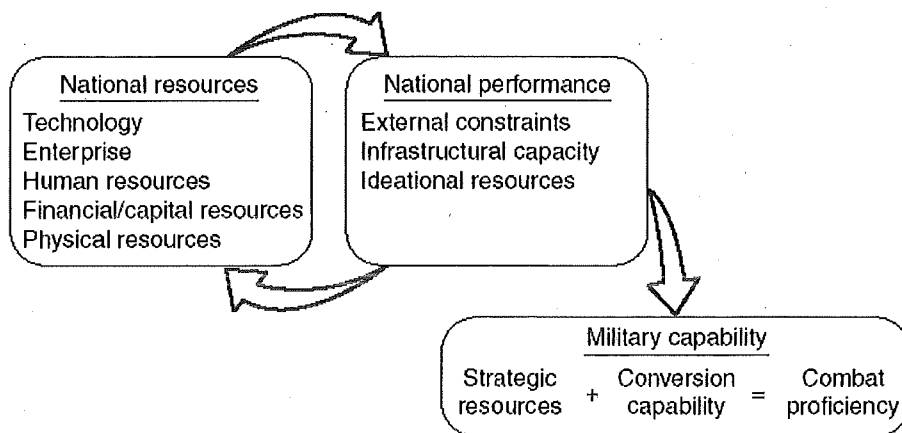
Figure 2.1 – Views of Power (Source: Tellis et al, 2000, p. 8)

Notice in this diagram, that technology is rated as the number one national resource as opposed to the more traditional concepts such as Morgenthau's that primarily involved physical assets. This is a huge change from older analyses which concentrated much more on a mere 'counting' of military assets and industrial plants. This RAND study goes straight to the concept that in essence symbolises the massive changes inherent in the Information Age, namely that the traditional power structure of the international community is being radically altered, thereby allowing nations, non-governmental organisations, small groups and even individuals to gain an inordinate amount of power, based solely on their information technology capability. These ideas are emphasised even more by the RAND researchers as they explore this concept further in the aforementioned study. These ideas can be seen in greater detail even more in the following diagram, as the critical areas of technology are analysed, such as in this case, the location of information and communications. This revised ordering of resources that comprise power is definitely a change from previous studies in which more traditional emphasis was placed on natural resources.

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National Resources
 • Technology
 • Enterprise
 • Human
   resources
 • Financial/capital
   resources
 • Natural resources

Critical Technologies
 • Information and communications
 • Materials
 • Manufacturing
 • Biotechnology and life sciences
 • Aeronautics and surface transportation
 • Energy and environmental
```
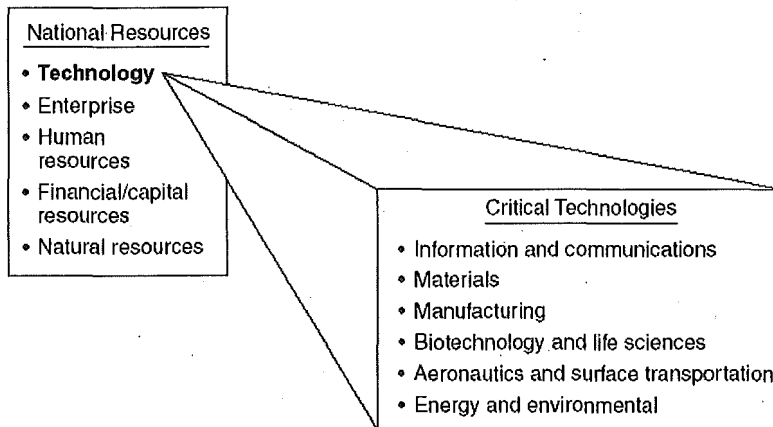
Figure 2.2 – Revised Reordering of Technologies (Source: Tellis et al, 2000, p. 12)

Not everyone agrees with these concepts, and sometimes they do not even agree from the same research group! In another conference sponsored by RAND and the Central Intelligence Agency, analysts attempted to update the definitions and ranking's of nations visa vie power, and the main elements considered still consisted primarily of military and economic factors, that is, gross domestic product. Technology was sometimes included in this study, but information per se, as a separate and discrete stand alone element of power was never elucidated (Treverton, 2001, p. 17).

Taken together then, while there is a general understanding that change is needed in this new information environment, at what rate or pace is not always agreed upon. There are many academics that advocate a more gradual view of the changing emphasis of power and information is appropriate. For example, Tempestilli (1995) made the argument for the greater emphasis on the military uses of the informational element of power in his Master's thesis, *Waging Information Warfare: Making the Connection between Information and Power in a Transformed World* (Newport, RI, Naval War College). This is a slightly different slant than advocated by some academics who have called for a separate informational component or agency in the United States government similar to a cabinet agency. For if one examines the United States government closely, it is organised in this manner, namely with cabinet agencies centred around each of the traditional respective areas of power – Department of Defense (military), State (diplomatic), and Treasury or Commerce (economic), with each having their own informational component. There are also interagency organisations such as the National

Security Council or National Economic Council that still favour the concept of these three major elements of power (military, diplomatic and economic). Nowhere does a Department of Information exist in the United States government, because this form of power is still viewed by many as being very different from the more traditional elements, and in fact most of the participants in this research still did not advocate a separate branch or cabinet agency for information. Tempestilli agrees with this concept as well, and argues that each of the major three elements of power – militarily, diplomatic and economic, already in fact have informational components and that the United States government does not need a new Cabinet agency to focus solely on this element of power. This horizontal integration of information vice a vertical division as its own element has both good and bad aspects from an IO policy perspective. Tempestilli argues, and the author agrees as well, that the cross fertilisation between the informational components is better than a single monolithic centre for information. This concept follows a majority of the participants in this thesis who also advocated for a greater horizontal integration across the interagency spectrum. From a policy perspective, this can be seen in Joint Publication 3-13 *Information Operations* that lists IO as an 'Integrating Strategy', that is, one that can bring together these disparate warfare areas (JP 3-13, 1998). Thus as Tempestilli originally advocated, and has been borne out in countless interviews for this thesis, the use of informational power tends cuts across the entire United States government structure and is not easily pigeonholed into a traditional cabinet structure. This is both a strength and weakness for understanding the power of information, because it cannot be viewed in a traditional manner like the military or diplomatic elements.

Therefore, it is not surprising that Tempestilli was only one of many authors that were commenting on the perceived notion of a revolution in military affairs that were occurring in the mid 1990s. For example, there was a huge emphasis in the 1995-1996 timeframe, where a large number of articles by various authors highlighted the issues involved with the technological evolution of information. Cohen (1996) was one of these contributors during this period who argued for a change in reorganisation of the United States military to coordinate power in the information age. His concept was an attempt to solve the problems with incorporating information into the traditional hierarchical government structure, and while his argument was not answered immediately, there has been over the last decade, a number changes that have occurred, which in essence completed the reorganisation that Cohen advocated. As will be

alluded to later in this chapter, the American government, has significantly altered its organisational structure with respect to the functions of IO. As the participants stated throughout the interview process, more still needs to be done, to close the gap between strategic policy and the tactical reality of IO. A good analogy that is often used to answer the question about why IO is taking so long to become established within the United States government is to simply look at the introduction of aviation into the military services starting with World War I. The fact that it took a good two decades to realign and transform those military forces into truly utilising the power inherent in airpower, should not be lost on anyone. The same can perhaps be said of IO, namely that it will take time and hard work, perhaps on a similar timeframe as aviation for its potential to be truly realised.

2.4.1 Changing Views of Power

This research was conducted over the first decade after JP 3-13 was published (1999-2008). Based on the previous analogy, it could be thought that significant changes should have occurred with respect to these new views of power. For, if information is now accepted as an element of power, should there not be dramatic changes as well from previous theories? Is the power of information new or different, as some advocates believe, or has information always been an element of power, but it could never be properly utilised. Said in another way, has information always been an element of power and it is only now that technology can manage and harness this power? Critics of this new view of power have argued that because the world access to the Internet is not universal, this new technology cannot truly change global politics. Wriston (1997) notes that while maybe this is true, it is also irrelevant. The standard has been set, and the benchmark is high, for these new views of information flow must be understood and respected. In fact, the percentage of overall access and connectivity to the internet are on the verge of exploding as the combination of cellular technology and cheaper interface devices proliferate.

However, the question is whether access to technology necessarily equates to greater power to a group or nation. Once again, the short answer is that it depends. As Treverton (2001) relates in the report from RAND,

> "State power can be conceived at three levels: (1) resources or capabilities, or power-in-being; (2) how that power is converted through national processes; (3) and power in outcomes, or which state prevails in particular circumstances. The starting point for thinking about—and developing metrics for—national power is to view states as

"capability containers." Yet those capabilities—demographic, economic, technological, and the like—only become manifest through a process of conversion. States need to convert material resources into more usable instruments, such as combat proficiency. In the end, however, what policymakers care most about is not power as capability or power-in-being as converted through national ethos, politics, and social cohesion. They care about power in outcomes. That third level is by far the most elusive, for it is contingent and relative. It depends on power for what and against whom"

<div align="right">(ibid, 2000, p.11).</div>

What is interesting about this third concept, is that while it may be the most difficult to achieve, from an IO perspective, it may also offer the most promise. One only has to review the four definitive bombing surveys of World War II or Vietnam, to quickly realize that military power often does not translate at all into desired outcomes. Clodfelter (1989), a retired Air Force officer, said as much in his book, *The Limits of Air Power, The American Bombing of North Vietnam*. For as the well-researched and documented official reports from the US Air Force allude, the massive bombing operations in all of these conflicts did not necessarily and in many cases, did not at all translate to shifts in the affected government or populations attitudes. As one veteran (and perhaps jaded) military officer once quipped, "If the only tool you have is a hammer, ever problem looks like a nail" (Hubbard, 2004). So too is the case of trying to take military power, in this case aviation assets, and translate them into recognisable outcomes. More often than not, this is not an easy task, as alluded to by many of the interviewees.

The traditional central concepts of power in the form of national resources, and the need to convert those resources into power and instruments of power, are solely but surely a key point of the last few pages as different academics have added and changed the common views of power. In addition, since IO as an academic study area crosses many issue lines, the development of suitable theoretical constructs has not always been easy with respect to power and information. A series of attempts that should be widely recognised can be attributed to Alvin and Heidi Toffler, who are probably the most prolific social authors with their three books *Future Shock* (1970), *The Third Wave* (1984) and *War and Anti-War* (1993). So profound is the influence of this couple and their publications on the Department of Defense and United States government that probably more than any authors, they have had the greatest effect not only on the general public, but also on governments around the world. It is their futuristic forecasts more than anything, of how we as a people are evolving with respect to the power of information, that have made them most famous. But they are not alone. Similar ideas about how the elements of

power and information are viewed and used are shown in other literature as well. For example, Kuehl (1997, 2000) from National Defense University argues that information is an equal element of power just like its counterparts from the military, diplomatic and economic realms. In fact in the United States military, the acronym DIME (Defense, Information, Military and Economic) is often used to express this concept – namely that there are number of elements that make up power, and that the military aspect is not the only one that should be utilised.

2.4.2 Soft Power

The concept of 'soft power' is not new. Haskell (1980) was an early adopter of this philosophy, in her discussions on the idea of information as an element of power. In her article on foreign policy, not only did she advocate the inclusion of information as an element of power but she also included the social aspects of power. Still others like Nye (1990) have brought forth the concept of 'Soft Power', which includes informational elements as well. In fact, Nye has continued an emphasis on this theme over the last 18 years with a number of books and articles as the world has evolved in the post-Cold War era. An extremely interesting concept, 'Soft Power' basically argues that one can significantly influence other nations through the cultural and informational aspects of its society. As opposed to 'Hard Power' in which analysts can often 'count' or conduct intelligence to determine the potential of a perspective country, 'Soft Power' instead is a more influential or persuasive type of capability, and can be viewed by some, as a theoretical construct that span the gap between strategic policy and tactical operations of IO. In fact, 'Soft Power' may in fact be the one capability that can attain that elusive 'outcomes' that was mentioned in an aforementioned RAND report (Nye, 1990; Treverton, 2001).

But what is Soft Power? It was originally defined by Joseph Nye as a concept that emphasises the power of attraction, as opposed to the power of coercion. All forms of power are extremely hard to measure, and this is no exception. Some ideas that were forwarded in the second RAND study alluded to earlier, have attempted to develop metrics to measure power as shown below:

- Access to information. The government monopoly has eroded
- Speed of reaction. Markets react in seconds, but governments are much slower, so the information technology (IT) revolution inevitably moved action away from governments toward nimbler organisations
- New voices. The process created new channels of information and new, credible voices. The loudest voice, that of government, has become less dominant

- Cheaper consultation. Because of nearly unlimited bandwidth, communication costs began to approach zero. Coordinating large and physically separated groups becomes much cheaper
- Rapid change. Governments, by nature, are more likely to sustain the *status quo* than drive change, and so non-state actors are often the drivers by default
- Changed boundaries in time and space. Information Technology again is driving the change, just as the invention of the printing press undermined the church's role as broker between people and their God. (Treverton, 2001, p. 13)

Are these the only metrics available? Of course they are not and yet it is these 'outcomes' as mentioned previously that are most desired by government officials. A recent series of reports by RAND on the 'Information Revolution' illustrates the growing collection of data that is becoming available on information technology in particular. These include the number of internet users, the internet market size and high-technology exports. So there are actually some metrics that are available, which of course is key because this kind of data as it relates to IO, may give researchers the ability to measure the factors that are needed to achieve outcomes without the use of military power. Of course, what is interesting about these concepts is that it is exactly the ideas that these three aforementioned authors advocate, which while radical in their time, have been generally accepted today. The problem is, and thus the reason for this research, is that there still remains a gap between the high level strategic theory of IO, and its actual day-to-day operations. The inability of the United States government to translate these lofty concepts, the actualisation of the power of information, still remains elusive as alluded to throughout this literature review.

Chuck de Caro (2003), a former Cable News Network reporter and Special Forces member, has taken this concept of 'Soft Power' even further with his idea of 'SoftWar'. In his view, de Caro argues that conflict in the future can consist mainly of perception management campaigns with television as the primary medium. He believes that the vast majorities of populations around the world get their informational news from the television and that influence operations should be conducted using professionals from the entertainment industry. This concept is probably one of the more coherent, cogent and perhaps radical argument's that has evolved out of the IO debate, and Mr de Caro was interviewed on multiple occasions to draw out further his ideas. It will be interesting as time goes on, to see how far he gets with these concepts with respect to IO.

2.5   The Information Age

So from these books and articles, can it be assumed that information to the masses translates directly into power? 'Perhaps' is the probably once again the answer. When Gutenberg developed the printing press, it vastly increased the ability of the average person to access the written word, from what had been an exclusive privilege of the elite. Today the media is much freer than in the past, but there are still many instances and locations where information is still rigidly controlled. The RAND studies on the Information Revolution around the world demonstrate these facts over and over. Throughout this series, questions were asked such as how has information technology changed political dynamics within the countries of a given region, as well as how are the respective governments using information technology as a tool to govern. In their review, the authors from RAND analysed the political dynamics, from a largely 'bottom-up viewpoint' of the actions and initiatives of citizens, civil society, non-governmental organisations and political parties, in actions as diverse as organising protests of government policies to the overthrow of sitting regimes (Hachigian, 2001, p.55). The results of these surveys are fairly dramatic, with sharply rising access to information technology across a broad segment of the world's population.

Likewise, in understanding the dichotomy not only between the 'softer' and 'harder' aspects of IO, some books offer additional views on the power of information, with regard to the development of IO. For example in *The Art of Information Warfare*, Forno and Baklarz (1999) closely examine the perception management aspects of the power of information, and discuss the specific deficiencies resident in the United States. These authors attempted use the writings of Sun Tzu as a model to relate to the different aspects of IO, and while they succeeded in some aspects, in others they were notably short, mainly because they did not address the computer networks operations aspects of information warfare. In addition, while Forno and Baklarz did address gaps for the United States government with respect to IO, they did not have realistic list of corrections or mitigations that could be utilised by the federal bureaucracy.

If all of these changes are combined with the capabilities of information technology and the role of the media with respect to the government, it can be noticed throughout the literature review, the dramatic changes that have occurred with respect to the elements of power in the 60 years since the end of World War II. Felman (1993) notes as much in describing the historical trends of relationships between these two entities and his belief that media pools were not the

future answer to 'handling' the press in combat. Written after *Operation Desert Storm*, it is interesting to see how the intervening decade leading up to *Operation Iraqi Freedom* allowed the military an even better understanding of the power of information, and this was reflected in the press coverage of the latter campaign. However, it is still very difficult to generalise how the control of the media reflects directly on this element of power. These changes are very interesting, because in two separate documents published by the US Department of Defense and State Department, it is readily apparent that both cabinet-level agencies are mutually coming to the understanding of the need for change in their informational policy in this new environment (*Joint Publication 3-13*, 1998; *U.S. Advisory Commission on Public Diplomacy*, 2000). In fact, both of these documents are great examples, as mentioned earlier of the theoretical disconnect in IO between strategic policy and tactical reality, mainly because both of these aforementioned documents were ahead of their time. For as noted by the participants noted over and over in their interviews, while neither publication has fulfilled its original mandate or promise, they have at least paved the way for additional intellectual discussion on the relationship between IO and the federal government.

From a theoretical and strategic IO perspective, Joint Publication 3-13 was the seminal document for not only the United States military but also other organisations across the federal bureaucracy (ibid). For the first time, the Department of Defense issued in an unclassified format, the definitive concept of how America plans to conduct operations in the information age. This pamphlet showed just how important the Joint Chiefs of Staff views this particular element of power and how it can be used to affect the world politic. In effect, Joint Publication 3-13 defined for the first time the strategic vision of what IO truly could do for the United States government. But there have been issues and disconnects in this Department of Defense policy, from its very inception in 1998 and a number of attempts have been made to rewrite or update this doctrine to make it more user friendly. As this research was being finished, a new update to this policy had recently been released, to accommodate all of the changes that are occurring within the military with respect to IO. The updated IO policy is more constrained and resembles the original narrower Command and Control Warfare definition as defined later in this chapter. The new IO policy has also tried to substantially narrow the theoretical gap that exists today. But one has to ask if this is a step back in IO theory or is it more of an admission of the reality of how the United States can really conduct operations in this warfare area? While there is no

definitive answer, the author believes that it is probably the latter, based on the data collected throughout this thesis interview process.

This 2000 publication by the State Department also echoes the changes reflected in academic journals, as well as from other military sources by emphasising the need for a new style of diplomacy, one more akin to the US Department of Defense's 'Revolution in Military Affairs'. The areas that are highlighted in all of the publications listed above also continue to focus on new computer systems, notably information technology, that can be used to better aid the traditional diplomatic missions of the State Department. Likewise a shift from traditional secretive diplomacy to a more open public diplomacy role has been advocated as well, with calls for increases in financial resources and a reformation of the United States foreign affairs agencies (Brookings Institution, 1997). These were not the only sources that can highlight the importance of the management of information as a source of power. Another good example is Taylor's (1999) *British Propaganda in the Twentieth Century: Selling Democracy*, which is perhaps the only book that has been dedicated to analysing the power of information with respect to propaganda, public diplomacy, psychological operations and deception. Taylor ties together these disparate and obscure missions, in an attempt to understand the role of perception management in the 20th century (Taylor, 2002).

These views on the changing role of power in the information age are also reflected in other publications as well. Metzl (2001) wrote an article that shows the mindset of senior Clinton Administration officials as far as the potential of perception management, in particular public diplomacy and international public information with respect the changing role of power. Entitled "Network Diplomacy" and published in *Georgetown Journal of International Affairs,* what is especially interesting is that much of this article was written while Dr Metzl was serving in key roles with the development of Presidential Decision Directive 68 *International Public Information* at both the National Security Council and the State Department. Interviewed over a four year period (1999-2003), he was very insightful in his comments about how the United States government bureaucracy attempted through the implementation of new policy to come to grips with the power of information (Metzl, 2000). The inability of the White House (both the Clinton and the second Bush Administrations) to follow-through on Presidential Decision Directive 68 or really any strategic communications, public diplomacy or international public information effort on a long-term basis is crucial to the arguments of this thesis. For as noted by

many participants in this doctoral research, in interview after interview, while it is notable and laudable that all of these documents are released and that a tremendous amount of effort has gone into their research and publication, because progress in making these changes has been very slow, it has and will continue to take a long time to fully realise the true capabilities of IO. So unfortunately with respect to power, the general consensus from the literature and interviewees is that the gap between IO theory and reality may continue to exist for the foreseeable future, and that a viable theoretical construct does not exist at this time.

2.5.1 Changing Views of Information

Taken together, all of these references help to define the changing evolution of power. This is advantageous, because it gives a baseline from which to understand the new roles of information. Taken as a reference term, information can be very perplexing. It can be technically oriented to mean the packets of data on the internet and a piece of electronic bandwidth, or it may be more socially oriented to mean human-to-human contact, but in reality, information is really much more than that. Information in a nutshell is really the glue that binds the power process together, and without it, there can be no international systematic structure. Therefore just like power, information also has many meanings to different people. However this document uses the following current definition articulated by the United States military in the aforementioned Joint Publication 3-13 (1998, p. 131).

1. Facts, data or instructions in any medium or form
2. The meaning that a human assigns to data by means of the known conventions used in their representation

Information is more than just a definition. An admirer of the concept of the information society has stated, "Information exists. It does not need to be perceived to exist. It does not need to be understood to exist. It requires no intelligence to interpret it. It does not have to have meaning to exist. It simply exists." (Webster, 1995, p. 27). It is concepts such as this, which can make it difficult for the layman to understand how information can be a source of power, or used as a weapon. Formerly the control of information could be somewhat restricted to official government channels. However, this is no longer the case, not only because of the aforementioned changes in the computer and telecommunications industry, but also because of the interconnectivity of the world as well. For example, some analysts such as Brown (2002)

believe that the power of information has now shifted to the masses and away from the government. "Compared with 10 years ago, the world is a more seamless informational space, as we move from a world of distinct national informational spaces into a more trans-national informational sphere" (ibid, p.4). However, there are other academics as eluded to earlier, who in fact believe that nothing radical has changed with respect to information and power. This dichotomy was extremely apparent to the author in his research interviews and in fact produced the two opposing conceptual models shown in Chapter Eight for the use of IO in the United States government.

2.5.2 The Role of Information in Warfare

In addition, just like power, with respect to this definition of information, there are a number of publications that have appeared over the last decade which seem to address the role of information in this new environment. For example, Henry and Peartree (1998) argue for a new political theory based on the power of information. Participants in this research agree with this need as shown in later chapters. In fact, the search for a suitable theoretical construct was a long and involved process, because of the diverse and complicated nature of information. Not withstanding these issues, this is not to say that political theorists have not tried to develop new theoretical constructs with respect to IO. For example, as mentioned earlier, RAND has been very active in writing proposals for new informational policy for this era. The first of these was Arquilla and Ronfeldt's (1997a) *In Athena's Camp*, which was quickly followed by another manuscript, entitled *Strategic Information Warfare Rising* (Molander, 1998). In both of these books, the authors argue for a policy shift with an emphasis on the national or strategic level of war, where the use of information should be able to leverage the most power. Interestingly enough, it is this call for strategic IO actions, and the subsequent lack of follow-on examples, that is really the whole crux of this research, namely that there is a delta between tactical IO activities and strategic policy. A third book published by RAND during this time period, *The Changing Role of Information in Warfare*, (Khalilzad and White, 1999) also offers a strategic promise of the utilisation of this new found power. But once again, there is little follow-on progress from the United States government, as the Department of Defense did not make the wholesale changes as proposed in this book. Instead what has happened instead over the last

decade has instead been a series of small but discrete steps to slowly grow the Department of Defense's capability with respect to IO, all of which will be laid out later in this chapter.

The next publication by RAND, *Noopolitik* (Arquilla and Ronfeldt, 1999) is especially interesting, because the authors have attempted to redefine political theory with respect to international relations. They attempted to develop a new international relations strategy based on the power of information, in the process trying to answer Henry and Peartree's call for a new political theory for the power of information. Likewise in *Noopolitik*, Arquilla and Ronfeldt also argued that there is a gap between perception management and computer network operations in IO that has not been adequately addressed by the United States government, and that more strategic analysis must be conducted. These authors believe that since there is no overall IO policy for the whole of the United States government, that one must indeed be developed, to be pulled together from disparate pieces, to build a doctrine that can be analysed as a coherent whole. To quote the authors, "Strategy, at its best, knits together ends and means, no matter how various or disparate, into a cohesive pattern" (ibid, p. 5). Arquilla and Ronfeldt also stated, that they believe that these two ideational poles encompassed by perception management and computer network operations are in fact the keys to developing an overarching IO theory and that in order for their new theory to succeed a strategic analysis or linkage should be developed between these often disparate and insular communities (ibid, p. 3). As will be seen later in this section, attempts to build this overarching strategy have fallen short. Likewise, the linkages between the different portions of IO are not nearly as strong as Arquilla or Ronfeldt advocated. So unfortunately it appears from the research participants that a lot of the 'promise' of the power inherent in information and for that matter IO, is still not realised by the United States government.

2.5.3   The Role of Information on Government Organisations

For a number of years, academics have tried to analyse these changes, with respect to the power of information. For example, RAND embarked on a three-year long study of the effects of the information revolution on governmental organisations. Key discussion areas included the political, governmental, business, financial, social and cultural dimensions. Such changes were noted by the RAND analysts as occurring for two general reasons:

- Traditional mechanisms of governance (e.g., taxation, regulation and licensing, etc.) are becoming increasingly problematic, as the information revolution allows action beyond the reach of national governments.
- The distribution of political power is changing, as new non-state actors are being empowered by the information revolution, in the business, social, and political realms, at the sub-national, trans-national, and supra-national levels.

These academics believed that governments will have to find mechanisms to deal with these changes and with these new actors for different nations often take different approaches. How this is accomplished will, of course, define the roles of power and information in the nation state, and especially the United States as it relates to this new environment. Other RAND publications about information have followed as well, including a study in 2000 entitled, *Information and Biological Revolutions: Global Governance Challenges* (Fukuyama and Wagner, 2000). This text examines the new elements confronting political leaders in the post-Cold War era and offered suggestions for change. An additional study by Libicki (2000) on the governance and development of the global information grid was published that same year. In an analogy to this research, Libicki debates whether the United States Air Force should adopt a top-down centralised approach to management of these services, or a more decentralised bottom-up approach. In this particular case, Libicki believes that it is inappropriate for the military branch to develop an enterprise-wide management control (or a top-down approach) at this time. This series of thoughts were very similar to data derived from other research participants, but there is still somewhat of a disconnect in all of these RAND studies, because they fail to acknowledge the large gap between their proposed strategic doctrines of IO and the day-to-day reality of tactical operations. So there still exists a serious difference between what many academics believe is possible to do with respect to IO and what in fact the United States government is willing to do in practice. This delta still exists today as evidenced by the data gained from the interviewees in this research project.

However RAND was not the only semi-government agency interested in the power of information. The Armed Forces Communications and Electronics Association was also busy publishing a series on Information Warfare over this four year period as shown below:

- *CyberWar: Security, Strategy and Conflict in the Information Age* (Campen, Dearth and Goodden, 1996)
- *CyberWar 2.0: Myths, Mysteries and Reality* (Campen and Dearth, 1998)
- *CyberWar 3.0: Human Factors in Information Operations and Future Conflict* (Campen and Dearth, 2000)

Written as an anthology, these books emphasise the evolution of the strategic and theoretical analysis of the warfare area since 1996. It is interesting to notice how Armed Forces Communications and Electronics Association also stressed the same key areas as Arquilla and Ronfeldt, namely perception management and computer network operations. Two of the editors, Douglas Dearth and Dr Dan Kuehl, were interviewed on multiple occasions for this research and contributed valuable insight into the changing role of information with respect to power in the United States government. Unfortunately for a variety of reasons, this series was discontinued after the third edition, and no follow-on books are likely to be published. Offering an opportunity for 20-25 respected practitioners of the tradecraft, to update the general public and academic community on IO activities, this series has been sorely missed. It was in the original Cyber War manuscript, that one can see much of the hope and promise that constituted the 'Revolution in Military Affairs' movement of the mid 1990s. Overall the contributors of this series appear to be generally optimistic about the future of information warfare, but there was also cautionary tales, especially with talk about the threat of Cyber War. However that being said, in all aspects, this was another series of seminal publications, a set of ideas that framed much of the discussion for IO when it was only starting to be recognised as a unique warfare area. The editors of the original Cyber War book were also fortunate to be able to include an introduction by Thomas Rona, the original creator of the term Information Warfare. Developed two decades earlier, he recognised the value of information and data within the context of nuclear war and the bipolar threat that existed at that time. Rona tied in the threats to the civilian infrastructure from IO, which was quite unique, and led to a nice dialogue among the disparate commentators in this series. He also understood that changes in information brought threats not to just the warriors in the field but civilians and society as well.

Therefore from these books, articles and interviews, it can be understood that there are many factors in the equation of power with respect to the changing role of information. Some of these scholars believe that information is now the most important element of power, because it is the most fungible or transferable of the different fundamentals of influence, which would relate to the fundamental shift, alluded to throughout these publications on IO. There are concerns by some of these authors that the rise of information as element of power is diminishing other facets and concepts of power such as sovereignty. As noted by Rosecrance in *The Rise of the Virtual*

State, the fungibility inherent in information gives the average citizen much more power than they had previously in the industrial era (Rosecrance, 1999). At one's fingertips is information previously only accessible to the rich and powerful. Communication around the world has increased so much that now country to country dialogue is not solely limited to diplomats but is instead conducted through millions of other conduits. These immense changes, as noted by Rosecrance, allude to the difficulty that countries, such as the United States face in this new environment. Likewise, Arquilla and Ronfeldt (1999) also discuss these same issues, most specifically the role of information in the conduct foreign policy, as another element of power in conjunction with military, diplomatic and economic elements. These academics also acknowledge that it is exactly this ability to manipulate and manage the power of information, which makes concepts such as IO so useful but also so much a destabilising factor to the status quo. For what all of these authors understand and relate in their publications is how in today's environment, groups, organizations, nation-states and even individuals can now influence policy at the systemic level simply by using information. This was not necessarily the case during the Cold War, but the vast explosion in technology, particularly in telecommunications and media propagation over the last 15 plus years, has forever changed the control over this power paradigm (Arquilla and Ronfeldt, 1997a).

This change and recognition that informational power in the form of IO, is changing the way that the United States conducts its military and foreign policy initiatives can also be seen in other articles and books besides the official publications already mentioned (Joint Publication 3-13, 1998; US Advisory Commission, 2000). Fulton (1998) stated as much and describes how the State Department must change to adapt to the influx of informational power. For probably more than any governmental bureaucracy, the State Department had a near monopoly on control of communication between governmental leaders, but with the advent of the internet, 24 hours news channels, satellite television and worldwide newspapers, that is certainly no longer the case today. Unfortunately, few if any of Fulton's suggestions were followed through because in 2000, the U.S. Advisory Commission on Public Diplomacy published a similar follow-on study entitled *A New Diplomacy for the Information Age*. Unfortunately again, little was done to change this federal agency and today, the State Department continues to grapple with these changes. Per the research participants' comments, few if any of any of these studies or critical recommendations for changing this cabinet agency have been implemented. But what is also

interesting, is that these studies all mirror the Defense Department's voluminous output of publications during the same time period. For instance, Fulton's tome was in effect a corollary to Joint Publication 3-13 published the same year. The joint publication will be explained in the next section, but in essence, both of these documents were attempts by their respective federal organisations to come to grips with the power of information, and incorporate it into their processes and methodologies.

There are obviously other writers on this subject, with a large number of books talking about IO, Computer Warfare, Cyber Security and Net War having all been published in the last decade. For example, Adams (1998) forecasted a multitude of changes in the information world due to the increased connectivity of the globe. While Adams did not emphasise globalisation as much as connectivity, there is clearly a linkage between the two as shown by Stephen Flanagan, Ellen Frost and Richard Kugler in their National Defense University series on globalisation and national security. Entitled *Challenges of the Global Century: Report of the Project on Globalization and National Security*, this two volume set which features 50 chapters on a far ranging set of topics including strategic implications and emerging priorities for the United States, as well as the challenges ahead, including both global and regional trends (Flanagan et al, 2001). Both of these books are emphasising the new roles of information around the world and how it is changing the dynamics of power. In addition, this 18 month project confirmed some of the key themes with respect to the changing role of power and information as they effect the United States government, as noted by the interviewees, to include the impact of the media and a bifurcated world order.

Other authors and social scientists have also examined the effects of information as it has affected the United States government, and come to their own interesting conclusions as well. One of these is Gleick (1999; 2002), a journalist, who offered a rather unique perspective on not only the evolution of the information society, but also its cumulative changes to people and the way that they live in the American culture. Blending science and cultural journalism, Gleick like Adams offers different perspectives on the effects of the increased information flow, and how it is speeding up aspects of life in the United States. Unfortunately Gleick is more of an observer of the changes brought on by the Information Age and therefore offers no concrete solutions for improvement by the United States government. Rheingold (2000: 2003) is similar as well; both of these publications comment on the incredible changes in society around the world as a result

of information technology and how this new found power has empowered these citizens to conduct new initiatives. Once again, there is little useful advice or recommendations for changes on how to best utilise IO in this new environment. However from an author's perspective, what makes these two author's so useful with respect to IO, is their ability to cobble together disparate ideas that range across a wide spectrum of the information environment and bring them together in one place, that is commercially available to all. It is exactly these kinds of books that senior level government leadership can read and try to get a feel for how fast the world is changing around them. In addition, these real-world examples are incredibly useful to help explain the paradigm shift that is occurring with the information revolution that may not be readily apparent to all.

2.6   The Rise of Information Operations

Even with the publication of all of these books and articles, IO is still not understood very well. Too many lay people, IO is simply computer warfare, but as has been emphasised, IO is really about much more than that. In the United States, IO is an attempt by the federal bureaucracy to develop a strategy to use all of the capabilities of information to affect the many issues that it deals with in the post-Cold War era. With these changes in the elements of power, has come the realisation that militarily the United States could not solve all of its problems through kinetic means. IO is therefore an attempt to bring these different facets of power to bear on an adversary in a synergistic manner to achieve our national objectives. For a long time, it was hard for the Department of Defense to address or even intelligently discuss the concepts of IO. This was because there was no common, or readily available directive or publication available. This led to questions and confusion regarding definitions and lexicon that could not be fully addressed until the release of a coherent strategic policy, in the form of Joint Publication 3-13, *Joint Doctrine for Information Operations* published in October 1998. For the first time, the Department of Defense was distributing in an unclassified document, the doctrinal principles involved in conducting IO, which was obviously was a key milestone in the development and use of IO within the United States government .

The real key as emphasised by many participants to making IO effective across the federal bureaucracy per Joint Publication 3-13, was to ensure the goal that the horizontal integration and coordination of the interagency organizations are conducted early on mainly that

is in the peacetime environment. IO can be a very effective tool for shaping the environment in the pre-hostilities phase, so that the actual need for hostilities may be avoided or minimised. However that is not always possible. There are still differences in definitions, notwithstanding the publication of Joint Publication 3-13. This is due to the fact that while IO was explicitly defined in 1998 by the Department of Defense, the concepts of information warfare go back earlier, to two different Department of Defense directives issued in 1993 and 1996 respectfully. In addition, there are other subtleties between these two warfare or mission areas as well, with the primary doctrinal difference is that information warfare contains six elements and is mostly involved with the conduct of operations during actual combat, while IO on the other hand, includes these six capabilities and two sometimes integrated or related activities. Likewise, IO is not only broader than information warfare, but is also intended to be conducted as a strategic campaign throughout the full spectrum of conflict from peace to war and back to peace, across the federal bureaucracy. Thus for all these reasons, IO is considered much more comprehensive than information warfare, and it is in IO that the full integration across government agencies and with private industry must occur (Joint Publication 3-13, 1998).

Information Warfare Elements	Information Operations Capabilities	Related Activities
Computer Network Attack	Computer Network Attack	Public Affairs
Deception	Deception	Civil Affairs
Destruction	Destruction	
Electronic Warfare	Electronic Warfare	
Operations Security	Operations Security	
Psychological Operations	Psychological Operations	

The elements, capabilities and related activities of information warfare and IO as listed above, are separate and discrete warfare elements. Most have very old traditions and long-standing histories that do not necessarily mean that every action conducted in these areas is always associated with IO. There are elements of destruction that are not part of an IO campaign, likewise not every public affairs activity has to be tied to information operations. In reality, all elements and their components of national power, in order to succeed, should be integrated into a satisfactorily planned, designed and executed information strategy. If this is not done, than the United States may not attain its national security goals in the new millennium.

The concept of IO is intended to use these different capabilities and related activities to

produce effects in an integrated fashion. Therefore, while one can try to use all eight capabilities and related activities to conduct an operation, more often than not, a good IO plan will probably only incorporate a few of these warfare areas (Giessler, 2002). The basic idea is that one does not always have to resort to kinetic means, and instead for IO to work properly, the operators must understand the environment, assess their interests and the adversary's pressure points, to use whichever capability or related activity that will best affect the adversary. IO is thus much more of an intensive study of not only your adversary, but also your own forces, which is more than perhaps many current military commanders have grown accustomed to (Kuehl, 2002).

2.6.1   Information Operations Development in the United States

As mentioned earlier, the use of information to influence foreign audiences is not new. Throughout this century, the United States has attempted to use information namely in the form of public diplomacy as a tool to influence foreign audiences around the world. President Woodrow Wilson created the Creel Committee on Public Information in 1917 and during the Second World War, President Franklin D. Roosevelt established the Office of War Information, which included the Voice of America (Campden and Dearth, 2000; Armistead, 2003). This agency and its overseas component were the forerunner of the United States Information Agency, which was for almost 50 years was the home to public diplomacy within the federal structure. Defined as government activities intended to understand, inform and influence foreign publics, public diplomacy is one of the forms of IO, along with perception management, strategic communications and influence campaigns that comprise the crux of this thesis. It was this strategic use of information that became a key factor of United States foreign policy in the Cold War, where information was disseminated to worldwide audiences by television and radio broadcasts, in the form of a state-to-state dialogue. And we were not alone. Nations throughout history and to this present day have tried to use information to influence other countries as well as their own citizens since time immortal. How successful they were in those attempts often depended on a number of factors including cultural and psychological biases, as well as their means and methods of technology used to transmit that information.

These ideas are not new. The *Science of Coercion* (Simpson, 1994) and *Psychological Operations and Political Warfare in Long-Term Strategic Planning* (Radvanyi, 1990) are only two of the more prominent publications that offer detailed academic examinations of

psychological operations portion of IO. Considered the most difficult to execute, and perhaps hardest to understand, it is these perception management topics or the 'softer' side of IO which seems to need the most future research as indicated by the various authors of these tomes. But there is a big difference between offering future research topics as opposed to concrete solutions to ensuring the tactical reality of IO as a mission area. So in many aspects, both of these texts fall short of offering a viable solution to incorporating IO into the day-to-day operations of IO. This aspect was also enumerated by a multitude of the research interviewees who suggested that it was the 'softer' side of IO, where the greatest gap existed between strategic policy and tactical reality. So it is good that the perception management or strategic communications portion of IO policy, appears to be changing the most in the recent version of the new Joint Publication 3-13, as the Department of Defense comes to the realisation that their doctrine must more closely match their capabilities.

However, IO in the United States government is not just about perception management and in fact as mentioned previously, computer network operations play a major role as well. With the tremendous advances in computers and technology, the nature in which governments and countries interact has changed dramatically as well. A number of books have attempted to address these issues, some of which were written by authors previously mentioned. For example Arquilla and Ronfeldt (2001) published another book *Networks and Netwar* in which they describe the future of terror, crime and militancy. It follows the theme of their earlier work, *The Advent of Netwar*, with a collection of essays from a distinguished collection of authors mainly written from a social Netwar perspective. A good update to their previous books, it is in this new publication that Arquilla and Ronfeldt were able to expand on the emphasis on the importance of the networks, as an enabling framework for IO. Luckily the editors were also able to add an afterword, in the months after the events of 9/11 to tie together their themes.

Likewise, Owens and Offley (2001) presented their ideas on ensuring the adequacy of United States military power through more cooperative uses of information, joint operations and more emphasis on flexibility by the respective services in their book, *Lifting the Fog of War*. Not a pure IO book, Owens and Offley did however tie in some of the strategic concepts associated to this warfare area, and highlighted the follow-on efforts from the earlier revolution in military training efforts that are especially illuminating from an IO perspective. Other authors have also attempted to write about the development of IO within the United States government

as well, including Alberts (1996). Later revised in 2002, this pamphlet, is part of a series funded by the Department of Defense, fostered a debate and helped to frame the course of changes within the United States military. In this book, a number of strategies are debated about the right course to insure that America has the best military for future operations and how IO plays a major role in much of this debate. The overall consensus from this discussion is that the strategy of IO must be very closely related to actual conduct of warfare (Alberts, 2002). Likewise, Hall (2003) generally agrees with both of these assessments in his book *Stray Voltage: War in the Information Age*. He also notes the same tendencies in the United States government as in this thesis, namely that there is a significant disconnect with regards to the maturation of strategic IO within the federal bureaucracy. In addition, and this is significant, Hall is knowledgeable enough from a series of tours within the Department of Defense and United States government to understand that this new warfare area cuts across many operational boundaries and that it is not just enough to concentrate on the technical aspects of IO to be successful, and that the 'softer' aspects must be understood as well.

Moving on to other 'strategic' aspects of IO policy within the United States government, a number of authors have written books on the technical aspects or the 'harder' side of IO. Denning (1999) formerly of Georgetown University and now with the Naval Postgraduate School, linked the computer network operations with IO in her book *Information Warfare and Security* In this seminal publication, she addressed a number of information security concerns including information assurance, and was one of the first authors to lay out in an unclassified forum, these key aspects of IO. Two other publications that were mentioned earlier, *The Information Revolution and National Security* (Copeland, 2000) and *Strategic Warfare in Cyberspace* (Ratray, 2001) are similar to Denning's work in that the authors also compared the development of current national strategy with efforts to coordinate cyber policy and offered recommendations for the future. All three of these books analysed the links between power, information, doctrine and security policy, and are good sources to connect the 'harder' and 'softer' aspects of IO. In addition, these books are also important because it was during this period in which the Department of Defense was laying out the current policy on IO in the form of Joint Publication 3-13, as well as standing up the key IO organisations that will be described later in this chapter.

On a final note, a significant development for IO from a theoretical standpoint was a doctoral dissertation by Dunn (2002) that was published by the Swiss Federal Institute of Technology in Zurich. Entitled *Information Age Conflicts: a Study of the Information Revolution and a Changing Operating Environment*, the prime difference in her approach from this thesis was the use of structural realism as her theoretical construct. Dunn confronted the dilemma of the inconsistencies in her theory by trying to build a model that delineated key challenges associated with the information age. She examined all of the traditional international relations theory and one by one, dismissed them as inadequate to truly explain the changing environment. Even her proposed choice of structural realism, she admitted had major flaws in its use as a tool for modelling the power of information, and so in some aspects Dunn was restricted in her ability to adequately explain IO. In addition, she also understood the constraints of all forms of realism, which maintain the state as the primary actor. For as noted earlier, because of the radical changes in the power structure within this new era, the state is no longer the primary player in the information age. So it was this reason and others that will be delineated in later chapters that it was decided not to use an international relations type of theory as the backbone for this thesis and instead the theoretical construct proposed for this dissertation utilised Soft Systems Methodology, because it was able to accurately model the power of information and how it is radically changing the traditional power structure around the world.

2.6.2   From Hiroshima to the Berlin Wall – The Cold War Era

As explained earlier, IO is not new and there are great examples of the different parts and capabilities of IO with the United States government. Historical data abounds on the capabilities over the last 60 years, with a good illustration as shown below from the immediate post World War II era. In this specific case, the Truman Administration wanted to strengthen and coordinate the foreign information measures in order to attain United States national objectives, specifically from a perception management perspective. As an attempt to stop the spreading spectre of Communism, the National Security Council passed an executive directive, National Security Council 4, *Coordination of Foreign Information Measures* on 17 December 1947 (NSC, 1947). This policy was expressly designed to combat the extensive propaganda campaign currently being conducted by the Soviet Union at that time. Written to exploit and promote the message of economic aid that the United States was delivering to a number of foreign nations, especially in

Europe, this policy directive was also crucial in the interwar period, for there was no existing government agency which was tasked to conduct strategic information campaigns for the American public. Therefore this policy document was meant to serve as an interagency coordination mechanism, led by the Secretary of State.

Coincident with these efforts by the National Security Council to develop organic information programs was a concern within Congress about the State Department's ability to propagandise United States citizens as well as foreign nationals. Therefore new legislation was enacted to ensure a separation existed between these two capabilities. It is somewhat amazing in this era of a throw away and disposable society, that much of the government agencies discussed in this paper are actually constrained by a law more than half a century old. In fact, the *Smith-Mundt Act* which was passed in 1948 specifically forbids the United States foreign policy apparatus and in particular the State Department from conducting propaganda on American citizens. Much of this concern by Congress was in direct response to the immediate post World War II period, in which the conduct of public affairs and psychological operations within the United States government security structure was unrestrained. There were operations conducted by the Office of War Information and the United States Information Service, inside and outside of the continental United States that quickly raised a number of questions about the propriety of these activities. Therefore to ultimately coordinate the activities of the foreign affairs organizations, the United States Information and Educational Exchange Act popularly known as the Smith-Mundt Act, was enacted as a sweeping legislative bill that directed among other items, the forbiddance of the State Department from conducting propaganda, psychological operations or public affairs on the American public. Interestingly enough, today it still stands and is in effect as a major restraining component on IO efforts within the United States government.

This new act created a serious dilemma for the State Department in 1948, because it created a dichotomy between existing policy and operations. The new Assistant Secretary was supposed to conduct public diplomacy with a target audience of foreign nationals abroad, and was also supposed to manage a public relations campaign for the State Department, aimed for domestic consumption. There is an extremely fine line between building information tools on the same subject for two different audiences (Bernhard, 1997). To make matters worse, the Smith-Mundt Act actually made it illegal to conduct public diplomacy on the American people and directed that separate budgets exist for public diplomacy and public affairs. So not only did

these staffs have to differentiate products between their different audiences, but they also needed to do so under separate operating authorities and budget tasking. This was too much to ask, and so a decision was made in 1952 to stand up a new organisation, the United States Information Agency, whose sole purpose was to create a public diplomacy arm that could in fact conduct these activities legally, but only abroad and then only to foreign citizens (Ibid).

Thus for almost 50 years, the United States Information Agency was the main organisation responsible for the conduct of public diplomacy and information campaigns by the federal government. Formed in 1953 under Reorganization Plan No. 8 of the Smith-Mundt Act, this new activity encompassed most of the information programs of the State Department at that time (Armistead, 2003). The lines of authority for this new agency when it was created were unique, not only because it operated as an independent organization, with the director of United States Information Agency reporting to the President through the National Security Council, but also because the director coordinated his own separate budget. These factors and resentment of their freedom within the agency would become major elements in later reorganisation efforts by the State Department over the next five decades.

Moving rapidly forward 25 years, we see that the development of IO as a major military doctrine in the United States government is really a relatively new phenomenon, and while the first known use of the term information warfare was in 1976 by Dr Tom Rona, much of the critical thinking about this subject did not begin until the early 1980s (Campden and Dearth, 1998). This was due primarily to the size of the former Soviet Union's military, which greatly concerned United States military analysts and planners. From 1975-85, the former Soviet Union often outnumbered United States conventional forces 3:1, and, while the United States may have had a qualitative advantage, there are times when only sheer numbers count. In the Pentagon, military strategists were looking for methods to cut down on the former Soviet Union's advantage by attempting to counter traditional strengths with asymmetric non-nuclear attacks. In addition, these analysts noted that the former Soviet Union relied heavily on electronic warfare or *radioelectrionyaborba* (Radio Electronic Combat) in much of its doctrine, and there was a feeling that the United States government must combat this threat as well (Munro, 1991). It was in this era, that some of the early ideas about effects-based planning or IO began to evolve.

In addition, efforts were also underway during this period to strengthen the use of public diplomacy as a tool for the United States. On 6 March 1984, the Reagan Administration

published a policy entitled National Security Decision Directive 130, *US International Information Policy* (NSDD 130, 1984). This document was envisioned to be a strategic instrument for shaping fundamental political and ideological trends around the world on a long-term basis and ultimately affecting the behaviour of governments (Campden and Dearth, 2000). Written by the staff of the 'great communicator', it is not surprising that President Reagan would believe in the transformational power of information. Recognizing that a strong international interagency capability was needed, National Security Decision Directive 130 was a successor to National Security Council Directive 4.

2.6.2   The Revolution in Military Affairs and the Global War on Terrorism

These changes during the Reagan Administration were just the beginning of a maturation of IO policy in America. It was in the first Bush Administration and the demise of the Soviet threat to the continental United States in 1989 that the greatest shift in policy with respect to IO began in the United States government. From the lessons learned during the experiences from the Cold War, it has became clear to war-fighters that the side that controlled the most information, and retained the ability to accurately manipulate and conduct an influence campaign was going to be victorious (Owens and Offley, 2001, p.100). This was most apparent immediately after the fall of the Soviet Union, when strategic planners at the Joint Chiefs of Staff began to think and write new strategy, most of which was highly classified, on the use of information as a war fighting tool. In fact, the first document, Department of Defense Document TS3600.1 was kept at the Top Secret level throughout its use, due to the restrictive nature of this new strategy (TS3600.1, 1992).

While this publication started a dialogue on information warfare within the Department of Defense, its classification ultimately restrained a more general doctrinal exchange. Thus the need for a strategy to fit these revolutions in technology still existed, so a new concept entitled Command and Control Warfare was quickly developed. Officially released as a Chairman of the Joint Chiefs of Staff Memorandum of Policy 30 *Command and Control Warfare* (8 March 1993), this document laid out for the first time in an unclassified format, the interaction of these different informational disciplines, which when combined together could give the war-fighters the information warfare advantage (CJCS MOP 30, 1993). Command and Control Warfare as originally defined, contained the following five pillars:

- Destruction
- Deception
- Psychological Operations
- Operations Security
- Electronic Warfare

Intelligence supported these five pillars in order to conduct both offensive and defensive aspects of this capability. While some quarters of the military greeted this new concept of warfare with enthusiasm, others were wary of any new doctrinal developments. However, the ability to integrate these different military disciplines to conduct nodal analysis against enemy command and control targets was also highly lauded as a great improvement (Ibid). Many units and all four military services in the United States developed command and control warfare cells and began training in this new doctrine throughout the mid-1990s. But there was a conflict between the Joint Staff and Defense Secretariat doctrine, since information warfare was a much broader attempt to tackle the issue of information as a force multiplier, while command and control warfare was more narrowly defined to apply only to the five pillars mentioned above (CJCS MOP 30, 1993; S3600.1, 1996; TS3600.1, 1992; JP 3-13, 1998). The fact that the United States was writing strategy to conduct operations in peacetime against nations was considered very risky, therefore official information warfare policy remained highly classified throughout much of the 1990s (Pilecki, 2000).

The United States military also recognized the need to develop commands and agencies to conduct these types of warfare in the information age and therefore, even though doctrine was still in the formative stage, organisational changes began to occur in the early 1990s. The Joint Electronic Warfare Centre at Kelly AFB in San Antonio, Texas, was renamed the Joint Command and Control Warfare Centre in 1993, and would later be renamed the Joint Information Operations Centre in October 1999 and finally the Joint Information Operations Warfare Centre in 2004. The uniformed services also created a number of other new agencies beginning in 1995, to include:

- U.S. Air Force - Air Force Information Warfare Centre
- U.S. Army - Land Information Warfare Activity – later changed to the 1st Information Operations Command
- U.S. Navy - Fleet Information Warfare Centre – renamed the Naval Information Operations Command and now subordinate to Navy Network Warfare Command

In addition to organizational changes by the services, new courses and schools were also being developed to teach new tactics. The National Defense University created a School of Information Warfare and Strategy in 1994, that was a full 10-month-long academic curriculum designed to immerse the National War College students in the academic theory of information warfare. Held for two years, the National Defense University graduated 16 students the first year and 32 in the second. However, the course was subsequently cancelled in 1996. This may have been due to a belief that information warfare instruction needed to be disseminated to a wider audience, so shorter courses and classes were developed instead, to teach a larger audience of National Defense University students. These existed for several years, including a five-day intermediate information warfare course for mid-grade officers and a two-day information warfare overview for senior officers, but by mid-2003 all were eventually cancelled (Giessler, 2004). IO was still taught at the National Defense University as a series of embedded lectures in different curricula. In 2008, there was also movement to reinstate IO as a major subject topic at this institute, with the establishment of a Masters level program. The other official Department of Defense joint course on information warfare is also taught at National Defense University's Joint Forces Staff College, formerly the Armed Forces Staff College in Norfolk, VA. Held for two weeks, seven times a year, the current Joint Information Operations Staff and Operations Course is aimed primarily at mid-grade officers or civilian equivalent government personnel, who are serving in an IO cell or billet with a joint agency. A planner's course that takes these students to the next level was also developed in 2001 and is still widely taught.

Thus, doctrine continued to develop after the publication of Command and Control Warfare doctrine in 1993. The formation of information warfare agencies and commands in the 1995 – 1996 period, not only filled voids in the services but also helped to resolve the conflict in the development of information doctrine and policy within the United States government. There was a concerted push for declassification and better understanding of these concepts within the Department of Defense during this time frame, which resulted in the publication of Department of Defense Directive S3600.1, *Information Operations* (9 December 1996). By downgrading this document to the Secret level, Department of Defense opened IO to a wider audience. In a related effort, the Defense Science Board also published its report on *Information Warfare – Defense* in November 1996. Together these two documents attempted to clarify the differences between this older doctrine, and for the first time introduced the use of computer network attack

as an IO capability (S3600.1, 1996). However, there were other issue areas that referenced or alluded to IO in the unclassified arena during this time period as well to include Presidential Decision Directive 56, *Managing Complex Contingency Operations* in May 1997. Written after the debacles in Somalia, Haiti and Rwanda, this directive was developed to integrate political, military, humanitarian, economic and other dimensions of United States government planning for complex contingencies, which included the informational aspects. Widely lauded at the time, subsequent studies and commentary reflect that in fact, little was changed by this Clinton Administration policy directive (Scarborough, 1999; Hamblet and Kline, 2000).

Thus, the formation of information warfare agencies and commands in the 1995-1996 time frame, also somewhat helped to resolve the conflict in the development of IO doctrine and policy within the United States government. However, since the Department of Defense Directive S3600.1 was still classified Secret, it also limited greater discussion on the differences between IO and information warfare. But this constraint was somewhat muted because the Department of Defense also presented in 1996, a white paper written to establish a vision for how the United States military will operate in the uncertain future entitled Joint Vision 2010. For the first time, in an unclassified format, IO was formally defined as 'those actions taken to affect an adversary's information and information systems while defending one's own information and information systems' (Joint Chiefs of Staff, Joint Vision 2010, 1996, p. 69). To implement this vision and achieve 'full spectrum dominance,' four operational concepts were introduced in this publication.

- Dominant manoeuvre
- Precision engagement
- Full dimensional engagement
- Focused logistics

The essential enabler for all four of these concepts was doctrinally encapsulated as information superiority (Ibid). Defined as "the capability to collect, process, disseminate an uninterrupted flow of information, while exploiting or denying an adversary's ability to do the same," information superiority consists of three components of which information operations was a prime factor. In addition to these doctrinal changes, the period of the mid-to-late 1990's was also a time of early experimentation. In the same time period, the aforementioned Joseph Nye and retired Admiral Bill Owens were also recognising that the United States should take advantage of its information superiority in the post Cold War era, and published an article in

Foreign Affairs, entitled 'America's Information Age'. This piece collaborated much of what the Department of Defense was attempting to do with their Revolution in Military Affairs, in this case by describing the move by the country into a 'Third Wave', away from an industrial nation and more toward an informational society (Nye and Owens, 1996). But once again, one sees in this particular article, the advocates for IO developing a high level strategic policy, but little information on how to actually achieve these goals. In addition as was noted in this article, with these perceived advantages came threats as America is most often recognised as the nation with the most vulnerability from a cyber attack. Other authors followed Nye and Owens beliefs, advocating a radical change in the manner that the United States government could conduct warfare. These concepts were cited by authors as diverse as Winn Schwartau's comments on an 'Electronic Pearl Harbor' to Adams vision on the future of war, and the advent of 'NetWar', 'Strategic Information Warfare' and well as the concept around strategic warfare in cyberspace (Schwartau, 1996; Adams, 1998; Arquilla and Ronfeldt, 1996, 2000; Molander, 1998; Ratray, 2001). However, the theoretical disconnect in all of these articles continued to exist, because the changes advocated by these authors were often too radical and too fast for the Department of Defense to carry out.

For example, Schwartau (1996) is probably at least as well known for his book on IO, *Information Warfare: Cyberterrorism – Protecting Your Personal Security in the Electronic Age*, as opposed to his testimony before Congress, and his annual IO conference, INFOWARCON, that was held each September in Washington, DC until 2003. His efforts to heighten awareness about IO often seemed over the top, but he believed that he was successful in getting the American population to understand about this new threat (Schwartau, 1996, 2003). The problem that resulted though from these methods was once again a disconnect between lofty promises of new and wonderful capabilities with respect to IO and the reality of what could actually be done, especially in the early stages of IO between 1995-2001. In the author's opinion, this sensationalism of IO in that time period actually did something of a disservice to the emerging warfare area, because it oversold the reality of what IO could do. Unfulfilled promises then led to dissatisfaction, which may have led to disbelief. Ultimately hype needed to be separated from reality, in order to move ahead with the 'real' capability and the author believes that this has been accomplished over the last decade as IO has been 'operationalised' and brought into the mainstream of Department of Defense operations.

Likewise James Adams in his book *The Next World War: Computers are the Weapons and the Front Line is Everywhere,* also to an extent oversold the problem (Adams, 1998, 2000). His publication was more of reflection and observation of trends, much like Rheingold and Gleick's works, which are mentioned earlier in this chapter. But what Adams did do, which the author felt was beneficial, was to show that the traditional boundaries of warfare, had been removed in the information age, and that no longer could the American citizens count on the military to protect them. While Adams was not the only author to understand this important point, his book was one of the more useful in explaining the consequences of this new environment. Likewise, the same can also be said of Arquilla and Ronfeldt's book *The Advent of Netwar.* One of a series of publications by these prolific authors on this topic, what distinguishes this book from their others, is the emphasis on a new kind of warfare, one fought by networks against other networks (Arquilla and Ronfeldt, 1996). Interestingly enough, this concept has also been adopted by the US military, in particularly the US Navy. Entitled 'Network Centric Warfare' and championed by retired Vice Admiral Arthur Cebrowski, this idea has gone a long ways in at least one service towards operationalising IO (Cebrowski, 2003). This is very interesting, because in this case, one actually had a concept that was advocated and accepted by the Department of Defense, with regard to the utilisation of IO. As noted in his interview with the author, Vice Admiral Cebrowski echoed many of the key points in these books, when he discussed these huge changes that were occurring, especially as power shifts from the industrial age to an information era.

Another of these early advocates of IO was Roger Molander who also expressed similar thoughts not only in his book, *Strategic Information Warfare Rising,* but likewise during his interview with the author (Molander, 1998, 2003). He understood that the threats in this new environment were not from traditional adversaries but instead from a variety of organisations and entities that were not previously thought to possess this type of capability. While much of his book focused on the cyber threat, this author believes that the intervening five years between its publication and the interview for this research has shifted some of Molander's views. Obviously the events of 9/11 had occurred as had the invasion of Afghanistan and Iraq, all of which may have contributed to Molander's emphasis on the 'softer' side of IO, especially strategic communications during his interview in 2003. It would have been interesting to see if the same shift had occurred with Greg Rattray as well. The author of *Strategic Warfare in Cyberspace,*

this US Air Force officer's PhD dissertation from the Massachusetts Institute of Technology was also completed as was his interview for the research, before the events of 9/11 (Rattray, 2001). Rattray's thesis had a huge emphasis on Cyber Warfare, and one has to wonder how this book might have been changed if it had been published later, after September 11[th], 2001. Rattray though unlike virtually all of the other authors mentioned earlier, did however get a chance to operationalise his theory, when he was selected to be a commander for a United States Air Force IO Squadron in San Antonio, Texas in 2003.

2.7   The Latest IO Policy Changes: The IO Road Map

In these next two sections, a very detailed review of the most recent changes in IO policy and organisations will be undertaken to compare to the recommendations that constitute the Conceptual Models developed in the last chapter. To begin this process, undoubtedly the most significant recent policy change that impacts IO, from an American standpoint, was the publication of the *IO Road Map* (Department of Defense, 2003). This directive proposes a way ahead for the United States military forces specifically with regard to the future of IO. The *2001 Quadrennial Defense Review* identified IO as one of six critical goals supporting Department of Defense transformation, and it set forth the objective of making IO a 'core capability' for future United States forces. The *IO Roadmap* further identified three critical areas in which United States capabilities must be improved. The first of these was an improved ability to 'fight the net', and this desire stemmed from the realisation that in an era of 'network centric warfare', protecting the networks on which the Department of Defense depends is an essential to United States military capability. The second of these critical areas was the need to 'improve' psychological operations in the Department of Defense. This translated to making it more integrated with and supportive of national level themes and objectives, as well as to enhance United States ability to impact adversary decision-making. Finally, the third crucial area that needed to be improved was the need for the United States forces to conduct offensive operations in/via the electromagnetic spectrum – to include both computer network attack and electronic warfare capabilities.

From these three critical areas, the IO Roadmap further recommended a series of actions to improve overall offensive IO capabilities of the Department of Defense. The first of these was to develop a common understanding of IO, and it offered a new definition of IO that would

eventually be issued to the joint world doctrinally via a revised *Joint Doctrine Pub*lication *3-13* and a revised Department of Defense *Directive 3600* (JP 3-13, 2006; DoD S3600, 2006). The *IO Roadmap* also stressed the need to both consolidate oversight and advocacy for IO, while simultaneously delegating capabilities to the Combatant Commanders, and to do this the US Strategic Command's IO role was expanded and strengthened, to the point where the Strategic Command became in effect 'the IO command'. This need to create a core of trained and educated IO personnel, and the requirement to improve the ability to analyse IO operations and effects, were both cited in the *IO Roadmap's* recommendations. In addition, there were also suggestions for the improvement of each of the five 'core competencies' of IO as defined by the Roadmap – namely computer network operations (which includes attack, defense and exploitation), electronic warfare, military deception, operations security and psychological operations. The need to clarify the 'lanes in the road' between psychological operations, public affairs, and public diplomacy was also emphasized as well. Finally, IO's place in the budget process needed increased transparency, to clarify what resources IO actually had and what would be needed to provide a stronger, more robust and more comprehensive set of capabilities. All in all, the full *IO Roadmap* laid out 57 specific recommendations designed to develop specific elements of the overall recommendations as discussed above.

The new definition of IO published in the *IO Roadmap* was very much centred on the military aspects of information, and was almost a verbatim return to that contained in the early 1990s doctrine for command and control warfare, defining IO as 'The integrated employment of the core capabilities of electronic warfare, computer network operations, psychological operations, military deception, and operations security, in concert with specified supporting and related capabilities, to influence, disrupt, corrupt or usurp adversarial human and automated decision-making while protecting our own' (U.S. Department of Defense, 2003, p. 11). This new definition was a significant narrowing of IO's scope downward from what had been laid out in the 1998 *Joint Doctrine Publication 3-13*, which defined IO as "actions taken to affect adversary information and information systems while protecting our own" (JP 3-13, 1998). That earlier approach was much broader and more inclusive of other federal IO activities, and tended to focus on effects rather than means. It was also more difficult to resource. Traditionally the military services are responsible for 'organising, training, and equipping' forces, and they complained that nothing in the original 1998 definition could be directly tied to military

programs. The new *IO Roadmap* definition, on the other hand, could be immediately tied to several long-standing and well integrated force programs. The new definition also included several controversial elements, most of which were related to the word 'influence'. The 'lanes in the road' issue contained in the recommendations was the most controversial element, because it brought together into one discussion, several activities and communities that traditionally have viewed each other with great suspicion. The links and relationships between public affairs (whether Department of Defense or State), psychological operations, military deception, and public diplomacy (at State, which viewed the new IO term 'defense support to public diplomacy' with scepticism) are undeniable in a theoretical sense, but in the 'real world' of the federal government where turf battles, organisational cultures, and concerns over roles and responsibilities, all intermix to create an environment that often does not embrace change.

The *IO Roadmap's* definition of IO was actively formalised across the military services as mentioned previously with the release of the newly-revised *Joint Doctrine Publication 3-13* (JP 3-13, 2006). The old *Joint Publication 3-13* had been in effect for more than seven years, during which much had changed in the IO environment. While the old doctrine had perhaps emphasized organisational measures, the new one makes several conceptual advancements as well. To begin, it described the information environment as a synergistic interaction of three dimensions: the physical, with the infrastructures and links of information networks; the informational, representing the actual material being carried by the physical networks; and the cognitive, of the perceptual element, where the human mind applies meaning to the information and which was described as the "most important" of the three. It also removes the term information warfare from the official lexicon, and while most of the rest of the world still uses information warfare as the most descriptive and commonly understood term for this, the Department of Defense on the other hand has officially dropped it. The new *Joint Publication 3-13* explicitly links IO to the Defense Department efforts to 'transform' itself, and it emphasizes the importance of IO's multinational and coalition elements. The role of United States Strategic Command as the chief advocate and proponent for IO is also emphasised, and its mission of coordinating IO across geographic areas of responsibility, such as between combatant commands in Europe and Asia, and across functional boundaries, is described in greater detail than before. The relationship between strategic communication and IO is also stressed, and it provides a

definition, albeit perhaps a misguided one and misleading one for information superiority (*Joint Publication 3-13*, 2006).

In addition to these high level strategic changes in IO policy across the department of Defense, the American military services have also either published or revised their doctrines for IO in the last few years. The Marine Corps published *Marine Corps Warfighting Publication 3040.4, Marine Air-Ground Task Force Information Operations* in July 2003; the Army published a new *Field Manual (FM) 3-13 Information Operations* in November 2003; while the United States Air Force also published a new *Air Force Doctrine Document (AFDD) 2-5 Information Operations* in January 2005 (US Army War College, January 2006). All of these new directives reflected their individual Service's perspectives on warfare and IO, and not surprisingly viewed IO through the lenses of air, land or naval warfare. The final policy action with respect to the Department of Defense to be discussed came in late 2006, with the United States Air Force's 'claiming' of cyberspace as one of its three core operational environments. While some saw this as nothing more than a turf grab for new missions and resources, in truth the Air Force had stated for more than a decade that it operated across three physical environments: air, outer space, and cyberspace. In December 2005, the United States Air Force Chief of Staff, General Michael T. Moseley, and Secretary of the Air Force Michael Wynne, issued a new United States Air Force mission statement declaring that cyberspace was a core mission area for the Air Force, and they followed this policy statement in late summer 2006 with actions to create an Air Force major command for cyberspace operations that will stand alongside both the Air Combat Command and Air Force Space Command (Bennett and Munoz, 4 November 2006).

2.7.1   Policy Changes: Offensive IO

Even with the major emphasis by the Department of Defense on the *IO Road Map*, the most radical change with regard to offensive IO policy changes have not occurred in the traditional realms of IO, but instead in the more 'nebulous' regions such as strategic communications, public diplomacy, international public information, perception management and psychological operations. A logical place to review the recent IO policy changes in these areas, will involve the federal interagency cooperation and coordination efforts. This is because while no National Security Presidential Directive has been released on strategic communications

or IO, a significant number of new strategic guidance directives have been published, beginning with the new *National Military Strategy* published in 2005, and the new *National Military Strategy on Cyberspace Operations*, all of which require significant coordination across the different federal agencies. Likewise other key National Strategies addressing on cyber security, homeland security, and critical infrastructure protection have also been approved, which help to give an overarching framework to IO. As will be addressed later, while the two Policy Coordination Committees created by *National Security Presidential Directive 1* remain in existence, in April 2006 a new Policy Coordinating Committee for Public Diplomacy and Strategic Communication was created, chaired by the Under Secretary of State for Public Diplomacy and Public Affairs, Ms. Karen Hughes (U.S. Department of State, 2006). What of course is significant about Ms Hughes is her proximity and close working relationship with President George W. Bush.

However from the perspective of perception management and strategic communications policy, a true comparison of doctrine versus requirements desired by the participants instead begins a decade earlier in 1997 with the publication of the Clinton era Presidential Decision Directive 56, *Managing Complex Contingency Operations*. Unfortunately if one examines the attempts to develop a more recent and overarching IO doctrine with respect to interagency aspects of the "softer" side of IO, particularly psychological operations, international public information, public diplomacy and strategic communications, those efforts have been less than successful. Even before the events of 11 September 2001, there had been efforts by the White House to update and rewrite a new National Security Presidential Directive to focus on influence at the strategic level, specifically with the release of a Defense Science Board report on *Managed Information Dissemination* in 2001. Written by public diplomacy professionals and led by its Chairman Vince Vitto during the transition period between the Clinton and Bush administrations, it laid the groundwork for the 2004 Defense Science Board Report on Strategic Communications, but because it did not come from the Executive Branch, much of its effectiveness appears to have been lost. In addition, a new National Security Council Policy directive on Strategic Communications, which was to rely on the three earlier National Security Council directives (NSC 4 (1947), NSDD 130 (1984), and Presidential Decision Directive 68 (1999), was were supposed to be issued in 2002. However that did not occur, for a variety of reasons, mostly political as cited in the research interview process (Jones, 2003). Some of this

may have been due to the debacle concerning the Office of Strategic Influence in February 2002, which in effect hamstrung the Bush administration in its attempts to develop a cohesive strategic communication effort, however there were a number of other reasons as well that are cited throughout this thesis. Thus the ultimate failure of the executive branch to promulgate a strategic policy in this area of IO probably occurred more as a case of general inertia and political unwillingness, than any other factor.

These failures are not totally representative of all efforts on the offensive aspects of IO. In fact a number of significant changes have occurred within the U.S. government with respect to broader policy area of public diplomacy. For example, the term Strategic Influence has disappeared in lieu of the term Strategic Communications, and since April 2002, the Department of Defense has regrouped and pressed on to conduct strategic influence operations under this new name (Parker, 2004). However even then, progress has been somewhat slow, and in many cases very sporadic. For example, the current structure of the new Policy Coordinating Committee for Public Diplomacy and Strategic Communication within the National Security Council constitutes an attempt by the Bush administration to develop a strategic communications capability. Under the chairmanship of the Under Secretary of State for Public Diplomacy and Public Affairs, Karen Hughes, attempted to oversee an overarching United States government strategy for Strategic Communications, but early gaffes and missteps spelled to its loss of prestige with her departure in 2007.

This is very ironic, because it was only in late 1999 that the United States Information Agency was dismantled, and its functions shifted under the greater umbrella of the State Department in what many saw as a hostile takeover. In fact, in three successive years (2002, 2003, and 2004) Representative Henry Hyde (R-NY) proposed the reconstitution of the United States Information Agency, in a number of legislation attempts such as *Information Protection Act of 2002* - HR 3969 (Kovach, 2004). None of these legislative efforts were successful, nor have the recommendations in either *Defense Science Board on Managed Information Dissemination* ever been accepted, which means that in the last decade, little has been done to rebuild a United States Information Agency like capability.

However other changes are also still occurring with respect to the relationship between IO and the larger issue of strategic communication and influence. As the military conflicts in Afghanistan and Iraq have continued, more recommendations continue to come from various

independent and quasi-government efforts regarding the need for a greater perception management capability by the United States government , to combat the adversary in the Global War on Terrorism, as shown by some of the these documents cited below:

- *Building America's Public Diplomacy Through a Reformed Structure and additional Resources*, U.S. Advisory Commission on Public Diplomacy (2002),
- *U.S. Public Diplomacy*, U.S. General Accounting Office (2003),
- *Finding America's Voice: A Strategy for Reinvigorating U.S. Public Diplomacy*, Council on Foreign Relations (2003),
- *Strengthening U.S.-Muslim Communications*, Center for the Study of the Presidency (2003),
- *How to Reinvigorate U.S. Public Diplomacy*, Heritage Foundation (2003),
- *The Youth Factor: The New Demographics of the Middle East and the Implications for U.S. Policy*, The Brookings Institution (2003),
- *Changing Minds, Winning Peace: A New Strategic Direction for U.S. Public Diplomacy in the Arab and Muslim World*, U.S. Advisory Commission on Public Diplomacy (2003).

All of these publications, as do many of this research's participants in particular emphasise the need for a greater perception management capability within the federal bureaucracy. This idea is crucial because as the events of September 11, 2001 indicate, military, political, or economic power is often ineffective in dealing with these new kinds of threats to the national security of the United States. These attacks were a blow to the American public and its perception of the government, and the fear produced by the terrorist acts can only be defeated by using a comprehensive plan in which information is a key element, or as John Arquilla and David Ronfeldt argued, the concept of networks fighting networks (Armistead, 2007). Both *Operation Enduring Freedom* and *Operation Iraqi Freedom* represent campaigns fought about perceptions, and the side that will ultimately emerge as the victor is the one that can best shape and influence the minds of not only their adversary, but their allies and even neutrals and uncommitted parties as well. The changes are truly revolutionary and describe a profound shift in the nature of power. Unfortunately, this transformation has not been translated from a strategic concept to tactical actions (Kuusisto, Kuusisto and Armistead, 2004).

2.7.2 Policy Changes: Defensive IO

Not all interviewee's on this project focused solely on offensive IO policy, and indeed much of the energy and enthusiasm by the participants also centred around defensive IO policy

as well. In the last decade, good examples of the development of IO defensive policy can be seen primarily in the Information Assurance and Critical Infrastructure Protection operational areas. In the next section, all of the updates to federal IO policy in these areas will be discussed and their relationship to the desires of the interviewees analysed as well.

2.7.2.1 Critical Infrastructure Protection

Critical Infrastructure Protection as a discrete issue within IO began with the 1998 issuance of Presidential Decision Directive 63 by the Clinton Administration. In addition, the events of 9/11 affected this area greatly, and the Bush Administration has followed this initial effort with several policy and organisational changes of its own. Although the *National Strategy to Secure Cyberspace* was issued after the terrorist attacks, the strategy was written and coordinated before that date, and reflected the efforts of the Bush Administration's then-advisor for infrastructure protection, Richard Clarke, who had also had the major hand in the Clinton Administration's efforts in this area. In 2003, the Bush Administration also issued two further strategies, namely the *National Strategy for the Physical Protection of Critical Infrastructures and Key Assets*, and the Homeland Security Presidential Directive 7, *Critical Infrastructure Identification, Prioritization, and Protection*. All of these strategy and guidance documents reflected the same basic philosophy of the earlier Presidential Decision Directive 63, namely that the task of conducting Information Assurance and Critical Infrastructure Protection at the national level was too difficult a task for unilateral government or business-sector solutions and thus required a partnership between all parties: owners, users, and the national security apparatus. The Defense Department had recognised the importance of this issue earlier, and indeed the Department of Defense was one of the principal instigators of a series of national-level studies that began in the early 1990s on these issues, and within the Joint Staff, which is responsible for Department of Defense wide communications, the J-6 directorate has been one of the central players in this area. In early 2006, the J-6 created a new office, the J-6X, and assigned it the responsibility of developing a *National Military Strategy to Secure Cyberspace*, the name being chosen to obviously parallel the *National Strategy to Secure Cyberspace*, written in the 2001-2002 timeframe. Although this effort was unable to meet its initial and overly-ambitious timeline of 120 days from start to finish, by the end of 2006, the new *National*

Military Strategy for Cyberspace Operations had been signed by the Chairman of the Joint
Chiefs of Staff.

Likewise in 2001 under Executive Order 13231, *Critical Infrastructure Protection in the
Information Age*, the Bush administration re-designated the Committee for National Security
Standards, as the primary group to provide a forum for the discussion of policy issues, sets
national policy, and promulgates direction, operational procedures, and guidance for the security
of national security systems through the Committee for National Security Standards Issuance
System as shown in the Committee for National Security Standards documents 4011–4016. Also
from a Critical Infrastructure Protection standpoint, there has been an equally prodigious output
of directives and memorandum from the Clinton and Bush Administrations over an eight year
period including as an example, three Executive Orders (13010, 13064 and 13231), a Homeland
Security Presidential Directive 7, and three Government Accountability Office Reports all issued
in close proximity (March, April, and May 2004), to support this area of Information Assurance.
What all of these disparate elements of the business and governmental interests did was to move
forward Critical Infrastructure Protection as a vital and useful component of IO. However,
because most of the infrastructure portion of Critical Infrastructure Protection is predominantly
owned and operated as a function of the commercial sector, progress has been uneven, with some
segments, notably banking and finance, advancing more rapidly than others. This disparate
focus is especially noted in the three General Accountability Office reports that highlight
deficiencies in not only the efforts of the business sector but the federal government as well.

2.7.2.2   Computer Network Defense

In addition to Critical Infrastructure Protection, the development of additional policy with
regard to Computer Network Defense has been a major component as part of a broader
discussion by the Department of Defense on the alignment of IO into offensive and defensive
capabilities that match better to their functional organizations. For if International Public
Information (Clinton Administration) or Strategic Communication (Bush Administration) is
normally considered the "offensive" aspects of this warfare area, and then Information
Assurance with its related functions of Critical Infrastructure Protection and Computer Network
Defense are more in the defensive realm. In fact the forerunners of IA in the form of
Information Security and Computer Security have long and distinguished histories within the

defense bureaucracy. A good example of this regards a portion of information assurance that centres on computer security assessments plus the certification and accreditation process. The original methodology for information assurance was known as the *Department of Defense Information Technology Security Certification and Accreditation Process (DITSCAP - Department of Defense* Instruction 5200.40, which was in existence for 10 years and was replaced in late 2007, by a new certification and accreditation policy entitled the *Department of Defense Information Assurance Certification and Accreditation Process (DIACAP)*. What this new process does is to force the program managers to evaluate their system from a confidentiality, integrity and availability standpoint on the value of the information protected. To do this, the program managers must determine the confidentiality, robustness and mission assurance category of their architecture by discussing and analysing the system with key personnel, such as the user representatives, system administrators, information system security managers and certification agent. This doctrine was a concerted attempt by the Office of the Secretary of Defense to lay out a new methodology for ensuring the security of its networks and applications, by standardizing the process through well-recognized IA controls. This is important because this new policy tightens the protection of the government and Department of Defense by enforcing standards across the enterprise.

There have also been other directives on computer network defense such as *The National Strategy to Secure Cyberspace*, which ties into critical infrastructure protection as part of a larger effort to protect America. An implementing component of *The National Strategy for Homeland Security* and complemented by a *National Strategy for the Physical Protection of Critical Infrastructures and Key Assets*, all of these documents were developed to allow the American public and commercial industries to secure the portions of cyberspace that they own, operate, control, or with which they interact. Once again, these documents reiterate one of the key lessons of this process, namely that IO does not have to be a top-down effort, because power has been shifted to the masses as part of the information age, but the protection of America must now be disseminated as well. Citizens of the United States are very accustomed to having the military or armed forces act as their protector against adversaries, but in the information age that is not always possible or practical.

2.8 Defensive IO Policy that led to the Stand up of the Department of Homeland Security

As noted above, securing the population is a difficult strategic challenge that requires coordinated and focused effort from our entire society, the federal government, state and local governments, the private sector, and the American people. That is what is different about this current era and what must be accepted in order to truly understand the power inherent in information. The final new policy and organizational initiative from a defensive IO perspective, has actually been the creation and development of a Department of Homeland Security. During the fall of 2000 and the spring of 2001, a 14-member bipartisan commission headed by former Senators Gary Hart (D-CO) and Warren Rudman (R-NH) released a three part series on the new threats to national security. Entitled the 'United States Commission on National Security/Twenty-First Century', their initial report *Road Map for National Security: Imperative for Change*, attempted to summarise, based upon the changing environment, the new threats to the United States, especially with respect to information (United States Commission on National Security / 21st Century, 15 February 2001). These reports proposed radical changes in the structures and baseline processes of the governmental apparatus to ensure that America did not lose its global influence or leadership role.

In an eerie coincidence (or perhaps not), the recommendations provided by this group provided much of the foundation for the changes that occurred after the attacks of September 11[th], 2001. While initially scoffed at by academia and the federal bureaucracy, the suggestions of this commission on national security in fact foreshadowed much of the changes that have occurred over the last five years. Equally as disturbing with regard to threats to national security and the role of information was a series of comments made by then Central Intelligence Agency Director George J. Tenant before the United States Senate select Committee on Intelligence on 7 February 2001. In this testimony, Tenant stated that "the threat from terrorism is real, it is immediate, and it is evolving. . . . Terrorists are also becoming more operationally adept and more technically sophisticated . . . for example, as we have increased security around government and military facilities, terrorists are seeking out "softer" targets that provide opportunities for mass casualties."

2.8.1 United States IO Policy Problems and Successes

Even with all of these official documents and changes in the IO policy and organisation within the United States government, there have still been a number of issues that have proved difficult to resolve with regard to IO. The problem, as acknowledged by many IO authors and theorists, as well as the participants in this study, is that the building of the actual respective steps of the day-to-day tactical operations of IO from the lofty aspirations of IO theory down to is very difficult. A number of participants alluded to need for centralised authority and the requisite will power from the federal authorities that were needed to make these dreams come true, yet there were also a significant number that advocated a bottom up approach which could work just as well. To a person, most interviewees acknowledged that it may indeed be a long time before the United States government organisational, personnel and doctrinal changes catch up to the conceptual power of information, which was lauded nearly a decade ago as the term IO first became popular. So in the broadest sense a disconnect still exists between IO theory and reality. This can be seen in the initial rush of excitement about information warfare and the Revolution in Military Affairs in the 1995-1996 timeframe. While the development of this relatively new concept continued unabated; and a number of exercises were conducted during this period, yet there was still a gap in the performance of IO as noted by the research participants. The computer network attack operations conducted during the 1996 and 1997 exercises were particularly effective and drew attention to the fact that the Department of Defense was vulnerable to this type of operation (Pilecki, 2000). But as the next two case studies will demonstrate, there is still much work to be done. While some areas of IO have progressed well, there are other areas, which for a variety of reasons over the last decade have not progressed as satisfactorily as one would have hoped.

For example, much has been written on the potential threat posed for the targeting of computer networks and related infrastructures by individuals or groups for terrorist purposes. However a substantial portion of this literature has been sensationalist, focusing narrowly on technical computer security issues, and has failed to link the discussion of 'cyber-terrorism' with the broader issues relating to either terrorism or policy responses to it (Devost, 2003). It is precisely because of this interdependence between the changing nature of global terrorism, and the increasing vulnerability of the critical infrastructures, that makes this topic and issue so important. In this next section, the author will examine the development and role of critical

infrastructure protection within the United States government as it relates to IO and compare and contrast its success to other areas, specifically perception management.

2.8.2   United States Critical Infrastructure Protection Policies prior to 9/11

During the Cold War, United States national security policy was focused on minimising the possibility of strategic nuclear attack by the Soviet Union. There was a general understanding of the nature of the threat posed by the Soviet Union, and most of the international security efforts of the United States (and the West in general) were directed at countering it. But with the collapse of the Soviet Union in 1991, and with it the relatively static bipolar world order, the strategic certainty provided by this structured threat disappeared. The spectre of global nuclear war was replaced by a wide range of diffuse unstructured threats and challenges. The reality of this new security environment was brought home to the United States with the bombing of the World Trade Center in February 1993. A little over two years later, the scene was replayed when domestic terrorism struck at the nation's heartland on the morning of 19 April 1995 at the Alfred P. Murrah Federal Building in Oklahoma City.

These events raised awareness of the threat posed by terrorism to the United States, but tangible policy outcomes took a little longer to emerge. The first key Clinton Administration response to the evolving terrorist threat was to promulgate Presidential Decision Directive 39 *US Policy on Counter-Terrorism*. This new doctrine articulated a four-point strategy that sought to reduce vulnerability to terrorist acts, to deter terrorism, to respond to terrorist acts when they occur, and measures to deny terrorists access to weapons of mass destruction, while integrating both domestic and international measures to combat terrorism. Presidential Decision Directive 39 was novel in that it specifically identified the vulnerability of critical infrastructures and potential terrorist attacks as issues for concern. But in general, this new policy generally lacked sufficient bureaucratic teeth to achieve meaningful outcomes. What the doctrine did accomplish however was to raise the profile in the United States government, because previous critical infrastructure protection policy had tended to be overshadowed by other elements of United States national security policy (Cordesman & Cordesman, 2002: pp. 1-2).

Part of the reason for this rising awareness, was the increasing interconnectedness of the information age, which has created a range of dependencies and vulnerabilities that were historically unprecedented. Following the terrorist attacks on the Alfred Murrah Federal

Building in Oklahoma City in 1995, the Presidential Commission on Critical Infrastructure Protection was established by Executive Order 13010. While this group was a natural follow-on to Presidential Decision Directive 39, in an informal sense, it also consolidated a range of uncoordinated critical infrastructure protection policy development activities occurring across government (Ratray, 2001, pp. 339-340). Likewise Executive Order 13010 also directed the establishment of an interim Infrastructure Protection Task Force within the Department of Justice, chaired by the Federal Bureau of Investigation (FBI) (Vatis, 1998). The purpose of this task force at the FBI was to facilitate coordination of existing Critical Infrastructure Protection efforts under the broad umbrella of the Presidential Commission on Critical Infrastructure Protection. The Infrastructure Protection Task Force was chaired by the Federal Bureau of Investigation, so that it could draw upon the resources of the Computer Investigations and Infrastructure Threat Assessment Center, which had been set up there in 1996 (Ibid.). So in essence, the Infrastructure Protection Task Force represented the first clear effort to establish coordinating arrangements across different government agencies and within the private sector for Critical Infrastructure Protection.

In the final report by the Presidential Commission on Critical Infrastructure Protection in 1997, this group produced a document entitled *Critical Foundations,* whose key finding noted that while there was no immediate overwhelming threat to the critical infrastructures, there was in fact a need for action, particularly with respect to the protection of the national information infrastructure. The report also recommended a national critical infrastructure protection plan, with clarification of legal and regulatory issues that might arise out of such a plan and a greater overall level of public-private cooperation for critical infrastructure protection (PCCIP, 1997). To follow through on these findings, from late 1997 to early 1998, the Presidential Commission on Critical Infrastructure Protection underwent an interagency review to determine the Clinton Administration's overall response to this policy initiative (Moteff, 2003, p. 4). Even as that was underway, concrete outcomes were already beginning to emerge by February 1998, as the interim Infrastructure Protection Task Force was amalgamated with the Computer Investigations and Infrastructure Threat Assessment Center, and made permanent within the Federal Bureau of Investigation under a new title, that is, the National Infrastructure Protection Center (Vatis, 1998).

The recommendations of the Presidential Commission on Critical Infrastructure Protection were also given practical expression on 22 May 1998 with the release of two policy documents: Presidential Decision Directive 62 *Counter Terrorism* and Presidential Decision Directive 63 *Critical Infrastructure Protection*. These two documents were the culmination of the Clinton Administration's efforts at policy development for Counter Terrorism and Critical Infrastructure Protection, and in a sense, Presidential Decision Directive 62 was a direct successor to Presidential Decision Directive 39. However, this new directive by the Clinton Administration provided a more defined structure for counter terrorism operations, and presented a focused effort to weave the core competencies of several agencies into a comprehensive program. Also in common with Presidential Decision Directive 39, Presidential Decision Directive 62 sought to integrate the domestic and international elements of United States counter terrorism policy into a coherent whole structure.

Presidential Decision Directive 63 was also the document that implemented the recommendations of the Presidential Commission on Critical Infrastructure Protection report, as interpreted through the prism of that inter-agency review panel. Identifying twelve sectors of Critical Infrastructure Protection that needed additional support, this directive appointed government lead agencies for each of these sectors, and established coordination mechanisms for the implementation of these measures across the public and private sector. In particular, Presidential Decision Directive 63 vested principle responsibility for aligning these activities in the Office of the National Coordinator, which had been set up under Presidential Decision Directive 62. Presidential Decision Directive 63 also established the high level National Infrastructure Assurance Council, to advise the President on enhancing the public/private partnership for Critical Infrastructure Protection. In addition, this directive called for a National Infrastructure Assurance Plan, which would mesh together individual sector plans into a national framework. Finally this document also authorised increased resources for the National Information Protection Center, and approved the establishment of sector Information Sharing and Analysis Centers to act as partners to the National Information Protection Center.

There were also additional updates in the last year of the Clinton Administration, with minor changes to Critical Infrastructure Protection policies. Version 1.0 of a *National Plan for Information Systems Protection* was released in January 2000, as a direct result of the call in Presidential Decision Directive 63 for a National Infrastructure Assurance Plan (*Defending*

America's Cyberspace, 2000; Moteff, 2003, p. 19). It is interesting that given the priority reflected to cyber security issues by the Presidential Commission on Critical Infrastructure Protection, that the National Plan primarily addressed the national infrastructure protection rather than Critical Infrastructure Protection as whole (*Defending America's Cyberspace*, 2000). This is interesting because as noted in Presidential Decision Directive 63, Critical Infrastructure Protection cannot be limited to just the federal infrastructure because in today's information environment, one cannot separate the public from the private sector. Other changes also occurred in the waning days of the Clinton Administration, when in June 2000, the *Terrorism Preparedness Act* established the Office of Terrorism Preparedness within the Executive Office of the President. It role was to coordinate Counter Terrorism training and response programs across federal agencies and departments. Like the Office of the National Coordinator established by Presidential Decision Directive 62, the Office of Terrorism Preparedness was not granted budgetary authority, and often had to rely on persuasion rather than a formal chain of command to achieve its objectives.

When the second Bush Administration came to power in early 2001, there was some consolidation of existing Critical Infrastructure Protection arrangements. The collection of senior Critical Infrastructure Protection groups was consolidated into one Counter-Terrorism and National Preparedness Policy Coordination Committee reporting to the National Security Council (Moteff, 2003, p. 8). And while some debate occurred on future directions for Counter Terrorism and Critical Infrastructure Protection policy, these bore no fruit prior to the terrorist attacks that occurred on September 11[th], 2001 (Ibid.). So in practice, during the first nine months of the second Bush Administration, the bulk of the Counter Terrorism and Critical Infrastructure Protection arrangements in place in the United States were largely a legacy of the previous Clinton Administration.

Thus to summarise, in the decade prior to the September 11[th], 2001 attacks, with the international aspect of the terrorist threat to the United States becoming more evident, significant policy updates were being promulgated by the White House. These terrorist incidents which demonstrated the international character of the terrorist threat included the 1993 World Trade Center bombing, the June 1996 attack on the Khobar Towers complex in Saudi Arabia, the plans to attack United States airliners in Southeast Asia in 1996, the attacks on United States embassies in Kenya and Tanzania, and the attack on the USS Cole in October 2000. In response to all of

these incidents, Presidential Decision Directive 39, Presidential Decision Directive 62 and Presidential Decision Directive 63 were all incorporated as measures to combat terrorism abroad and Critical Infrastructure Protection domestically. But while the international dimension of the evolving terrorist threat was acknowledged directly in policy, they were in actuality largely overshadowed by the domestic aspects of United States Counter Terrorism and Critical Infrastructure Protection policies which were implemented during this period.

2.8.3 United States Critical Infrastructure Protection Policies after 9/11

The terrorist attacks on September 11[th], 2001 led to fundamental changes to the United States government's approach to Critical Infrastructure Protection issues. On 8 October 2001, Executive Order 13228 established the Office of Homeland Security, to be headed by the Advisor to the President for Homeland Security, Tom Ridge, the former Governor of New Jersey. The purpose of the Office of Homeland Security was to develop and coordinate a national strategy to protect the United States against terrorist attack, in light of the new threat posed by global terrorism. This directive also established a high level Homeland Security Council, which was responsible for advising the President on all aspects of homeland security (Executive Order 13228, 2001). The following day, appointments were made for the National Director for Combating Terrorism, General Wayne Downing and the Special Advisor to the President for Cyberspace Security, Richard Clarke via Executive Order 13231. What is significant about these appointments is that Downing had previously been the Commander-in-Chief of the United States Special Operations Command, so his appointment reflected a greater prominence for the international and overtly military dimension of United States Counter Terrorism policy. In addition, this directive also created the President's Critical Infrastructure Protection Board, whose duty was to recommend policies and strategies for the protection of critical information systems. The same Executive Order also established the high level National Infrastructure Advisory Council to provide advice to the President on these key issues (Moteff, 2003, p. 10).

These efforts were not the end of new policy development with regard to Critical Infrastructure Protection in the aftermath of 9/11. In July 2002, the Office of Homeland Security released the *National Strategy for Homeland Security*, whose purpose was to integrate all government efforts for the protection of the nation against terrorist attacks of all kinds (Ibid, p.

11). In effect, the strategy updated the measures enacted under Presidential Decision Directive 63 in light of the post September 11[th], 2001 environment. This new strategy did not create any additional organisations, but assumed that a Department of Homeland Security would be established in the near future (Ibid.). This document was updated in September 2002, when the President's Critical Infrastructure Protection Board released for comment, the draft *National Strategy to Secure Cyberspace*. In effect, this document was the proposed successor to the Clinton Administration *National Plan for Information Systems Protection* as illuminated in the *National Strategy to Secure Cyberspace*. But while the issue of the draft plan was welcomed, concerns were expressed that it lacked the regulatory teeth to prompt action by the private sector, which of course goes back to the some of the original faults embedded in Presidential Decision Directive 63, namely that there must be a tight coordination between the public and private sector.

The most obvious consequence of the revised United States approach to Critical Infrastructure Protection in the aftermath of 9/11, occurred in November 2002, with the creation of the Department of Homeland Security (Ibid, p. 11). This new agency consolidated the bulk of United States federal government agencies dealing with homeland security, consisting of over 170,000 employees, into one department headed by a cabinet-level official (Ibid.). Representing the most fundamental change to United States national security arrangements since their inception in 1947, the Department of Homeland Security is comprised of five directorates:

- Management, Science and Technology
- Information Analysis and Infrastructure Protection
- Border
- Transportation Security
- Emergency Response and Preparedness (Department of Homeland Security Organisation, 2003)

What is very interesting and significant, as was noted earlier in this section, is that the Department of Homeland Security closely resembled some of the measures that had been proposed by the US Commission on National Security/21st Century (Moteff, 2003, p. 8-9). But as also mentioned earlier, it was only after the events of September 11[th], 2001, that the political imperative for significant organisational change for Critical Infrastructure Protection emerged. Further action with regard to this IO warfare area was also continued within the Bush Administration in 2003, with the release of three more policy documents as shown below:

- *National Strategy to Secure Cyberspace*
- *National Strategy for the Physical Protection of Critical Infrastructures and Key Assets*
- *National Strategy for Combating Terrorism*

At the same time, the release of Executive Order 13286 abolished the President's Critical Infrastructure Protection Board and the position of Special Adviser on Cyberspace Security (Ibid, p. 10). The National Infrastructure Advisory Council was retained, but now reported to the President via the Department of Homeland Security. Combined with the departure of key staff associated with cyber-security issues, these measures raised concerns that cyber-security issues were being marginalised in the new arrangements (Ibid, p. 23-24).

Taken together, what this section lays out is the evolution of Critical Infrastructure Protection within the United States government. Conducted in fits and starts, it is often only with the tremendous political pressure brought on by the terrible acts of 9/11, that many of the changes recommended by these different blue ribbon committees and groups have been adopted. However, there is still more to do, as most of the authors of these panels and staffs understand. This is because so much of Critical Infrastructure Protection is tied to the partnership between the public and private sector, and no matter what is promulgated on the federal side, until the corporate executives are convinced of the return on investment from these initiatives, then the true potential of these directives may never be realised. For that is a key point missing from some of these publications and emphasised by the research interviews; namely, that Critical Infrastructure Protection cannot be mandated to the business world, but instead an education campaign must be conducted, to show why these efforts are justified. To date, the author does not believe, nor does the literature show, that this training has occurred.

2.8.4 PDD-68 International Public Information

It was also during this timeframe of Critical Infrastructure Protection development, that a major effort by the United States government to improve its perception management capability was also begun. Not listed in the original Joint Publication 3-13 policy, perception management is generally considered to be comprised of a number of sub-elements including public affairs, influence campaigns, public diplomacy, psychological operations, deception and covert action. In reality, perception management is simply the ability to shape an image or conduct an influence campaign. Defined by the Department of Defense as shown below, perception management is

also seen as a key focus of change within the United States government.

> "Actions to convey and/or deny selected information and indicators to foreign audiences to influence their emotions, motives and objective reasoning; and to intelligence systems and leaders at all levels to influence official estimates, ultimately resulting in foreign behavior and official actions favorable to the originators objectives" (Joint Publication 1-02, 1998, p. 340).

In addition to the publication of the seminal doctrine of Joint Publication 3-13, the White House and the Department of Defense have also realised that they needed better coordination with regard to IO, since these influence campaigns are often conducted long before the traditional beginning of active hostilities (Metzl, 2003). This interaction between federal agencies within the executive branch also brought about a renewed emphasis on developing the correct IO organisational structure. As alluded to earlier in this chapter, the State Department was engaged in a major organisational shift, as the United States Information Agency component was brought within the greater cabinet agency. The actual legislation that amended the structure of the State Department is known as H.R. 1757 *Foreign Affairs Reform and Restructuring Act of 1998*. Divided into three parts, it is in Division A, Title III-V where the abolition of the different State Department functions are discussed in detail (U.S. Department of State, 1998). What is very interesting is that the actual language of the bill states that its purpose is to strengthen and coordinate United States foreign policy, by giving the Secretary of State a leading role in the formulation and articulation of foreign policy through the consolidation and reinvigoration of foreign affairs functions (Ibid). To do this, the writers of this bill proposed the elimination of the United States Arms Control and Disarmament Agency, United States Information Agency and the United States International Development Cooperation Agency. By definition, the State Department's mission is to advance and protect the worldwide interests of the United States (Armistead, 2002). The United States Information Agency on the other hand was designed to understand, inform and influence foreign publics as a means of promoting US national interests and dialogue between Americans and their institutions and counterparts abroad with its 7,000 employees (Ibid). The United States International Development Cooperation Agency and Arms Control and Disarmament Agency were smaller agencies with very specialised missions, but under this proposal, all of the functions, personnel and funding from these organizations as well, would be transferred to the State Department to increase the power of the cabinet level agency.

The Department of Defense and State Department were not alone in the organisational changes with respect to the power of information and perception management. In late 1997 and throughout 1998, the National Security Agency under the leadership of Richard Clarke, the aforementioned Special Adviser on Cyberspace Security as well as the director of the Transnational Affairs working group, began to develop the framework for what eventually became 18 months later, the Presidential Decision Directive 68 *International Public Information* policy (Metzl, 2003). Originally not all executive level organizations agreed on the need for an information policy and so not only did they need to be convinced of its importance but also about the timeliness of this issue (Ibid). To do this, the National Security Council integrated this new information concept into the larger reorganisation effort of the State Department. In addition, Department of Defense officials were also meeting in November of 1997 to build a sub-group to support the larger construct of Presidential Decision Directive 56, *Managing Complex Contingencies* (Dorflein, 2000). This earlier policy document had been signed as a tool to help the interagency process cope with complex contingencies as mentioned earlier and its main output was the development of an executive committee, one that would meet and help make executive decisions during a crisis. The problem, as laid out by National Security Council Director Richard Clarke in his 'Terms of Reference', was that if one waits until a crisis has occurred to get together and form a committee, then one cannot use the power of information to help shape the environment (Metzl, 2003). Instead, Clarke suggested at this 25 November 1997 meeting, that there was a need for the group to develop a process to build a construct that would allow the United States to plan much earlier for an information campaign. Thus, the primary task of this interagency group was to study the issue of how the United States government used information over the next six months and conduct an assessment of United States and multilateral for planning, coordinating and conducting perception management activities within the context of the Presidential Decision Directive 56 construct (ibid).

What is especially interesting when you compare the combining of public diplomacy and public affairs under the mantle of International Public Information is that the decision made in 1997, is exactly the opposite conclusion that the Truman Administration came up with nearly 50 years earlier. In 1948, the State Department officials dealing with these same two issue areas, thought it was too difficult to coordinate under one office and so they were split, and the United States Information Agency was formed (Armistead, 2002). In fact, as mentioned earlier,

Congress was so concerned about the possible propagandising of the American public that they passed the Smith-Mundt Act, which legislated that the State Department could only conduct public diplomacy abroad and only then to foreign nationals. Obviously technology has changed much over the last five decades, and the ability to segregate or separate access to information is much more difficult today. For example, how does one ensure that an Internet-based web-site is only viewed by a foreign audience, especially given the fact that video and audio-streaming technology, radio and television broadcasts can now be sent around the world? Are the changes to information and perception management affecting the nature of public diplomacy? It is these types of questions and many others that had to be answered by this interagency working group as they struggled to find consensus on their new policy.

However, change does not come from just the development of policy alone. As most bureaucrats understand, the real power of an organisational change and especially a large one such as at the State Department, often only results from funding and personnel moves (Kovach, 2004). Thus it was not until August 2000, more than 16 months after the original signing of the Presidential Decision Directive 68, that the first uniformed military officer was stationed at State Department and it was only at that time that true progress began to occur in moving forward on this initiative (Ward, 2001). For while former State Department officials like Jamie Metzl, Peter Kovach and Joe Johnson had all done an incredible job of keeping the flame and spirit of International Public Information alive, their job was not to function as planners. Therefore what was truly needed to make this program work, was an action officer and staff who could be assigned to run a program. As one of the participants stated, the biggest problem with International Public Information early on was that there were no operators (i.e., no one or no group to operationalise the process), and until they were brought onboard, little overall progress was made (Ibid).

2.9   United States Federal Organisational Changes

The changes or the lack of alluded to at the US State Department in the section above are symptomatic of an overall trend within the federal government toward IO. To assume that over the last decade, that there have only been major changes to IO in the form of public policy by the federal bureaucracy, would be a mistake, for organisationally the landscape of IO has shifted dramatically as well. One analogy often used to describe the changing role of IO from an

organisational perspective, has been 'suburbanisation' of this warfare area. Ten years ago, with the huge emphasis on the revolution in military affairs, and the introduction of information warfare, grand themes and terrible scenarios were described in great detail to the public and Congress alike. These included the like of 'Electronic Pearl Harbor,' 'CyberWar,' and other similar threats that provided a degree of 'hyped emphasis', which while helping to introduce the vulnerabilities associated with IO, often distracted from the overall goal as well. This was because these sensationalistic briefs tended to bring about an alarmist type of atmosphere, which also had the unfortunate effect of desensitising personnel to the real dangers inherent in IO, which often tended to be more mundane and technologically complex. For example, early descriptions of cyber attacks often foretold of massive panic as hackers brought down the power grids in the United States. However when this actually happened on the 14th of August 2003 in the northeast portion of the United States due to a fault in a power plant, it was not panic that ensued, but instead millions of people who were relieved that it was in fact only a technical hitch and not a terrorist attack instead. What followed was not pandemonium, but instead with a bemused attitude and perhaps predictable New York spirit, a long walk home in a hot and powerless day, which more than anything was a perhaps refreshing demonstration of peoples' resilience.

So in fact, the Electronic Pearl Harbor did occur as predicted, however not due to a cyber attack, but instead more to a mechanical error. And it is this movement from the Wild West attitude surrounding IO to a more operational or 'suburbanised' effort that probably best reflects the overall theme of this section in particular and this research as a whole. For no longer can federal agencies develop IO solutions alone or in a vacuum, and so what will become increasingly apparent to the reader is that the changes to IO policy and organisations in the United States tend to become less profound but more detailed and with more depth and substance as time passes. What has changed specifically is the awareness that when integrated planning is conducted, its results can synchronise the efforts of many different commands, Services, and agencies, so that the value-added benefits of an information campaign quickly become apparent. In addition, because information efforts are often conducted long before the traditional beginning of active hostilities, the need for the White House and the Department of Defense to coordinate between themselves and other government agencies and departments has brought about a renewed emphasis on the information organisational architecture.

2.9.1   The Effects of 9/11 on IO Organisations

The events of September 11[th], 2001 were a tremendous wake-up call for the Bush administration and how it conducted IO at the executive level. In the days immediately after these attacks, the State Department was looking to the executive branch and the National Security Council for guidance on building an organisation to support a strategic information campaign. Unfortunately however, leadership was slow in forming, for in the period after the terrorists' strikes, there was a significant amount of confusion within the government, and this paralysis carried over to the conduct of IO as well. For these first five to six weeks at the National Security Council, there was an absence of knowledgeable, experienced people to deal with strategic influence campaigns, as well as the normal intra-organisational discontent and turf battles (Jones, 2003). At that time, the Clinton-era National Security Council document, Presidential Decision Directive 68 *International Public Information* had been effectively muted, so there was no office dedicated at National Security Council to conduct a strategic perception management effort. The Joint Staff ended up during major portions of this crucial period simply contracting out their perception management campaign to the Rendon Group, a civilian company that specialises in strategic communications, under a contract with the Department of Defense (Jones, 2004). Gradually, as the campaign on terrorism continued throughout the fall of 2001, a number of influence plans and strategies were developed to create a working operational group, yet the hoped-for National Security Presidential Directive still remained in a holding pattern within the interagency process.

In November 2001, in accordance with National Security Presidential Directive 8, which established the Office of Combating Terrorism and outlined General Wayne Downing's roles as Deputy Assistant to the President and National Director and Deputy National Security Advisor for Combating Terrorism, a new position of Senior Director for Strategic Communications and Information was stood up and filled by a very experienced Army psychological operations officer, which helped to bring a level of competence to the staff (Jones, 2003). Likewise during the immediate aftermath of the terrorist attacks, Alistair Campbell, the Communications Director for British Prime Minister Tony Blair had suggested to Karen Hughes, Communications Director for the Bush administration, to form a series of Coalition Information Centers to concentrate on getting the pro-American message to the world media. Eventually three of these centres were set

up, in Washington, D.C., London, and Islamabad, with the facility in Pakistan actually occupying an old United States Information Agency building. All together, these groups perform admirably, focusing on public affairs and public diplomacy, however some critics argued that these organisations concentrated on U.S. domestic partisan politics instead of focusing on the set of global audiences now accessible via a 24-7 news environment (Armistead, 2003). Other critics have argued however, that these Coalition Information Centers generally worked well, by informing domestic and foreign press within their time cycles during the early phases of *Operation Enduring Freedom*, and they also eventually utilised a United States government spokesman who could speak Arabic and thus appear live on the Al Jazeera television station. Of course looking back, one cannot be sure that this really was a success story, because one must ask the question of why it took so long for Ambassador Christopher Ross to appear on Al Jazeera? This may have been because the White House was slow to see the need for United States' presence on Al Jazeera until external pressure became so bad that it actually forced Colin Powell and Condoleezza Rice to appear on this Arabic TV station using translators. In fact, Al Jazeera constantly invited them for interviews early on, but these invitations were rebuffed and Al Jazeera was actually blacklisted from early White House press conferences. Eventually the response was changed, but the delays in addressing this crucial audience, and it should have been recognized much earlier (Rendon, 2003). Foreign media always needs to be addressed in this Global War on Terrorism and the fact that it took so long to make key United States. government personnel available to these media sites was rather depressing and was perhaps an indication that at the highest levels the United States Government did not understand the true nature of this new battle-space.

Yet all was not totally bleak. Before she left the Bush administration in its first term, Karen Hughes formed the Office of Global Communications, ostensibly to force the public diplomacy community resident within the Department of State and in the field, to do a better job of explaining overall United States policies (Armistead, 2003). Created out of frustration with the perceived lack of effort at Foggy Bottom, this office coordinated with the interagency Global Communication Strategy Council. An evolutionary process and a follow up to the Coalition Information Center, this White House staff also coordinated with the National Security Center, in a quid pro quo relationship. The departure of Hughes and later General Downing from the Bush administration probably spelled the ultimate demise of the Office of Global Communications and

further White House Strategic Communication efforts, in the early post-9/11 timeframe (Alter, 6 May 2002, p. 49). There are those however, who don't believe this was Office of Global Communications mission at all, and instead its real task was to be the influence arm of the White House and to get the President's message out as an element of his re-election campaign for 2004. While this would be a normal and understandable objective of any White House-based communications effort, suspicions remain that the then-director of White House communications, Karen Hughes, quickly acted in early 2002 to put the new strategic communications Policy Coordinating Committee on hold because of fears that it would interfere with this mission (Jones, 2003). The fact that shortly after the election of November 2004 this Office of Global Communication quickly and quietly ceased operations could be a support for this interpretation.

This emphasis on the domestic audience can also have negative effects in other ways too. To begin with, there is a lack of understanding about what words or phrases mean to other audiences, for example some may be instantly hostile to an Islamic audience, while others may have an impact poorly understood by Westerners. 'Axis of Evil', 'Infinite Justice', and 'Crusade' are great examples of Bush administration's public diplomacy missteps. In addition, the White House did not collaborate well with State Department specialists who understand the implications of such phrases and their misuse of these actions and words have seriously hurt the Bush administration in its global war on terrorism. Some quip that a serious review of Samuel Huntington's *Clash of Civilization's* is not out of the question. Likewise the use of commonly used Islamic terms to label our adversaries may have a negative and unintended consequence. For example, including suicide bombers and terrorists under the label 'jihadists' may have actually be seen as legitimising them and their actions. Labels and terms are used in many cases because they are easy and in the common lexicon, yet it often not understood how they appear and what they mean in other cultural contexts. For in a 'war of ideas', words cannot only serve as ammunition, but are often the main weapon (Armistead, 2007, p. 158).

The IO organisational changes at the interagency level got more convoluted as the Global War on Terrorism continued (Foer, 2002). The J-3 Director of Operations on the Joint Staff formed the Information Operations Task Force, led by the J-39, to be responsible for IO, but that group was more technically oriented, so there was still a role for the Department of State in the diplomatic arena (Pilecki, 2002). A Strategic Information Core Group was also

formed within the interagency structure, but overall, the general consensus was that not much was accomplished with this organisation because they were never empowered or recognised by the major departments to possess the ability to get things done. In this atmosphere of Operation Enduring Freedom and the ongoing war in Afghanistan, the Office of Strategic Influence was established by the Department of Defense in November 2001, in an effort to coordinate its strategic perception management campaign and because of a perceived leadership void, with the Assistant Secretary of Defense for Special Operations/Low Intensity Conflict in the lead. The Office of Strategic Influence organization was comprised mostly of personnel with psychological operations and civil affairs backgrounds, with a mission to respond to and negate hostile propaganda, using mostly human factors and a little technology (Timmes, 2002). It appeared to be placed to work well, because it had financial resources, and it was also a Department of Defense organisation, yet it quickly ran foul of two critical interagency IO organisations (Rotzer, 2002c). This is because the Office of Strategic Influence group had been placed at Department of Defense, not at State Department's Bureau for International Information Programs, because some believed that it's more operational tasks may have been more easily accomplished from within the Department of Defense. By doing this, the Department of Defense gave the ultimate rejection to the Presidential Decision Directive 68, which may have stemmed from the overall belief that the strategic perception management campaign had been wrongly placed by the Clinton administration, and that instead, an office should have gone to the Department of Defense or National Security Council instead.

At a meeting on 16 February 2002, Secretary of Defense Donald Rumsfeld approved the office, however the senior Department of Defense Public Affairs official Victoria Clarke did not concur, and her opposition manifested itself almost instantly. On 19 February, the first article critical of the new organisation appeared in the *New York Times*, was released while both Rumsfeld and Clarke were in Salt Lake City, Utah at the Winter Olympics. It was reported that Rumsfeld was livid but could not do much due the political concerns created by the allegations that the Office of Strategic Influence would lie to the media to conduct disinformation campaigns. As satirically reported by Mark Rodriguez in the *Washington Post* electronic journal *Insight*, the demise of this Department of Defense office was a political turf-battle with Clarke leading her own disinformation campaign to retain control of all public affairs efforts, exactly the charge she made to the press about Office of Strategic Influence, which was later investigated

and proven unfounded (Ricks, 2002). Politically embarrassing to Secretary of Defense and the President, it was very comical to watch the government officials deny the need for an office in the United States to conduct strategic perception management campaigns. Every nation participates in these activities, but almost all deny their existence. Even foreign news agencies put a satirical touch on their reporting as they watched the American officials attempt to explain away the obvious (Woodward and Balz, 2002; Rotzer, 2002a; Creveld, 2002).

All of these organizational shifts with regard to strategic communications allude to a question that has arisen over the last 10 years, namely where should a strategic perception management campaign office be located? Presidential Decision Directive 68 put the International Public Information activities at the State Department in 1998 where it foundered for two years due to lack of budgetary authority, manning, and empowerment. In addition, the International Public Information group was also hampered by the interagency process. While the draft National Security Presidential Directive on Strategic Communications has repeatedly recommended the need to embed the strategic perception management capability in an office in the National Security Council, the Defense Science Board for Managed Information Dissemination in 2001 reiterated the desire to keep the authority at the State Department (Gregory, 2003). This argument for keeping the Policy Coordinating Committee at National Security Council was centred on the desire to keep this organisation in a steady state. The National Security Council is by definition, the single organisation within the United States government responsible for turning interagency positions into recommendations to the President. It looks at international affairs and foreign audiences in an operational manner, which was greatly missing from the International Public Information way of doing business. So there is strong logic behind this argument as well. The counter-prevailing suggestion for putting the Policy Coordinating Committee in Department of State was led by David Abshire, who believed that a Tom Ridge-like figure was needed to drive the program (Fulton, 2003). However, there is also a concern that any strategic communications effort led by the Department of State will be focused more at public diplomacy / public affairs rather than strategic influence issues.

All of this effort was eventually overcome by events. With the initial departure of Karen Hughes from the White House in 2002, most of these activities lost their momentum. For it was, after all, Karen Hughes who made the Coalition Information Centers happen during the early stages of Operation Enduring Freedom. She understood how effective public diplomacy could

be on the War on Terrorism. The Coalition Information Centers were so successful during the fall of 2001, mainly because of the President's influence, and also because there were effectively no constraints. In effect, they didn't have to filter information through a number of layers of bureaucracy, because normally, Congress is very concerned with the Smith-Mundt Act, an early Cold War-era piece of legislation that prohibited the delivery to the domestic American populace of any foreign-targeted information (Gregory, 2003).

As the events surrounding the Office of Strategic Influence debacle of early 2002 indicated, the widespread concern towards activities of the State and Defense Departments may have not been the case when it comes to the White House. With the creation of the Office of Global Communications and its assigned mission of explaining the United States policies, the White House felt a great need during *Operation Enduring Freedom* to expand their frame of reference, for example to influence those Islamic nations and populations that reject out of hand any information coming from western sources. This theme was emphasised Hoffman (2002) of Internews Network in his *Foreign Affairs* article, "Beyond Public Diplomacy," in asking the quintessential question "How can a man in a cave - out-communicate the world's leading communications society?" In doing so, he thus strikes a chord for more concerted strategic communication efforts by the United States government. Therefore, the Department of State still needs to enlist moderate Arabic nations to help in this project, but this desire runs into the roadblock of how current American efforts in Israel/Palestine conflict are seen across the Islamic world and exploited by Islamic radicals, sometimes via overt disinformation, as clear evidence of a 'United States-Zionist alliance'. The conflict in southern Lebanon in summer 2006 merely added fuel to this fire. Often the United States government does not necessarily see the connection between the Palestinian conflict and events in Iraq, but the entire Arabic world instantly does. So now the White House is even losing out on trying to get the moderates to push our message. Plus the debacle concerning the Office of Strategic Influence in February 2002 also stalled any of the subsequent Bush administration's attempts to develop a strategic communication effort, and essentially this controversy put the National Security Council Strategic Communication Policy Coordinating Committee on hold, until the creation in April 2006 of the new Public Diplomacy/Strategic Communication Policy Coordinating Committee, chaired by Karen Hughes as discussed previously (Armistead, 2007).

Thus the mission and structure of the new Policy Coordinating Committee constitutes an attempt by the Bush administration to develop a long-term capability to conduct public diplomacy and strategic communication. While there is still no overarching United States government strategy for Strategic Communication, despite the fact that the White House has had a Counterterrorism Information Strategy since December 2001, there can be little doubt that the proposed strategy circulated for coordination by Karen Hughes in late 2006 was an attempt to answer this long-sought government-wide effort. The irony is that it was over a decade ago that the United States Information Agency was dismantled, and its functions shifted under the greater umbrella of the Department of State. In fact, as mentioned previously, Representative Henry Hyde (R-NY) proposed numerous times the reconstitution of that agency, in his legislation to bring back capabilities that had so recently been diminished, for much of this legislative proposal mirrors efforts by the Defense Science Board for Managed Information Dissemination working group. While the State Department did not agree with this concept, the new structure suggested by the Karen Hughes-chaired Policy Coordinating Committee may go even beyond what existed previously in terms of a strong centrally influence and communication program. Therefore, the demise of the United States Information Agency may have contributed more to the failing of Presidential Decision Directive 68, and thus the need for a new structure and capability to conduct global influence than any other action to date (Ward, 2001).

For in the end, it is not a new organisation that will drive a strategic communications effort, but instead a shift in the mindset of the White House and the National Security Council. The need to push senior officials to conduct briefings at 0700 Eastern Standard Time, to match Middle Eastern news cycles, or to ensure United States Arabic speakers are available on Al Jazeera, are becoming much more accepted and understood methods of doing business. These ideas are now conventional wisdom as the value of strategic communications rise within the Bush administration. To be effective, one cannot just think in news cycles (24/7 around the world), but instead also in decades, for example, expanding exchange programs such as the Fulbright Scholarship program, so that the United States government can be much more effective in a strategic management campaign. This latter example could be an example of one of Karen Hughes' "Four Es" of Public Diplomacy: engage, exchange, educate and empower. In effect, there needs to be an issues agenda versus a value agenda. Input from this research indicated the need to take a short- and long-term approach to these problems, but it must also be led from the

top down, with full White House and National Security Council leadership to ensure full interagency participation (Jones, 2004). The second Bush Administration has repeatedly tried 'to talk the talk' of public diplomacy and strategic communications, and at all levels, from Vice President Cheney through Secretary of State Rice to Under Secretary Hughes, quotes and sound bites referring to the need to do these tasks better abound. But, what is really needed now is real evidence of resources, organisations, people and operations that enable an effective long-term strategic communications campaign. It is only then that a true strategic perception management campaign will succeed, and the power of IO be realised by the United States.

2.9.2 Case Study in Organisational Changes regarding Translating Power into Outcomes – Kosovo (1999)

The next section demonstrates a good case study during this same time period on the effects of perception management and the United States government, with the associated successes and failures per the military operations in Kosovo. This was a massive air campaign conducted by a coalition of United States and North Atlantic Treaty Organisation air forces against the former Yugoslavia over its policies of genocide in the Serbian province of Kosovo. The allied coalition flew over 34,000 combat sorties in a 78-day period of bombing, inflicting massive destruction on Serbia's economic infrastructure in early 1999. Rather than bringing stability to the region, as IO doctrine dictates, North Atlantic Treaty Organisation's operation actually created greater regional instability and the potential for future conflicts.

The strategic bombing campaigns first described by the renowned Italian air power theorist General Giulio Douhet and executed by the Allies against Germany in World War II are supposed to be a thing of the past for the United States. Douhet envisioned a total warfare where a nation's military, industry, and population were attacked to bring about a swift and total defeat. IO doctrine, on the other hand, does not advocate attrition bombing attacks and wholesale destruction against an adversary. Indeed, the advent of precision-guided munitions and effects-based targeting has added a whole new dimension to using physical destruction as an information weapon. The mere ability to destroy one of an adversary's high value targets while leaving the surrounding area virtually unscathed sends a very potent psychological message. First, it demonstrates the precision, lethality, and superiority of American weapons technology. More importantly from an IO perspective, limiting collateral damage and physical destruction gives the

adversary less ammunition for hostile propaganda directed against the United States. Second, the United States military has now so conditioned the international media to low collateral damage and precision engagement, that when the occasional accident occurs and a non-military target is hit, the media will tend to amplify the effects of the accident. By its sheer excellence, the United States' recent aerial campaigns have inadvertently set an inescapable standard for minimising collateral damage. However, there is much more to IO than just a targeting or destruction campaign.

Therefore, both the domestic and foreign publics expect United States to avoid inflicting massive collateral damage and civilian casualties since it has the technological means to do so. Failure to accomplish this strategy makes the United States a target of criticism by domestic and foreign media and politicians alike. The very manner in which the United States uses physical destruction may in fact provide an information tool for an adversary. When the United States uses physical destruction to manipulate the behaviour of an adversary, it must defend itself against the hostile propaganda of that adversary and strive to maintain absolute credibility. Therefore, it is critical that the public affairs and psychological operations messages describing the use of physical destruction be absolutely accurate. While sounding impressive, this lofty list of North Atlantic Treaty Organisation achievements later proved fairly inaccurate. In what may have been an overzealous desire to demonstrate positive results from a two-month-old air campaign that was beginning to draw considerable international criticism, North Atlantic Treaty Organisation put its credibility on the line with statements like this the Serbian military knew to be inaccurate. Given that the National Army force in Kosovo was the target of United States international public information and psychological operations efforts, any loss of credibility with the target audience ultimately only harmed these operations.

Therefore although the original premise from the allied leadership was that this would be a short strategic bombing operation, in reality, the war quickly began to drag on, as the effects of the strikes did not faze the Serbians. In fact, it was not until almost eight weeks into this campaign that IO type strategies were developed to try to use new methods to bring pressure on Milosevic himself. The bombing didn't bring about the desired results, and so other tactics were needed against the dictator. Some of these specific attempts to conduct an information campaign were aimed at discrediting his policies, while at the same time undermining Milosevic's economic means to continue the conduct of the war (Arkin, 2001). To do this, high-level

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diplomats from the allied coalition conducted near simultaneous press briefings emphasising the fact the Serbia as a nation was condoning Milosevic's genocide actions. In the meantime, bombing missions were conducted against specific factories and industries that were funding the upper leadership. Detailed and tailored messages were also sent to these same Serbian government officials, trying to influence them to shift away their allegiance from Milosevic. Together all of these actions taken together, along with the military, diplomatic and economic pressure are what many people believe helped to bring an end to this conflict. One may not know for sure, because much of the details are still classified, but reports are starting to leak out slowly, that it was the information campaign rather than the bombing campaign that was ultimately successful as a perception management tool that ultimately outed Milosevic from Serbia (Ibid).

To summarise, Kosovo will probably rank as the Second Information War. Through the use of advanced information dissemination including faxes, e-mail and web pages, as well as perception management campaigns, this conflict was fought for the hearts and minds of a worldwide audience. Where the ultimate changes were actually made, was the detailed, tailored targeting of the key individuals that could affect the decision-makers. That is what was different about this operation and the use of information. In was key that in this conflict information was recognised as the primary weapon that was used to bring about a decisive end to a conflict.

2.10   Summary

What all of these reports emphasise is the need for a much greater capability with regard to perception management and strategic communications within the United States government. The mere fact that these publications continued to be released means that the progress envisioned by these various advocates of IO has simply not materialised. In examining these studies and recommendations of the official United States government IO efforts with respect to the global war on terrorism, it is interesting to compare these reports to a series of articles compiled by the Washington Quarterly, and edited by Alexander Lennon entitled, *The Battle for Hearts and Minds: Using Soft Power to Undermine Terrorist Networks.* Published in 2003, these articles attempt to show how useful information can be to the United States for campaigns such as Operation Enduring Freedom and Operation Iraqi Freedom. While it will be interesting to see if any of the recommendations of either the semi-official or commercial publication make it into

the next version of Joint Publication 3-13 or other official IO policy, it is fascinating that a number of these articles in Lennon's book advocate the potential of perception management for future operations, and that its proper conduct will be key to success in the future. It was also noted by Lennon that in the greater umbrella of IO, it is the area of perception management which is the most rife with confusion and misinterpretation, because there is such a fine line between psychological operations, public affairs, influence campaigns, public diplomacy, international public information, strategic communications and propaganda (Lennon, 2003).

From a different perspective with regard to perception management in the United States government, Nancy Snow in her two books, *Propaganda, Inc* and *Information War* actually argues that the United States government has too much power with respect to information, and uses that power to control society by limiting dissenting opinions and free speech, especially in the Bush Administration after the events of 9/11 (Snow, 1998; Snow, 2003). This opinion is not widely shared by the participants of this research, but that being said, all views are valid and should be taken into consideration as part of the methodology of this thesis. In addition, as noted in later sections, while the author attempted to select a diverse group of interviewees for his research, in some cases, that is not always possible, because a high-level of knowledge about IO was a key factor. So it is very interesting to get totally different opinions on the use of IO within the United States government from authors such as Nancy Snow. To summarise this section, of the two areas of IO policy of the United States government that were selected to analyse in detail as part of this research, namely computer network operations and perception management, it has been the former that has been more successful in its implementation over the last decade.

Chapter 3 – Philosophical Frameworks and Research Methodologies

3.1 Introduction

This chapter discusses the methodology utilised in this research, as well as the rationale for this selection. Methodology is normally considered the study of methods and is often regarded as a 'structured approach' with which a researcher 'thinks' about a problem. It is a set of guidelines which helps to stimulate the intellectual process of analysis, while focusing the process on reality (Wilson, 1984, p. 6). Methodology can also be considered the study of principles of method used, or a higher-order term for methods (Jackson, 2000, p. 11). Likewise methodology can also help to solve a paradigm, which is an entire constellation of beliefs, or a 'basic' set of beliefs that guide action (Kuhn, 1970, p. 146; Guba, 1992). Some academics have also stated that "methodologies are simply meaningless congeries of mindless choices and procedures unless they are rooted in the paradigms" (Guba & Lincoln, 1988, p. 114). By this definition, a paradigm must therefore imply a choice of methodology, which can be defined as 'the fundamental or regulative practice' which guides the research process (Seale, 1998, p. 8). Therefore, by implication from these definitions listed above, methodologies and paradigms are normally linked together. As will be seen in these next few chapters, methodologies do not have to imply an individual method, although some do tend to favour certain processes, however, it is not ordained that one follows another.

From these concepts, methodology is also related to theory, although often in a subordinate role (Jackson, 2000, p. 16). Theory is sometimes described as an internally consistent set of empirical propositions that help us to explain and predict, as well as describing relationships between variables, which in turn have attributes or values. Attributes are thus characteristics or qualities that describe an object, while variables are logical groupings of attributes. Together these two concepts and their respective relationship lie at the heart of theory (Babbie, 2001, pp. 29-32). In addition to the study of methods and theory, methodology is also about processes, and how a particular problem can be solved. There are different ways to do this, and some of the choices are outlined in this chapter. For example, the researcher may choose to use inductive reasoning (particular to general), vice deductive (general to specific) because the researcher's observations lead in that direction. Perhaps the data itself may describe

the approach taken and lead the methodology in a qualitative or quantitative direction, thereby determining for the researcher the actual process utilised (Ibid, p. 37). Of course, the overall goal of any research is to ensure that no matter what methodology is chosen, the approach itself is one that can adequately ensure a systematic process is utilised - one that provides a theoretical construct tied to reality with sufficient academic rigor.

3.2   A Framework for Design – Elements of Inquiry

So in essence, methodology is also a framework in which the research can be explained and understood. The study must be able to relate to the broader and common body of knowledge (that is, the paradigm) and the goal for methodology is the use of a disciplined approach to research independent of the personal biases of the researcher. For all quality research efforts must use some sort of framework for design, or 'ideas' in which knowledge about the situation being researched is expressed. These relevant elements can be seen in Figure 3.1:
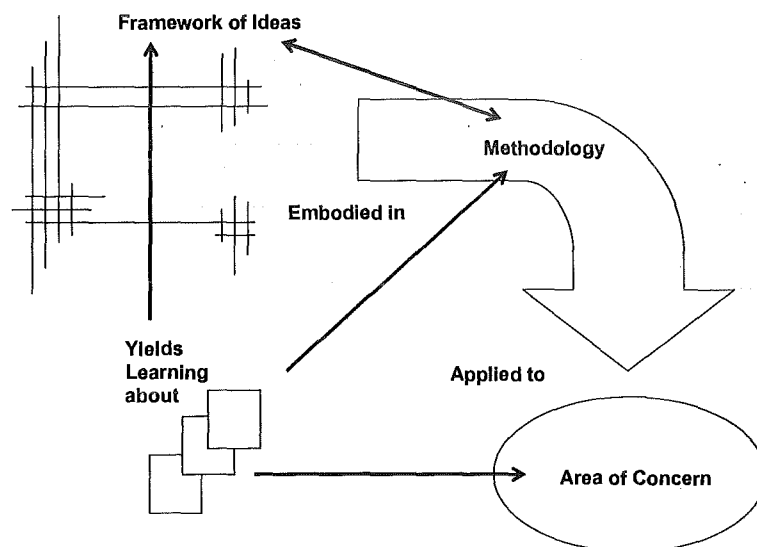
Figure 3.1 – Elements Relevant to any piece of research

(Checkland and Howells, 1998, p.13)

In general these methodologies can be divided into three different approaches – qualitative, quantitative and mixed methods. Each of these structures in turn has three elements consisting of philosophical assumptions (knowledge claims), general processes (strategies of inquiries) and detailed procedures (methods), that can all be used to help frame the problem (Creswell, 2003, p. 3). Sometimes referred to as elements of inquiry, this structure or

framework is the most basic unit of analysis, which makes it an essential part of any research project. Therefore in this thesis, a standardised process, as described above, is utilised as part of this project, with a section described below for each of the different elements of inquiry. For example, Chapter Two consisted of an extensive literature review which constitutes a series of knowledge claims or philosophical assumptions of the state of IO in the United States government. In this chapter, the different prospective strategies of inquiry are examined and analysed to determine the best methodology that should be utilised. Finally, in Chapters Four and Five, the actual method used in this thesis is delineated as a set of detailed procedures which includes data collection, as well as how the research analysis was conducted.

As mentioned previously, there are three main choices or approaches of methodologies which include quantitative, qualitative or mixed methods. In this chapter, all of these will be reviewed and analysed to determine the one most suited for this particular thesis. For in any research project, the elements of inquiry are needed help to 'frame' or 'structure' the process. The use of a planned approach also helps the researcher to determine the philosophical stance of project, to develop a strategy or plan of action that links methods to outcomes, and finally to decide on the actual series of techniques and procedures to use (Ibid, p. 4). It is this process of conceptualising these elements of inquiry, which helps to determine what kind of 'approach' will be used in a particular research effort. These sociological paradigms are documented by Burrell and Morgan in their classification framework, as shown in Figure 3.2. This grid allows an academic to relate different methodologies, from a societal and system viewpoint to build a framework in which to conduct their research.

The Sociology of Radical Change

	Radical Humanism	Radical Structuralism	
Subjective			Objective
	Interpretative	Functionalist	

The Sociology of Regulation
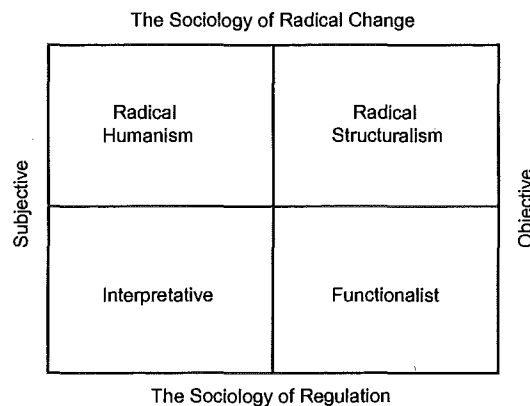
Figure 3.2 – Analysis of Social Theory

(Burrell and Morgan, 1979)

However, it is not just the theoretical lens that are the most important factor in deciding on a particular methodology, there are also other features that play a crucial role as well. While academic studies tend to gravitate to certain types of research into categories that have proven over time to best frame a particular set of data or theoretical constructs, it is not always a strict rule or formal law. Likewise, the hard line that formally existed between qualitative and quantitative studies has changed, with the rise of the mixed methods as a research methodology in its own right. These changes have led more to more of a consensus on the need for a continuum of practices, which range the gamut of the available approaches (Ibid, p. 4). The use of a dynamic approach to the selection of the research process will be seen in this thesis as well. This is because the selection of a methodology ultimately determines the whole nature of data collection and philosophical assumptions that the researcher makes about their thesis, and so the choices that are eventually made are crucial to the overall success of the project.

3.3   Knowledge Claims

Often considered a set of assumptions, knowledge claims are based on the orientation of the researcher. This can be affected by a number of factors, including epistemology, ontology, positivism, post-positivism, idiographic, and nomothetic issues, as well as inductive or deductive reasoning. Taken together, these concerns build a framework for the methodology based upon the data and the pre-conceived 'views' of the researcher. For example, the term epistemology is of Greek origin and means knowledge. Often concerned with the philosophy of how one learns, epistemology is also related to methodology, since the latter involves the method of understanding knowledge. Another term that is important concerns ontology, or the branch of metaphysics concerning with nature and relations of being. As opposed to epistemology which is concerned with knowledge issues, ontological arguments are more related to being or existence. Therefore, the stating of a knowledge claim simply means that the researcher starts a project with certain assumptions about how they will learn and what they expect to learn during a particular inquiry (Creswell, 2003, p. 6). This is in essence, the development by the researcher of a theory that describes their reality or the 'what is' state, which relates to the overall original need for a methodology. Theory does not determine 'what should be', nor can it settle debates about values (Babbie, 2001, p. 25). Instead theory can be a search for reality which often

depends on a viewpoint taken – in a broadest sense, the 'framework' which ultimately provides a philosophical background for the research. These philosophical views can be divided into two main areas - modern (positivism) or post-modern (post-positivism), and the decision on which one to use will strongly influence the sense of reality that a researcher may possess (Ibid, p. 21). The post-positivism approach has been expanded recently to include a number of additional sets of alternate post-positivism knowledge claims, which will be examined later in this chapter to include constructivism, advocacy or participatory and pragmatism viewpoints (Creswell, 2003, p. 6).

In addition, these views or 'orientation' can also be expressed as dialectics or explanations of research conducted. For example, the question of whether this research is concerned with a single or unique event (idiographic) or is it more interested in explaining a class of situations (nomothetic) also needs to be determined. Some theorists believe that Aristotle may have been the original source for the distinction between nomothetic and idiographic sciences (Nagel, 1961, p.547). Both words have their origin in ancient Greek, with nomos equating to laws and idios meaning private or personal. Although not labelled as such, Aristotle did describe the difference between seeking to establish abstract general laws for indefinitely repeatable events or processes as compared to understanding the unique and non-recurrent. These terms themselves while first noted by Levin in 1835 and Windelband in 1915, were not widely used until the advent of Brunswickian research (Brunswick, 1956). However, since that time, their concepts have become generally accepted in academic research, and play a major role in helping the researcher understand the definition of their studies. For example, in general a nomothetic approach is most often associated with the use of quantitative methods such as statistical averaging. In this manner, large groups of people can be investigated in order to find general rules of behaviour that apply to everyone. Likewise the idiographic approach is normally best suited for qualitative methods such as case studies or individual interviews, where a personal, in-depth understanding of a subject can be achieved. These methods are often very flexible and conducted over a long-term with good examples being Freud in 1909 and Piaget in 1953 (Jackson, 2000). In the case of this particular research, an idiographic approach was followed, due to the long-term active interview phase that allowed understanding and comprehension of the complexity of the interviewee's thoughts.

In developing the research methodology, the type of reasoning or logic used is also crucial. The two major systems as mentioned previously include deductive and inductive, which together form a system of logic. The former is a level of thinking that moves from the general to the specific while the latter works in the opposite manner. Deductive reasoning often follows the steps of first developing a theory and hypothesis, then using observation and experimentation to confirm or deny the original theory. It is more restrictive in nature and is focused on proving a hypothesis. Inductive reasoning on the other hand, normally begins with specific observations in which patterns or similarities are noted and from that structure a tentative hypothesis is proposed, which in turn often evolves into a set of theories. In the case of this particular research, a combination of both types of reasoning was ultimately utilised. This can be seen early in the research, where theories and hypothesis were proposed based on knowledge claims and literature reviews by the author. However from the observations and actual interviews, it quickly became apparent that in fact, the early conclusions did not support the original hypothesis. This is because 'other' patterns had emerged from the data, and from these similarities, an updated hypothesis was finally developed that resulted in the theoretical construct for this research. Thus, it was a combination of both deductive and inductive reasoning that was finally utilised in this research.

Of course whether an inductive or deductive theoretical construct is used with a positivistic or post-positivistic viewpoint, and idiographic or nomothetic reasoning, it is sometimes a combination of these approaches working together as a framework or paradigm, that serve as a fundamental model or frames of reference for a researcher to organise their observations (Babbie, 2001, p. 42). It is the latter which tend more than any other areas, to truly define the selection of a methodology, so in essence more emphasis should be placed on the reason for its selection. In the next few pages, descriptions of the dissimilarity between the 'viewpoints' available for the choice of research methodology will also be described. This is because the differences between positivistic and post-positivistic often lead to a very different ontological and epistemological perspective. The positivistic outlook tends to have more of a realist perspective and utilises singular reality ontology, with a very objective and dualist epistemological viewpoint. This methodology also tends to be more experimental, with a manipulation of the data to verify a hypothesis. Therefore, this approach contrasts with the post-positivistic standpoint which possesses a critical realistic ontological perspective and a modified

objectivistic epistemology. That methodology is often modified to be experimental as well, which still tends to manipulate data to verify a hypothesis, yet there is also an element of discovery. Thus in summary, for knowledge claims, the philosophy used by a researcher often depends on the 'view' or paradigm utilised. Therefore, all research is based on assumptions about how the world is perceived and can best be understood as part of an epistemology, or knowledge claim. In the next section, the two main philosophical schools of thought - positivism and post-positivism, of which there are several variants, will be discussed to show how the particular methodological approach for this research project was developed.

3.3.1   Positivism

This particular study of society is normally attributed to Auguste Comte (1822), from his observations which formed much of the foundation of what is now considered the philosophy of Positivism (Babbie, 2001, p. 44). Scientific rationale was the basis of his research, with optimism as a main characteristic (hence the term positivism). This knowledge claim's central thesis is that all of society can be observed and explained in a logical and rational manner to determine the absolute truth, which was also a key attribute. What this approach often translates to is a rejection of meta-physics and a focus on empiricism, in the fact that science should only concentrate on that which one can measure or observe. Deductive reasoning, with the development of testable theories and a heavy focus on scientific experiments were all central to the positivistic view of the world. The backbone of much of modern-day social research, positivism was considered the primary philosophic knowledge claim for over 150 years and was not seriously challenged until the advent of post-positivism of the 1980s. It was only with the inability of many researchers to fully explain human nature in a positivistic manner which eventually drove the development of a whole range of alternate knowledge claims such as post-positivism and others.

3.3.2   Post-Positivism

The first of these different viewpoints to emerge is entitled post-positivism and this knowledge claim position challenges the traditional notion of 'absolute' truth of knowledge (Phillips and Burbules, 2000, p. 29). In fact, this philosophy is a wholesale rejection of the central tenants of positivism, namely the idea that any individual can see the world perfectly as it

really is. Post-positivism recognises that one cannot be 'positive' unless one proves scientifically a particular outcome, and it is also considered deterministic in that causes are the factors that probably determine effects or outcomes. In addition to being reductionist, post-positivism also relies on the need to test small and discrete sets of ideas. Relying heavily on empirical observation and measurements, the normal outcome to this scientific approach is to support or refute a theory (Creswell, 2003, p. 7). In the post-positivism world, the following assumptions are always key:

- "Knowledge is conjectural and absolute truth can never be found
- Research is a process of making claims and then refining/abandoning them
- Data, evidence and rational considerations shape knowledge
- Research seeks to develop relevant true statements
- Being objective is an essential aspect of competent inquiry"

(Phillips and Burbules, 2000, p. 29)

The ultimate conclusion in a post-positivistic view, is that an individual begins with a theory, collects data to support or refute that theory and then makes revisions and conducts more tests (Creswell, 2003, p. 7).

3.3.3 Constructivism

Constructivism - also called Interpretivism or Social Constructivism, is an alternate knowledge claim that seeks to understand the world, through a number of different views. The basic premise is that the individual must actively 'build' knowledge and skills while information exists within these built constructs, rather than in the external environment (Bruner, 1990; Ullman, 1980; Gibson, 1979). However, most advocates of constructivism agree that it is the individual's processing of stimuli from the environment and the resulting cognitive structures that produce adaptive behaviour, rather than the stimuli itself (Harnard, 1982). Meanings are normally considered complex and varied, with the belief that the knowable world is that of the meaning attributed by individuals, and reductionism is not a normal practice. This latter assumption comes from the fact that when most people are faced with complex, real-world problems set in social systems, problems occur with the use of reductionism and the natural scientific method (Checkland, 1981). Therefore, the goal of Constructivism is to rely on the views of the participants themselves, so in essence the research questions become very broad and general in type. This practice allows the interviewees to 'construct' the meaning of a situation,

through 'social' interactions that maximises the participant's ability to interpret the interactions themselves (Creswell, 2003, p. 8). Interpretative researchers understand their role in the process, namely that "any research on human or social systems will inevitably change them and make a virtue of this fact" (Jackson, 2000, p. 15). In addition, the use of constructivism and active interviews often presents "rich, descriptive narratives at a micro level, to provide detailed descriptions, which allow readers to make sufficient contextual judgments to transfer outcomes, themes and emerging understanding from the case studies to alternative settings" (Pickard, 2002, p. 2). Consisting of a number of assumptions, such as shown below, constructivism as a theory is often considered part of the interpretivism school and a qualitative methodology as shown below:

- "Meanings are constructed by human beings as they engage with the world they are interpreting. Qualitative researchers tend to use open-ended questions so that participants can express their views.
- Humans engage with their world and make sense of it based on their historical and social perspective –everyone is born into a world of meaning bestowed by our culture. Thus, qualitative researchers seek to understand the context or setting of the participants through visiting this context and gathering information personally. They also make an interpretation of what they find; an interpretation shaped by the researcher's own experiences and backgrounds.
- The basic generation of meaning is always social, arising in and out of interaction with a human community. The process of qualitative research is largely inductive, with the inquirer generating meaning from the data collected in the field."

(Crotty, 1998, p. 43)

A key point for the academic utilising this alternate knowledge claim, is that they must recognise that their own view 'shapes' their perspective. Therefore, they must be particularly cognisant of their own actions during the active research phase, particularly during the interviews and data collection portion. It is the development of 'rich pictures' of the individual realities, which gives constructivism it's most useable factors in the rich narratives and detail, but this of course, is also its greatest limitations. The validity of these 'rich pictures' and how their applicability can be transferred to create credible research with rigor, is a crucial point for any academic proposing the use of constructivism as a methodological approach. Attempts have been made to develop a framework in which these 'rich pictures' could be 'fitted' from one context to another (Erlandson, 1993; Lincoln, 1992; Lincoln and Guba, 1985). From these findings, what in essence normally happens is that researchers must 'position' themselves, or actively

acknowledge their role, prior to understanding their interpretation of the research. Therefore unlike post-positivism, the start is not a theory to prove or disprove, but instead the use of Constructivism tends to lead to the development of a theory from the data of the research (Creswell, 2003, p. 9). In comparing and contrasting constructivism to positivism or post-positivism, a more relativist ontology is normally seen, namely one that possesses multiple realities and is more holistic in nature. Likewise the epistemology in a Constructivism methodology is often subjective or interactive with the researcher as part of the subject, with more interpretation and interaction between the researcher and subject, which will tend to lend an outcome which is dependent on context and time, with a working hypothesis that will ultimately lead to a better understanding of the problem (Pickard and Dixon, 2004, p. 2).

3.3.4   Advocacy/Participatory

This knowledge claim takes social constructivism even further to ensure that marginalised or disadvantaged people are still included in the process. To do this, a political agenda of reform is included as part of the research, and in fact the ability to actually change the lives of participants can be a factor as well. Social issues are critical to this area, and typically form the basis or focal point of the research. Because this is a participatory strategy, collaboration between the researcher and interviewees often is very high. The participants tend to play a very active role in the research, and the results are often seen as their 'voice' for reform and change (Creswell, 2003, p. 10). Key features that are often seen in an advocacy or participatory knowledge claim include:

- "Participatory action is recursive or dialectical and is focused on bringing about change in practices
- These studies often begin with an important issue about the problems in society
- The aim is to create a political debate so that change will occur
- This knowledge claim engages the participants as active collaborators."
(Kemmis and Wilkinson, 1998, p.21-22)

3.3.5   Pragmatism

The final alternative knowledge claim examined is the pragmatism, which focuses on actions, situations and conditions rather than antecedent issues as in post-positivism (Creswell, 2003, p. 11). The focus is on solutions to problems, not on the method or process and so any approach can be utilised. Therefore, the consequences of actions, lead researchers to a problem-

centred, real-world orientation in the pragmatic knowledge claim. Often used by mixed methods researchers, the pluralistic strategy has the following key characteristics:

- "Pragmatism is not committed to any one system of philosophy or reality
- Individual researchers have a freedom of choice in their methods, techniques and procedures
- Pragmatists do not see the world as an absolute unity
- Truth is what works at the time - investigators can use both quantitative and qualitative data
- Researchers look to the 'what' and the 'how' to research based on their intended consequences
- Agree that research always occurs in social, historical, political and other contexts
- Pragmatists believe that we should stop asking questions about reality and the laws of nature."

(Cherryholmes, 1992, p. 14)

3.3.6 Knowledge Claim Methodology Selected for this Thesis

Knowledge claims are basically philosophical assumptions which are recognised as part of the basis to begin any research project. Using one of these aforementioned knowledge claims, a paradigm or viewpoint can be determined by each academic toward their subject. In this particular research, the use idiographic logic, to study a series of unique events, coordinated with a combination of deductive and inductive reasoning and the use of a constructivist approach, was deemed the best process to address the particular problem. In the next section, the different strategies of inquiry will be examined to determine the best methodological approach for this particular thesis.

3.4 Strategies of Inquiry

The determination of a methodology that best 'fits' a particular problem, often involves the analysis of the theoretical perspective stance. In order to derive a philosophical assumptions or knowledge claim for this project from a large number of interviews conducted over a long time period, a part of both the background and research phases of the research were used to determine the philosophical assumptions of a selected panel of experts or interviewees. This kind of field research in the form of active interviews is often considered well suited to the study of social processes over time. Ultimately the results of this type of open-ended questioning are delineated later in the form of a general set of requirements and research questions that emerged from information gathered (Babbie, 2001, p. 276). Thus, developing an overall theory is a

complex activity and time consuming activity, far more than just a mere set of findings, and in the end, research is therefore supposed to offer an explanation about phenomena (Strauss and Corbin, 1998, p. 22). In this case, it was the structure of the problem that drove the author toward a particular approach. By its very nature, IO can be characterised as an 'immature' concept due to lack of or inaccurate theory and research, which closely in some instances resembles the current state of this issue area within the United States government.

From the aforementioned sections on alternate knowledge claims, the researcher can normally ascertain the theoretical perspective or philosophical stance, of a particular research project, by studying the information gathered during the process. In addition, the data developed from the participants can normally lead to a particular plan of action or strategy, that is, a method or process. Therefore, the decision on the use of a particular methodology often results from the information and participants' availability, as well as the nature of the problem itself, in addition to the customer's needs, which can drive the researcher toward a particular approach. For like the knowledge claims, strategies of inquiries can be divided into three general areas, with a number of subsets delineated as well:

- Quantitative
  - Experimental Designs
  - Surveys
- Qualitative
  - Narratives
  - Phenomenology
  - Ethnographies
  - Grounded Theory
  - Case Studies
- Mixed Methods
  - Sequential
  - Concurrent
  - Transformative

In later sections, each of these three main approaches will be examined, with a number of specific methods identified. The intent is to not reinterpret these various approaches but instead to compare and contrast them, so that an appropriate methodology can be selected for this particular research. Likewise an overview of the qualities of each of these main approaches or methodologies is reviewed below, with an attempt to differentiate the main features of each.

3.4.1 Quantitative

In a quantitative approach, the hypothesis and research questions are often based on theories that the researcher seeks to test. A theory is considered 'a set of interrelated constructs (variables), definitions and propositions that presents a systematic view of phenomena by specifying relations among variables, with the purpose of explaining natural phenomena (Kerlinger, 1979, p. 64). Theory is therefore often used in a deductive manner and placed toward the beginning of the plan for a study. In doing so, theory in effect becomes a framework for the entire study: an organising model for the research questions or hypotheses and for the data collection procedure (Creswell, 2003, p. 125). In fact, these types of studies tend to operate more within the deductive model methodology of fixed and set research objectives, including an extensive set of definitions early in the research proposal. So in a quantitative approach, an entire section of the research proposal is thus devoted toward explaining the theory for a particular study, as opposed to letting the theory emerge from the data (Ibid, p. 119, 144). Based on this type of process, this methodology is normally considered more 'measurable' than other strategies of inquiry because of the widespread use of metrics and definable features. This is not always the case and the continuum of data between quantitative and qualitative methods is becoming ever more ill-defined as more integration occurs in the fields of research. However, it is probably safe to say that the use of a hypotheses and research questions based on the testing of theories tends to lead toward a 'sense' that this methodology is more quantifiable or measurable.

Typically, a quantitative method consists of experimental designs and co-relational studies or surveys, in which metrics can be obtained, but they can also include elaborate structural equation models (Ibid, p. 13). A survey design provides a quantitative or numeric description of trends, attitudes or opinions of a population by studying a sample of that population. In general, the components of the survey include a design or purpose, the population and sample, the instrumentation, any variables and the data analysis (Ibid, p. 154). General quantitative procedures can also be seen as pre-determined, utilising instrument based questions that collect discrete data to conduct statistical analysis (Ibid, p. 17). In an experiment, investigators may also identify a sample and generalise to a population, with a basic intent to test the impact of a treatment on an outcome, controlling for all other factors that might influence an outcome. In addition, an experimental method normally follows a standard form to include participants or subjects, variables (independent or dependent), instrumentation and materials,

procedures and measures (Ibid, p. 172). The intent of a quantitative approach is thus to reduce the unknown factors to a minimum to make the test as 'scientific' as possible. This reductionistic analysis is a key feature of the quantitative methodology. Thus to summarise, the typical features of a quantitative methodology is the overall emphasis on the post-positivist perspective, with its associated deterministic and reductionistic attitude combined with empirical observation and measurement portions generally leading to the verification of a postulated theory.

3.4.2   Qualitative

In this approach, the typical strategies include ethnographies, grounded theory, case studies, in addition to phenomenological as well as narrative research (Ibid, p. 15). Inquirers typically state questions as opposed to objectives or hypotheses, and these research questions often assume two forms - a central question and associated sub-questions (Ibid, p. 105). In turn, these questions also generally become more like 'working guidelines' rather than 'truths' to be proven later (Thomas, 1993, p. 35). So in reality, often a qualitative approach is considered more of an exploratory type of research, where a topic, variables and theory base are unknown at the beginning of the project (Creswell, 2003, p. 75). Janice Morse states that the characteristics of a qualitative research problem are often centred around the fact that: (a) the concept is 'immature' due to a conspicuous lack of theory and previous research; (b) a notion that the available theory may be inaccurate, inappropriate, incorrect, or biased; (c) a need exists to explore and describe the phenomena and to develop theory; or (d) the nature of the phenomenon may not be suited to quantitative measures (Morse, 1991, p. 120).

Therefore qualitative researchers often use a 'lens' or perspective to guide their study. It is an inductive or evolving methodological design, in which inquirers define fewer terms in the proposal, and the theory or hypothesis is allowed to evolve over time (Creswell, 2003, p. 144). Characteristics of qualitative research often include the following items:

- Review the needs of potential audiences for the proposal.
- If there is some question about their knowledge, present the basic characteristics to use as an example.
- Takes place in a natural setting.
- Uses multiple methods that are interactive and humanistic.
- The methods of data collection are growing and increasingly involve active participation by the interviewees and sensitivity to the participants in the study.

- Qualitative research is emergent rather than tightly prefigured.
- Qualitative research is fundamentally interpretative.
- The researcher views social phenomena holistically.
- Systematically reflects on who the researchers are in the inquiry and is sensitive to their knowledge claims.
- Uses complex reasoning that is multi-faceted, iterative and simultaneous.
- The researcher adopts and uses one or more strategies as a guide for procedure.

(Ibid, p. 144, 183)

Qualitative research is therefore normally considered more interpretative than a quantitative approach, with the inquirer typically involved in a sustained and intensive experience with participants, in which theories are not formulated at the beginning of the study, but instead are allowed to emerge as part of the research process (Ibid, p. 184). Based on the qualities defined above, and the need to deal with 'messy' issues, in this thesis, it is this type of strategies of inquiry, namely a qualitative approach, which is followed.

3.4.3 Mixed Methods

There are significant differences between quantitative and qualitative research as indicated earlier. In fact two different research cultures have arisen from these paradigms with "one professing the superiority of deep rich observational data" and the other the virtues of "hard, general ... data" (Sieber, 1973, p. 1335). These purists on each side have suggested an 'incompatible thesis' that these two paradigms cannot and should not be mixed. In today's world, academic research is becoming increasingly interdisciplinary, with a more complex and dynamic nature, and therefore methodologies that tend to complement one another are gaining in attractiveness. If a continuum with qualitative research anchored at one pole, and a quantitative research can be visualised as anchored at the other, the mixed methods research covers the larger set of points in the middle (Johnson and Onwuegbuzie, 2004, p. 15). Based on the fact that all methods have limitations, the mixing of these different strategies has been suggested as a way to neutralise or cancel the inherent biases of the two dominant methodologies. This is because mixed methods studies have both a qualitative and quantitative foci, and they will bring in both questions and hypotheses in the development of a purpose statement (Creswell, 2003, p. 114). Likewise the use of a mixed method combination approach to research allows the academic in the definition phase of research, to include a separate section for theory development if the study begins with quantitative data collection. If the study begins with qualitative data collection, then

the theoretical terms will probably emerge during the research and will be defined later in the findings or results section of the final research study (Ibid, p. 144). Either way, this approach allows flexibility to the investigative methods, by not limiting the researcher to one prescribed methodology over another.

The three typical procedures often ascribed to this type of mixed method methodology include sequential, concurrent and transformative. The first of these seeks to elaborate on or to expand the findings of one method with another method. This is opposed to the second type of mixed method methodology (concurrent) in which the researcher brings together both quantitative and qualitative data to provide a comprehensive analysis. Finally in the latter procedure (transformative), the researcher uses a theoretical lens as an overarching perspective within a design that contains both quantitative and qualitative data (Ibid, p. 16). Together these strategies give a wider array of options to the researcher, which they can then use to build their approach, design process of research, to ultimately develop a set of actual procedures or methods to conduct their academic studies.

3.5   Methods

The third stage to the theoretical construct or framework for design is the determination of the actual research methods that will to be utilised for the study. While this topic will be discussed in much greater detail in Chapters Four and Five, suffice it to say that the actual method used tends to be driven by a combination of the researcher and data available for the project. In general, any of the three methodologies documented to date (quantitative, qualitative and mixed method) could be used on any academic study, for it is a combination of the knowledge claims and strategies employed as part of the research, as well as the data received, that will ultimately lead the researcher to employ a particular approach. For example, if experiments and surveys are primarily being used as part of their data collection, a quantitative approach may work best. This is because these approaches often attempt to determine the cause and effect of a hypothesis, while reducing the number of variables, all the while trying to prove or disprove a theory. This type of method could fit best with a post-positivist type of knowledge claim, as opposed to a constructive or participatory one. In another example, the researcher maintains multiple meanings from the information gathered in their interviews, using open-ended emerging data, to develop themes, which emerge in the form of narratives or case studies. This

methodology is typical of a qualitative approach, and while normally considered as interpretative (constructive), it can also have an advocacy perspective, that has a social or historical background. The final method discussed is the mixed approach, which tends to be the most pragmatic of the three. Employing procedures borrowed from both quantitative and qualitative methods, it is considered a consequence-orientated, problem-centred and pluralistic approach (Ibid, p. 16). Thus the actual method utilised, whether a survey, interviews or case studies, is often determined by the knowledge claims and strategies of inquiries that best fit a particular researcher's needs and data.

If the knowledge claims are the theoretical perspective of a research project, and the strategies of inquiries are the approach, then the final element is the design process or the method of data collection and analysis (Ibid, p. 5). These latter tasks are the actual techniques and procedures utilised in a project, and the decision on which to use, often just as the data itself, drive the research toward a particular methodology or approach. For example, the difference between closed or open-ended questions, can lead to a pre-determined or emerging approach. Likewise the data itself, whether it is text, image or numeric, often lays constraints on the researcher that could ultimately determine the theoretical outcome of a particular study. So the method with which data are collected and analysed also plays a very important role in the determination of the methodology used by a researcher. Obviously, there must be a match between the original problem and methodology and certain types of social research often call for specific approaches as described below (Ibid, p. 21).

3.6 Summary - The Reasons for Selection of a Qualitative (Interpretative) Methodology

In this chapter, the options for the selection of a certain particular methodology for a research approach have been laid out in detail, and in this particular project, the design framework that was eventually chosen is a qualitative (interpretative) approach. This departure from using an established theory (post-positivism or post-modernism), advocating an action agenda (participatory) or focusing on results (pragmatic), all tends to lead to the examination of the constructive knowledge claim position (Creswell, 2003, p. 6). In this particular framework, multiple and varied subjective meanings and experiences are crucial as the researcher attempted to understand the complexity of the subject (IO) vice utilise a more reductionist attitude. For as

noted by Jackson (2000, p.2) attempts to apply reductionism and the natural scientific method generally, to social and organizational problems, have not been a happy one and have yielded only limited success. Likewise Ashby wrote in a similar vein when he stated that the way not to proceed in approaching an exceedingly complex system is by reductionist analysis (Ashby, 1956). Constructivism is therefore an attempt to help the researcher make sense of, or interpret, the meanings that other's have about the world, where theories are generated or developed to follow a pattern of meaning (Creswell, 2003, p. 9). To reiterate, the following are key assumptions normally associated with social constructivism or interpretivism:

- "Meanings are constructed by human beings as they engage with the world they are interpreting
- Humans engage with the world and make sense of it based on their historical and social perspective
- The basic generation of meaning is always social, arising in and out interaction with the human community"

(Crotty, 1998, p.43).

It is from the reasons stated above, namely the use of a philosophical approach in a constructivism knowledge claim, with a strategy of inquiry that allowed the use of a collaborative and a change oriented focus by the participants, to collect open-ended emerging data from the interviews. All of which ultimately determined the best and primary methodology for use in this particular research (Strauss and Corbin, 1998, p. 18). That is because this research was not begun with any pre-conceived theories in mind, but rather an open-minded approach to an area of study, which allowed a qualitative approach to ultimately emerge from the data.

Therefore, based on these parameters and the data available, the decision was made to use an interpretative (qualitative) methodology in this research. Conducted under the general heading of constructivism research, this methodology allowed the study and comprehension of the subtle nuances in attitudes and behaviours of the participants with regard to the conduct of IO in the United States government as a whole. In addition, these procedures using interviews and in-depth questions also allowed for a greater depth of understanding under a qualitative approach. This is due to the inherent flexibility of open-ended and multi-threaded questions, which allowed the ability to modify and change the framework design at any time. From that perspective, a methodology grounded in the constructivism knowledge claim, which is part of the interpretivist school, appeared to offer the best approach in which to gain insight, understanding and hopefully a meaningful guide to future action. Thus, the use of general

procedures or methodology in the form of a qualitative approach, utilising emerging methods, with open-ended questions, and a variety of data (interview, observation and documental), which allowed themes and theories to develop and emerge, was deemed to be more effective than other methodologies. Finally, the detailed procedures actually used ensured the inclusion of multiple and varied opinions necessary for dealing with the 'messy' issues involved with IO in the United States government. Taken together, it was this selection then of a constructivism approach, as part of the qualitative field as the overall methodology for this research based on the criteria that were available.

Chapter 4 – Methodological Approaches

This research focuses on gaps in the performance by the United States government during IO campaigns and activities with regard perception management and computer network operations. These aspects were chosen, as an attempt to narrow the research focus to relevant issues in this large and diverse topic area. Arquilla and Ronfeldt recognised the divergent nature IO in their book *Noopolitik*, where they discussed the dichotomy that existed between the different elements. The key to research success as related by these authors "was to develop the connection between the two poles, which define opposite ends of a spectrum of security concerns…" and to ensure that "the technological and ideational aspects should be linked by strategic analysis" (Arquilla and Ronfeldt, 1999, p.ix).

Thus a primary goal of this chapter is to investigate a number of philosophies of the qualitative (constructive/interpretative) framework that are appropriate to this investigation. This section illustrates the basic paradigms or traditions that exist and ultimately to justify the actual methodological approach taken in this research. The philosophical background or strategy of inquiry that was thought best suited to this problem was then selected to match the respective issue area. For a research methodology is not only a process, but it is also a way of thinking about and studying social reality (Strauss and Corbin, 1998, p. 3). It is not a 'guaranteed solution', but instead more of a 'structured approach' or a "set of guidelines which stimulate the intellectual process" (Wilson, 2001, p. 6). This is opposed to a method or coding which can be thought of as the specific tasks or steps in a research project. This approach to research was outlined earlier with a format of knowledge claims (Chapter 2), strategies of inquiry (Chapter 3) and detailed procedures (Chapter 4). Therefore in this chapter, the analysis of different methodologies is conducted and the actual method utilised will be laid out in great detail.

4.1 A Review of Qualitative (Constructive) Approaches

In the examination of quantitative and mixed methods options, it was the use of qualitative procedures involving open-ended questions and interview data, which became the more appropriate approach to this 'complex' issue of IO, after this academic area was thoroughly reviewed. IO is considered a 'messy' problem, and so it is difficult to quantify or analyse in a reductionist format. Specifically as described in Chapter 3, the constructivist position was

selected because it promoted a better understanding of this particular problem set. Likewise the use of multiple participant interviews with different 'weltanschauung' (roughly translated this means 'worldview') and the generation of theory from data was seen as a better 'fit' to the conduct of IO research. This is opposed to a more post-positivism approach with its reductionist and deterministic nature, or an advocacy approach that is change or issue oriented, or a pragmatic approach which tends to focus too much on problem solving and reality. None of these other types of qualitative approaches 'fit' this particular research problem as well as, the constructive framework which was outlined in the preceding chapter. In addition, because constructivism is part of the interpretative (qualitative) school, it falls into the category that some analysts believe might provide data richer in meaning, than similar quantitative types especially when dealing with perception management type issues and human emotions (Strauss and Corbin, 1998; Stern, 1980).

4.1.1　　　　Analysing Research Traditions

Qualitative research is often represented by an interpretative or natural approach, grounded in philosophical assumptions, with multiple sources of information and a narrative text utilised by the researcher (Creswell, 1998, p. 15). The types or 'varieties' of research traditions were examined previously with a qualitative (constructive or interpretative) approach selected from the available options (Tesch, 1990). Some of the qualitative strategies that could have been used include Ethnographies, Case Studies, Phenomenological, Biography or a Narrative Research such as Grounded Theory. These traditions are derived from a wide variety of disciplines including the humanities, social sciences, psychology, philosophy, sociology and anthropology (Creswell, 1998, p. 5). These approaches can also be grouped together as action research, which is an iterative process that combines theory and practice through change and reflection with a mutually acceptable framework (Avison et al, 1999, p. 94). Likewise qualitative strategies can also be analysed in a number of ways. For example, in this research, the traditions were examined by foci or manner in which data is collected, their central purpose or foci and method of collecting data, as well as the theoretical perspective, including their relationship to social science theory (Creswell, 1998, p. 37, 112). Finally, the organisational structure itself must be examined, if it involves people in multiple hierarchical layers, which tend to be 'messy' or 'fuzzy', because of different and conflicting objectives, perceptions and

attitudes (Avison et al, 1999, p. 95). In the following paragraphs, each of these approaches to differentiating research methodologies will be evaluated and investigated to determine their suitability for this research.

The analysis of these different qualitative approaches is crucial to the successful selection of a research tradition, as shown in Figure 4.1. For example, a biography or biographical study can be defined as the "studied use and collection of life documents that describe turning-point moments in an individual's life" (Denzin, 1989, p. 69). This is opposed to phenomenological approach which is derived from the concept of 'lived experiences', 'phenomenon' or 'consciousness of human experiences' (Polkinghorne, 1989). First developed by Husserl, in the late 19th century, the phenomenological approach emphasised a philosophy on 'meaning', rather than causal explanation of human behaviour (Jackson, 2000, p. 46). For if phenomenology emphasises the meaning of an experience for a number of individuals, then the process of studying their reaction to that phenomenon, is called grounded theory. This tradition attempts to develop hypotheses to the way humans react to these phenomena, which in turn generate theories based on these primary interviews. This is an empirical approach to the study of social life through qualitative research and analysis that codes the data (Glaser and Strauss, 1967). By relying on fieldwork to generate interview and ethnographic data from which to analyse human actions, the conventional grounded theory has focused on generating the 'basic social processes' (Clarke, 2003, p. 557). This is different to a biographical project that often involves a single individual as opposed to a phenomenological or grounded theory investigation, which typically utilises multiple interviewees. Likewise Ethnography, which describes and interprets a cultural or social group as a whole, is based on their learned patterns of behaviour and customs (Harris, 1968). An even more rigidly bound system is the Case Study, which can have multiple constraints, all of which affect the data (Creswell, 1998, p. 112). In addition, the prolonged time period involved in an ethnographical investigation differentiates it from a case study, which is bounded by time and place as part of a system (Stake, 1995; Merriam, 1988). Finally, to further differentiate these different traditions, grounded theory and case study based projects require the researcher to locate the 'right' people from a larger sample as opposed to an ethnographical project which studies the group or culture as a whole. In the case of this particular research, the interviewees were a diverse group, located around the world, and were not necessarily confined by their positional, authoritative or regulatory occupation. These factors tended to point to a

grounded theory or a modification of a grounded theory as the best approach with regards to the collection of data or foci.
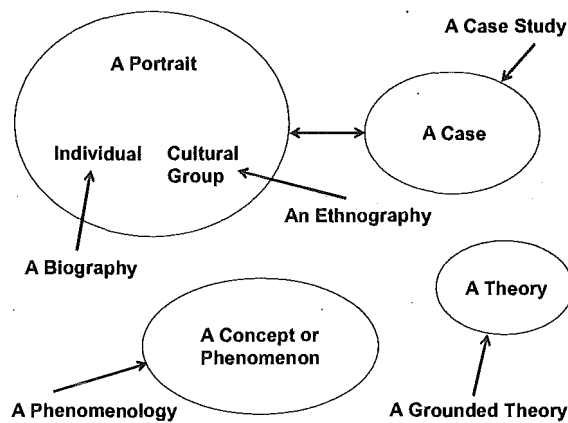
Figure 4.1 – Differentiating Traditions by Foci

Likewise, qualitative approaches can also be approached from a theoretical perspective. Related to the discussions of knowledge claims and strategies of inquiry in Chapters Two and Three, these are philosophical assumptions or paradigms that tend to guide the researcher toward a particular methodology. These include the ontological, epistemological, axiological, rhetorical and methodological approaches, each of which will be described below. For as stated in chapter 3, a methodology is a description of how to think about the process of analysis prior to doing it, that is "thinking about how to think… which for many an unnatural process is" (Wilson, 2001, p. 8). Knowledge claims can then simply mean that the researcher starts a project with certain assumptions about how they will learn and what they expect to learn during a particular inquiry (Creswell, 2003, p. 6). The reality of the researcher depends on their viewpoint taken, or the 'framework', methodological approach or paradigm, any of which can ultimately provide a philosophical background for the research. One of these frameworks that can be used to serve as a viewpoint is the ontological approach, where the researcher often asks questions, such as - What is the nature of reality? (Moustakas, 1994). This is more of a post-positivistic approach as opposed to epistemology, in which the researcher attempts to minimise the 'objective separateness' between themselves and the research. For instance, in an epistemological framework, the researcher often becomes in effect an 'insider' (Guba and Lincoln, 1988, p. 94). It is these methods, that utilise epistemologically and ontologically based approaches in the pragmatic mode, which have the ability to use grounded theory as a perspective so that in fact that the researcher can be an 'acknowledged participant' from their knowledge claim background

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(Clarke, 2003, p. 555). On the other hand, Axiological approaches expose the biases inherent in research, to question the role of values and will often include the researcher's own interpretation as part of the final analysis. This type of weltanschauung (worldview) is followed even more dramatically in a rhetorical philosophical type of assumption, which is a more generalised study that focuses on the use of metaphors, with much of the writing done in the first person and including personal stories from the interviewees in the research narrative (Lincoln and Guba, 1985; Stake, 1995). This is opposed to the methodological approach, which is a conceptualisation of the research as a process. In this tradition, the researcher works from detail to general, using inductive logic to allow a methodology to emerge from the data. This type of paradigm or framework was mentioned earlier in Chapter Two, with the acknowledgement that in this particular research, a combination of both types of reasoning (inductive and deductive) was ultimately utilised.

The researcher can also decide on the type of qualitative methodology based on how their research fits into general social science theory. In this traditional process, a research project attempts to frame the study or develop a theoretical lens to explain, predict and generalise about how the world operates (Creswell, 1998, p. 84; Flinders and Mills, 1993). This classic process has a continuum of study that advances from an early research phase of gathering data and asking questions (before) to the data collation and ultimately examination and analysis phase (after). As shown in Figure 4.2, the five traditional approaches of a qualitative methodology mentioned earlier in this chapter all fit on this continuum in a variety of different areas, based on the method with which they are conducted. For example, in an ethnographical or phenomenological approach, researchers tend to begin their studies with strong views or frameworks on how they will conduct their research. All of these methodologies centre on some type of theoretical construct wherein the individual 'voice' and the interpretative nature of the research. This as opposed to biographies and the case studies that tend to vary considerably in their use of theoretical constructs, hence a position more toward the middle of the methodological construct. At the other extreme is grounded theory, where a tremendous amount of data is collected and analysed before a construct begins to emerge, with more recent work shifting toward more constructive assumptions and epistemologies (Charmaz, 1995; 2000). With deep roots in symbolic sociology and pragmatic philosophy, the grounded theory method can

also be viewed as a total theory and methodology package with an interpretative, constructionist epistemology (Clarke, 2003, p. 559).
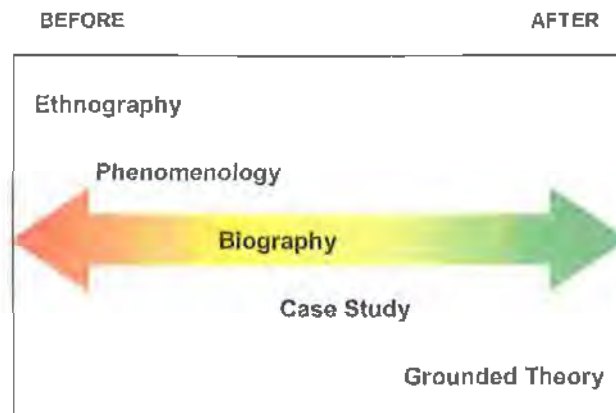
Figure 4.2 - Extent of Theory Use in Qualitative Approaches

4.1.2   Narrowing the Selection Criteria

The path in this thesis to a qualitative approach and a specific research method was not a straight-forward one. The subject topic and research material tended to favour an interpretative methodology, one that could effectively model the effects of IO in the United States government. This need to 'construct' theory and develop themes and hypotheses as the research was conducted, tended to lead toward qualitative traditions such as international relations, organisational, decision-making and systems methods. Because the researcher had an extensive background in international relations theories, it was only natural that the first analysis of the problems associated with IO began here. The inability of this particular type of theoretical construct to answer the demands of information revolution, however eventually meant that all types of international relations theories were ultimately abandoned in the course of this research. Likewise, research was also conducted in organisational or decision-making theory on the same premise, namely that this methodology could help to understand or model the use of IO in the United States government. Unfortunately, this was not to be the case and this type of methodology was abandoned as well. Finally systems approaches were also examined as a means to finding an appropriate process to utilise for the study of IO. In the next several sections, each of these research processes is laid out in detail to document the decisions made toward finding the best interpretative approach to conduct this research.

4.2   International Relations Theories

Obviously from these discussions, developing a possible methodology in which to frame and conduct this research on IO was very difficult. All three major approaches including quantitative, qualitative and mixed methods were examined, to determine the appropriate theoretical construct that would best apply to the role of this research area in the United States government. In general, theories are considered as internally consistent sets of empirical prepositions that allow situation to be explained and predicted, or in other words, theory allows the researcher to describe, explain, predict and prescribe. The traditional international relations theories such as Realism, Neo-Realism, Liberal Internationalism, Complex Interdependence Theory, Social Constructivism or Collective Security have together not been able to adequately model the complex changes that are occurring in the Information Age. At first glance, this would not seem the case and in fact, IO would seem a natural area for the advancement of the use of these types of common international relations political theories. There are elements of all of the major categories (liberal, realism and alternate) in IO, and it could be thought that one of these constructs would certainly 'fit' and encompass their attributes. However, after careful analysis, it appeared that this is not the case. Each of these 'new' concepts, which are the core of the information revolution, are compared in this chapter to the basic philosophical ideas of these classic international relations constructs and in the end, these theories were considered inadequate as will explained in greater detail in this chapter.

One of the reasons for this is that a number of these traditions revolve around the use of the nation-state or regimes, which typically incorporate a tacit or explicit set of norms and/or rules around which actors expectations converge. Of course, this is the opposite of anarchy, in which no government or policing occurs at or above the nation-state level, so there are no developed sets of laws or sense of community. The problem with these concepts and the growing power inherent in the information revolution is that the authority that is normally focused at a centralised and hierarchical manner for the 'traditional' international relations types of scenarios is being upended by the rapidly growing influence inherent in the new information age. Thus, from the research process, and the results obtained from the interviewees, it is the democratisation of power and the 'flattening' of communications and networks as well as organisations, that makes this issue area so difficult to place in a classical international relations theoretical context.

Liberalism	Realism	Alternate Theories
Liberal Internationalism	Neo-Realism	Marxism
Neo-Liberalism	Decision-Making	Critial Theory
Utilitarism		Feminist Theory
International Regimes	Rationalism	Green Theory
Complex Interdependence	Functionalism	Post-Modernism
International Political Economy	Neo-Functionalism	Constructivism

Table 4.1 - Categories of International Relations Theories

Typically divided into three broad categories - Liberalism, Realism and Alternate

Theories, Figure 4.3 shows those different categories that comprise international relations

theories as well as a number of sub-theories branched off from the dominant themes. While this

table is not a list of all of the possible international relations theories available, this chart and the

subsequent discussion, will cover some of the major options and gives the reasons why these

constructs were not considered the best methodologies to use in this study.

4.2.1   Liberalism

To begin this analysis of traditional constructs, the first 'recognised' international

relations theory in the form of liberalism will be examined. Arising from the Treaty of

Westphalia in 1648 and the development of the interstate system, Liberalism also can be

attributed to philosophers and scholars of this period, when mankind shifted to a period of

enlightenment and scientific discovery in the Middle Ages (Zacher and Mathew, 1995, p. 111).

For with the rise of nation-states came sovereignty and a centralised power in a federated

structure. Therefore, the advent of the modern systemic structure, aligned with the rise of

Liberalism and what many academics consider the 'original' international relations theory that

developed from classic foreign policy development and diplomatic interactions (Owen, 1998, p.

145). In addition, as the nation-states evolved in Europe, a balance of power also developed as

the different leaders and monarchies attempt to expand their influence. Early 'rules' were set as

these kings attempted to limit their 'wars' to a restricted nature, designed more to readdress

differences within the constraints of the system, rather than incorporate drastic changes.

Likewise, colonies were founded as technology developed the need for new markets, and

commerce expanded beyond the continent.

While Liberalism is often considered the original international relations theoretical

construct, in fact all three of the major streams of international relations - realism, liberalism and

alternate theories can in fact be traced to key philosophers of this period, namely Hobbes, Kant and Grotius respectively (Doyle, 1986, p. 1164). These philosophies developed concepts which are still studied and considered essential to the focus of international relations today. In fact, all of these high-level doctrines and diplomatic theories were attempts to link together the nascent and evolving nation-states in Europe, to reduce the then constant state of warfare in that region (Zacher and Mathew, 1995, p. 113). Key concepts like the balance of power were emerging that allowed the nations and their leaders to eventually develop a full spectrum of choices that range from transitory alliances to permanent alliances and regimes. The rise of nation-states in Western Europe was not a smooth or predictable transition, as evidenced by the French Revolution, with the evolution of nation states drastically changing the political landscape as well (Ibid, 112). No longer were kingdoms ruled on the whims of the monarchy and instead the leadership of these nations began to appraise the power of the masses. Wars were no longer fought for limited gains and instead the beginnings of total war were felt (Owen, 1998, p. 143). The ability of a nation to mobilise its people, and the industrial base to prepare for conflict were rapidly becoming dominant factors in the international arena. However, order was still preserved in Europe after the Napoleonic Wars as the Concert of Europe is founded in 1820. Masterminded by Metternich of Austria, as well as his diplomatic colleagues from the Great Powers, this system of alliances and collective security was to last almost a century until World War I. France was once again brought back into the fold of nations, while Liberalism survived as the pre-eminent international relations theory based on the balance of power principles (Doyle, 1986, p. 1157).

Nevertheless, there were challenges to this predominant theoretical construct because of the particular environment of diplomatic activity and military operations of this era. The 'international' character of these ideas is obviously evident, but what is probably more interesting is the fact that much of this diplomatic activity tended to be very insular and conducted in a closed environment. One of the major factors of the balance of power construct often included the 'linking' together of nations in alliances or ententes to mitigate the possibility of armed conflict (Zacher and Mathew, 1995, p. 114). Therefore, international relations during this period was in fact much more of a 'closed' relationship of the principals and the general willingness to never take any action 'too far.' Likewise another factor was the consensus that leaders of these nascent nation states would ultimately work for the 'good of mankind' (Kegley,

1995, p. 4). This attitude pervaded much of what is considered classic liberalism, liberal internationalism and liberal utopianism. As will be examined in follow-on sections, some academics have found the general liberalism construct wanting when there is an examination of actions from a 'selfish' or realist viewpoint thus, the emergence of Realist and Neo-Realism theories, as will be shown in the section 4.2.2..

4.2.2   Realism

Realism arose from significant international events such as the revolts in the Germanic States in 1848 and the Crimean War in 1856, which were major conflicts that threatened the peace developed by the Concert of Europe, and hence the limitations of Liberalism (Holsti, 1995, p. 37). Both of these disruptions were very important because in the end, virtually every Great Power was involved in one way or another in these wars (Terriff et al, 1999, p. 33). Other threats to Liberal Internationalism also occurred as the once feudal lands of Germany began to coalesce under the leadership of Bismarck with two wars of German secession in 1867 and 1871, in which this dynamic leader once and forever brought together the principalities of the German nation. In doing so, Bismarck revolutionised regional politics by creating a very strong nation in central Europe that in essence could threaten any of the other Great Powers. The advent of 'RealPolitik' by Bismarck forever changed the balance of power within Europe in the 1870's as well as ultimately forming the basis the Realism movement (Evera, 1998, p. 79). This theory was later given academic rigor by Carr and Morganthau, who published their academic tomes in 1939 and 1948 respectively (Terriff et al, 1999, p. 11). This major portion of international relations theories has been instrumental in shaping and changing the emphasis away from Liberalism, because realists focused on the states, with a cyclical approach to world affairs. These academics doubted the ability of the nation-states to maintain sustained cooperation because they believed in the concepts of anarchy, mistrust, conflict and the use of force (Waltz, 1990, p. 25). These beliefs however ran contrary to prevailing Liberalism theories and over time, counter-arguments arose in the form of Neo-Liberalism and Alternate theories as mentioned earlier. For one of the problems with Realism, has always been its lack of predictive powers, especially with regard to the demise of Communism and the Cold War (Kegley, 1995, p. 5). Thus it is natural that other theories would arise as challenges to this theoretical construct in the late 1970s and 1980s, such as Complex Interdependence, International Regimes, etc., as

mentioned previously.

Of course, the Realists countered with new theoretical constructs of their own in the form of Neo-Realism. The prime advocate of this update to Realism was Kenneth Waltz, who published two seminal books, *Man, the State and War* in 1959 and the *Theory of International Politics* in 1979, both of which stressed anarchy and its consequences on the fundamental reality of world affairs (Terriff et al, 1999, p. 14). Because Neo-Realists believe that anarchy shapes the nation states, this deterministic viewpoint advocates that countries and their leaders do not have much freedom of movement or choice. Neo-Realism focuses as does Realism on nation-states, with anarchy as a central component, from a systemic perspective, and Waltz believed that anarchy socialises nation-states to be similar in their actions (Ibid, p. 36). This is key and forms the basis of Neo-Realism, in the fact that Waltz argued that anarchy socialises units to be functionally similar. Interesting enough, but this leads to the question that if the power of information is also not a socialising force as well, would it not force nations to act in a standard manner? These arguments by Waltz were spread over both books, with a focus in the first book, on the three levels of interaction between nation-states and the latter book, on the systemic level, in which he advocated that anarchy is a key and central theme. A final portion of the Neo-Realist theory concerned the distribution of power. Because these academics argued that anarchy is constant, and that it socialises nation-states, the only change can ultimately arise in their mind, is one that will only come from the redistribution of power (Holsti, 1995, p. 39).

Neo-Realism has not proven to be an adequate theory to explain the changing role of international relations, especially in the information environment. This dichotomy was noted as well by Myriam Dunn, where she examined all of the traditional international relations theories as a methodological basis for her dissertation, and in turn dismissed each of them except for one (Dunn, 2002). In the end, she reluctantly settled on a newer version of Realism (Structural), but still regarded this theory as somewhat inadequate to truly explain the changing environment of IO. Other academics have agreed, that Neo- Realism has its inconsistencies, and ultimately major flaws in its use as a tool for modelling the power of information (Glaser, 1994, p. 60). This last section on neo-realism also emphasises the true constraints of this international relations theory, and some academics felt that it was best situated for those political constraints and factors of the Cold War (Kegley, 1995, p. 8).

For in reviewing the primary themes of this research and its emphasis on information

with regard to international relations, the distribution of power and how it is changing is a major factor that needed to be considered. It must be understood within the whole concept of IO, is that power has been transferred to the people in a more horizontal structure. It can be asked if it is true, that if there are really no alternate choices available to nations as advocated by Neo-Realism, are leaders constrained in their actions, and ultimately, is anarchy relevant to the information revolution (Ibid)? Once again, IO does not limit choices and in fact it is just the opposite, with the information revolution broadening the number of selections available. A final question that of course must be answered is that if the power of nation-states is distributed to the masses as emphasised in Chapter One, does that mean that the Neo-Realist theories are still current or were they rendered obsolete by the end of the Cold War (Ray, 1995, p. 341)?

For a careful examination of the aforementioned international relations type of constructs such as Liberalism or Realism, or any of the Alternative Theories, brings forth the conclusion that none of these theories were adequate for this study because they do not accurately reflect the changes that have occurred in the new political environment. They do not meet the criteria of an interpretative approach, with a grounded theory, that uses inductive and deductive reasoning. So in the end, an international relations type of theoretical construct was ultimately not selected.

4.3   Organisational or Decision-Making Theory

International relations theories are not the only types of methodologies or processes that are available to examine for this thesis, because the development and evolution of IO within the United States government also demonstrates many of the classic examples of decision-making theory. From the 1930s onward, three different models of management competed for precedence in the academic fields of organisational theory: specifically the traditional approach, human relations theory and systems thinking (Kast and Rosenzweig, 1981). Other quantitative methods such as surveys, experimental test plans, statistical analysis, and sampling are also available as a methodology. However, based on the pre-existing knowledge philosophical assumptions, an interpretative or qualitative approach was determined to be the best methodology for this hypothesis. In addition, upon examination of these three elements of inquiry (knowledge claims, strategies of inquiry and methods), the area of decision making theory was also determined to be a possible source for a methodology for this thesis. For as Wheatley summarised in his writings on organisational theory, the role that chaos plays with leadership and relations between people

and their environmental settings is very important (Wheatley, 1992, p. 20). He felt that enterprises can be managed through broad concepts and only a few guiding principles, and not rely on elaborate rules, task definitions or structures, but instead to trust in chaos and self-organisation (Ibid, p. 21). Capra noted similar relationships in his three theoretical concepts which brought in an ecological viewpoint, specifically around the beliefs that the 'pattern of organisation, structure of systems and process' were all important (Capra, 1996, p. 153). He believed that these three concepts are interdependent and when taken together, create what Capra calls the "key criteria of a living system" (Ibid, p. 156). Therefore based on these concepts and further analysis, the following organisational theories models and decision-making theories will be defined and analysed as to the applicability to the hypothesis of this thesis centred on the use of IO in the United States government.

4.3.1   Rational Actor Model

With regard to Decision-Making Theory, most of these will be classified into two types: classical and behavioural. Often the classical model can also be called the rational actor, normative or utilitarian approach because it assumes that events are well controlled and certain (Loke, 1996, p. 5). The Rational Actor Model attempts to explain international events by recounting the aims and calculations of nations or governments (Allison, 1971, p. 10). The emphasis in this model is on the nations and how they will act in a prescribed manner that can be studied and analysed by academics. Under this theory, the state's actions are considered unanimous and constitute that particular units posture toward a unique dilemma. The Rational Actor Model generally speaking also believes that the nation state is the only player on the world stage. This is a very important fact, in the idea that the state is the sole actor in the world politic. So firmly entrenched is this idea in international relations theory that it was not until relatively recently that other models have begun to arise and gain prominence. Understandably the Rational Actor Model is a very general approach to looking at state's actions and academics in the international relations field have long recognised the inherent limitations in this model. However if a theory is to be understandable it must be somewhat simple and normally this may mean smaller or more uniform type of units. Therefore while theorists have understood the deficiencies associated with Rational Actor Mode, for a variety of reasons it is still being used because it can explain many concepts. That is because in this theory, actors understand their

goals and objectives, they know that for each action, consequences will result and they as rational actors will be able to rank these in order of preference. The actor's also understand the alternatives that are available and these can be ranked within their respective categories for consequences and results. The variations that arise from these consequences will often affect the accuracy of a decision-maker's choice, but normally the actor will select their choice as to which action ranks highest in the listing of attributes.

Thus the Rational Actor Model theory assumes a lot of facts are known, and those involved in large bureaucracies understand that that is not always the case. There are many factors that are not going to be known, so it will be very difficult for the actor to rationally 'rack and stack' his alternatives, which often instead forces decision-makers will often make choices based on incomplete or non-existent data. For example Selznick in his analysis of organisations, found that he diverged considerably from the traditional view that they were instruments of rational action (Selznick, 1948, p. 13). He saw that organisations instead were cooperative systems with both formal and informal aspects, and that rational action embodied in the formal structure was modified by the social needs of individuals (Jackson, 2000, p. 64). Such cooperative systems were also subject to the pressure of their environments, to which some adjustment had to be made. Organisations were therefore more often found themselves acting as 'adaptive structures' that had to modify themselves to their goals and change themselves in response to environmental circumstances (Ibid). In addition, as mentioned earlier, the state does not always act in a unified manner. There are many factors that can affect a nation's policy and one of the primary issues is the nature of organisational processes. The famous speaker of the United States House of Representatives Tip O'Neil once said "that all politics is local," and he was correct. This logic applies just as well to bureaucratic policies. The United States government is not one monolithic organised bureaucracy but instead a sprawling mass of different departments, agencies and activities all competing for the same budget dollars. Each organisation has its own distinct culture and in fact, it is very much like pre-Westphalia Germany, with a number of loose federations and kingdoms existing somewhat peacefully. While nominally the President is in charge of the government, in fact it has often been noted that the power of the administration has become much diluted compared to a century ago. While many people may think that this is a recent phenomenon, look at what President Franklin D. Roosevelt said about his dealings with the government bureaucracy over 60 years ago.

The Treasury is so large and far-flung and ingrained in its practices that I find it impossible to get the actions and results that I want... But the Treasury is not to be compared with the State Department. You should go through the experience of trying to get any changes in the thinking, policy, and action of the career diplomats and then you know what a real problem was. But the Treasury and the State Department put together are nothing as compared with the Na-a-vy...To change anything in the Na-a-vy is like punching a feather bed. You punch it with your right and you punch it with your left until you are finally exhausted, and then you find the damn bed just as it was before you started punching ...(Allison, 1971, p. 86).

4.3.2   Organisational Process Model

Hopefully, these analogies lead to the consideration of the fact that bureaucratic politics are not all that rational and that there are many other factors to consider in determining what makes a state act the way that it does. Kenneth Waltz in his seminal books, *The Man, the State and War* as well as *Theory of International Politics*, also emphasised that states were forced to act the way that they do, because of the international systemic factors. If you substitute individual bureaucrats for nation-states and the interagency process for the world politics system, then as stated earlier, portions of Waltz's theories could apply with regard to IO. Likewise, if organisations are viewed as systems, a much richer picture of these groups is provided than supplied by the traditional and human relations model (Jackson, 2000, p.125). So in effect, these government officials are affected by the overall bureaucratic process at the systemic level that constrains their ability to act in an independent manner. However, this analogy notwithstanding, individual bureaucrats can often make decisions that, once completed, will override national or even strategic concerns. This idea is what Allison has referred to as the Organisational Process Model. He believed that governmental behaviour can therefore be understood less as deliberate choices and more as outputs of large organisations functioning according to standards of behaviour (Allison, 1967, p. 67). This portion of decision-making theory often refers to the second category of models as the descriptive type. Also called behavioural, cognitive or heuristic, these approaches usually try to take more elements of decision making into consideration (Loke, 1996, p. 6). This line of thinking often fits well with organisational politics and bureaucratic operations because they tend to be very complicated, simply because they are not monolithic entities. Organisations have routines, and most behavioural patterns are determined by previously established procedures. In addition, they can be represented as, or primarily geared to, ensuring survival and continuity of themselves as systems. So like

organisms, organisations were only acting and reacting to influences upon them in ways best designed to ensure their own survival (Jackson, 2000, p. 63-64). While it may be interesting to watch politicians talk about change or initiate a new focus in a particular area, more often than not, that revolution will be overcome by the bureaucratic process. These routines normally consist of:

- Standard Operating Procedures
- Programs
- Repertoires

Each of these processes can and do contribute to the method in which decisions are made. Thus although it still cannot explain everything, often the Organisational Process Model can be very effective in determining the outcome of a particular scenario if the dynamics of the organisations involved is understood.

4.3.3 Bureaucratic Politics Model

Organisations, just like the government are also not a monolithic group. There are individuals within activities and agencies that have agendas, and these have to be considered when developing models for decision-making. This model is referred to as the Bureaucratic Politics Model, where bargaining is a central tool. It is this emphasis on coalition building within the Bureaucratic Politics Model that is important, because it often explains why decisions that seem to be made rationally at the time, may later when viewed from a distance seem inconsistent with a nation or organisation's goal (Peterson, 1996, p. 23). So even though it would be nice to try to discount these factors in constructing models for international relations theory, often it cannot be done because that decision is reached as a result of the actions of a number of players. These bureaucrats are acting and making decisions on many different issues based not on a strategic objective but mainly by the results from politics and how it affects them personally (Ibid, p. 21). The organisation as a system approach views survival rather than goal attainment as their raison d'être (Jackson, 2000, p. 126). Interestingly enough, much of the research in this area focuses on the individualistic societies like North America or Australia, where it is perfectly normal for an individual to not only make decisions, but to also be responsible for the consequences as well This is a very complex arena and much more study is required. Typically though in order to satisfy all of the stakeholders, decisions are often watered down or are

compromised so much sometimes as to be virtually useless. Selznick recognised this when he noted that organisations made adjustments in response to both internal and external factors, independent of the individuals involved, so in fact organisations were acting like organisms, reacting to influences in ways best designed to ensure their own survival. Katz and Kahn also noted as much, namely that organisations are systems with their own goals, and their main purpose is to maintain a steady state and to survive (Jackson, 2000, p. 65).

Governments are huge bureaucratic machines and they need professionals to make things happen efficiently within this environment. Some excel better than others do, but nonetheless all must operate in the same arena. Power is shared and in a zero sum game, differences will occur and it is within this construct that decisions are made and politics is at its most important role. When it comes to international politics, many of these rules would be overcome by the sway of presidential pressure, however, that is not always the case. For not all bureaucrats owe their position or authority to the President, and therefore unless a decision affects them directly, presidential pressure usually is not a factor in the bureaucratic process.

In describing the mindset of interagency bureaucrats, the analyst must be very careful about which cultural biases are present during that analysis. A number of incremental key decisions that seem totally logical at the time may over the long-term lead to disastrous results (Fisher, 1997, p 14). Therefore, no matter what theory is used to analyse a situation, care must be taken about reading too much into its utility. However for the sake of this discussion, Rational Actor Model, Organisational Process Model and Bureaucratic Process Model are good models to analyse the decision-making process within the governmental hierarchy, but they do not necessarily reflect a good theoretical construct for understanding the role of IO across the United States government. This is because, while the decision making models may be good at attempting to explain the way that federal bureaucracies operate, the role of information is drastically 'flattened' hierarchies even more, with power being rapidly pushed away from centralised governmental entities. In addition, organisational theories also do not meet the criteria of an interpretative approach, with a grounded theory, that uses inductive and deductive reasoning, as discussed earlier. So as a theoretical process, in the end, neither decision making nor organisational theory was deemed suitable for use as methodology as part of the theoretical construct or framework for this research.

4.4 Systems Theory

The scientific revolution as mentioned in Chapter Three spawned the positivist movement and with it the development of scientific theory and the use of reductionism to understand and analyse problems. However, not all issues can be resolved by breaking them into smaller parts, and in fact, many problems can only be resolved if they are examined as a whole or in a 'holistic' manner. "Problems occur with the use of reductionism and the natural scientific method... when we are faced with complex, real world problems set in social systems...which are the very problems we encounter in abundance today and which most threaten our organizations and societies" (Jackson, 2000, p. 10). Therefore a reaction to the failure of natural sciences and to these complex issues was the growth of post-positivist or systems thinking. Central to this change was a similar increase in the use of the term 'holism' or the need to review a subject as a whole vice a series of parts. This latter idea is the crux of systems thinking, for those academics, who advocate system approaches, who will want to understand the problem as a whole, and to do so, they may often want to use models rather than laboratory experiments to determine their solutions. This is because "models are used most often whenever we reach value judgements about a particular situation though frequently they are implicit and unquestioned (Wilson, 2001, p. 1)." In addition "models of any kind are not descriptions of the real world, they are descriptions of ways of thinking about the real world" as shown in Figure 4.4 (Wilson, 2001, p. 4).

Unique, Valid, Non-Contentious

Descriptions of Reality

Are <u>NOT</u> Possible

⇩ Leads

to

The Need to Distinguish Between

Reality   and   ways of describing how
                                    to think about it

The
Real
World

Ways of Thinking about the
Real World (Concepts, Models)

- Complex   - Simple
- Messy   - Precise
   - Contains People   - Defensible
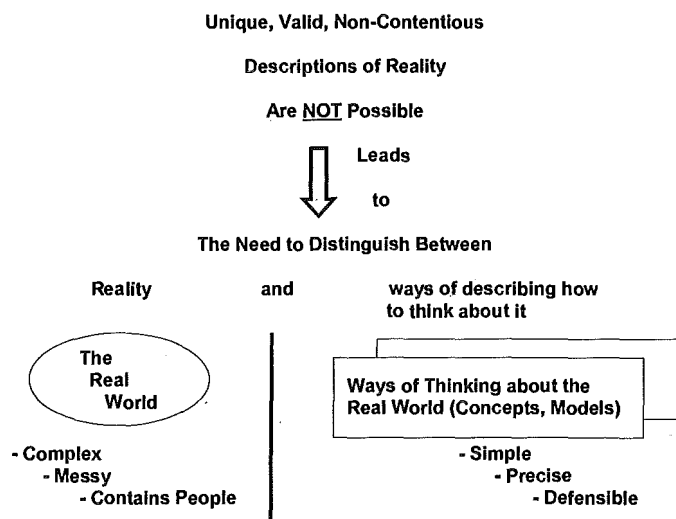
Figure 4.3 – A Necessary Distinction for the Analysis of Organisational Problems
(Wilson, 2001, p.5)

Utilising ideas from Aristotle and Plato, the systems tradition later grew from philosophers such as Spinoza, Kant, Hegel and Marx. Spinoza for example, advocated against reductionism with concepts such as the illogicality of trying to break the universe into smaller parts (Honderich, 1995). Likewise Kant, the philosopher par excellence of the Enlightenment, was eager to push rational thought to the limit, but he was also aware of limitations imposed by human themselves on reductionism (Jackson, 2000, p. 35, 44). Hegel on the other hand, believed that nothing was real except the whole and that reductionism was not a substitute (Russell, 1961). So while separate items may exist, they were in reality only aspects of the whole, a notion which eventually became Hegel's famous dialectic. In relation to this research, Hegel's dialectic also tends to lend itself to the notion of deriving a process from inquiry, which matches quite well to the interpretative approach. The final philosopher who contributed to the development of systems thinking was Marx, who is considered by many to be a 'dialectical materialist'. In his classic writings, he tackled the complex issue of class struggle in a holistic manner. As attributed to Althusser, Marx's best known interpreter, social totality is the interrelation between "relatively autonomous" instances, and that history is not pre-determined.

Taken together, these philosophers have contributed to a view that encompasses the totality of the system, or a holistic viewpoint, which can be considered to be very systems oriented, and has served as an influential backdrop to the growth of this theoretical methodology (Jackson, 2000, p. 45). These academics were searching for an interpretative outcome or a series of emergent properties that would arise in their research as it evolves in a holistic manner (Ibid, p. 1). Systems thinking can therefore also be seen as a reaction to the failure of natural science, or the scientific revolution that attempted to solve complex 'messes' or real-world problems that were set in social systems (Ackoff, 1981; Checkland, 1981). Systems thinking is different because it is committed as part of holism, to looking at the world in terms of 'wholes' that exhibit emergent properties, rather than in believing in a reductionist fashion (Jackson, 2000, p. 18). Likewise, the addition of people into the problem adds complexity to the situation, when they play multiple roles, each with their own interpretation of the system, and what they are trying to achieve (Wilson, 2001, p. xiv). Finally, in addition to the holistic viewpoint, the 'problem-solving' applicability of systems thinking to real world problems is also seen as a benefit.

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The recent history of this holistic approach started with publications on cybernetics and the General System Theory, which gained huge popularity in the 1950s through the 1970s, as systems thinking became a major influence on a number of academic fields including the management sciences (von Bertalanffy, 1950, 1968; Wiener, 1948; Jackson, 2000, p. 2). Conceived as a new scientific doctrine which applies to systems behaviour, cybernetics is derived from the Greek word kybernetes, which means the art of steermanship, but has also been applied to the term 'governor', in both its technical and political forms (Jackson, 2000, p. 67). Made famous by Norbert Wiener in 1948, where he stated that Cybernetics was a true interdisciplinary science, it was based on the general laws on control and communication. It is similar to General System Theory as both are considered a general science of 'wholeness', for they enabled scientists in different and specialised disciplines to communicate with each other, as well as providing models capable of being utilised across a variety of academic research areas (von Bertalanffy, 1968, p. 37). These two disciplines, while only representing a small portion of the overall growth of systems thinking in the 1940s and 1950s, did however significantly enhance this methodology to become a true trans-discipline, one that combines a variety of research backgrounds including philosophy, biology, sociology, management and organisation theory, control engineering and the physical sciences (Jackson, 2000, p. 43). So while there are many influences for the development of systems thinking during this time period, in general it can be said that much of the emphasis by the academics associated with the rise of systems thinking, was focussed on the process of finding methods and processes that they could model and provide solutions for 'complex problems' from a holistic viewpoint.

From these different historical influences, four general types of approaches have evolved within the greater tradition of system research. These include the Functionalist, Interpretative, Emancipatory and Post-Modern methods, all of which share the overall systemic background, but differ significantly in their specific methodology. However the Functionalist School was, especially at the beginning of this period, still dominated by positivism, as would be expected from a process derived initially from the scientific method. Originally composed mainly of hard systems approaches, over time, a number of academics including Ackoff, Checkland, Churchman, Hoos, Lilienfeld and Rosenhead compiled a catalogue of criticisms that demonstrated the limited domain of applicability (Jackson, 2000, p. 136). The biggest limitation is that hard approaches must have their objectives clearly defined at the beginning of the

methodological process. This is very difficult to do in a complex issue area and the limitations of hard approaches are realised where multiple weltanschauung exist (Ibid, p. 137). In addition, since hard systems models are normally constructed according to the positivist method, their inability to be more flexible, in order to tackle problems of greater complexity, often render them incapable of capturing the subjective intentions of human beings (Ibid, p. 154). This is shown in the inability of hard systems models to change or modify their worldviews, which limit their objectivity. The fact that traditional hard systems thinking is unable to deal with ill-structured or strategic issues, slowed the development of the Functionalist school in the 1970s and 1980s, which eventually led to the rise of other methodologies within the system tradition as mentioned above.

The functionalist tradition was, for a long time, the only approach to systems thinking and it is only recently that other approaches have evolved. Of course, the problem with the functionalist system approaches, from the interpretative and emancipatory perspectives, is that they do not restrict their advocacy of instrumental reason to where it might be more appropriate, that is, to deal only with 'technical issues' (Jackson, 2000, p. 209). Thus it is not surprising that there would be a rise in a number of other approaches, included the interpretative school, which can be considered the 'softer' side of the system methodologies. The interpretative systems approach is frequently referred to as 'soft systems thinking,' because it places emphasis on people rather than technology, structure or organizations. Key areas of concern include perceptions, values, beliefs and interests, accepting multiple perceptions of reality (Jackson, 2000, p. 211). Likewise "soft" is also another word for ill-defined, that is, a system that is not hard or rigidly defined (Wilson, 2001, p. xiv). Examples of these types of interpretative approaches include Ackoff's Social System Sciences, Checkland's Soft Systems Methodology, and Senge's Soft Systems Thinking (Senge, 1990). By using different definitions for 'systems', academics such as Checkland, Flood, Senge and others, matured the overall tradition of system research and grew it in different areas by resting it upon alternative philosophical and sociological assumptions. Checkland for example noticed himself in 1981, the similarities between his research and social theory, and in doing so, believed that the interpretative tradition to be more relevant than the functionalist model in solving the difficult problems (Jackson, 2000, p. 59). This shift in thinking would ultimately result in the development by Checkland of Soft Systems Methodology, where systems are seen as the mental constructs of observers rather than

entities. In this manner, an objective existence in the world and systems is transferred 'from the world to the process of inquiry into the world' resting on the interpretative 'sociological paradigm' (Checkland, 1983, p. 34; Jackson, 2000, p. 101). What this means is that the actual methodology of 'thinking' about the process is the most important component, vice the problem itself. The key point as noted by Jackson (2000) in his book on system approaches, are that the interpretative paradigm provides the theoretical home for soft systems thinking (Ibid, p. 41). Checkland also found similar affinities between Soft System Methodology and social theory, with the interpretative tradition more relevant than functionalism (Checkland, 1981; Weber, 1964, p. 88).

Interpretative sociology provided significant theoretical assistance to Soft System Methodology, while Marxist sociology as a representative approach likewise played a similar role for emancipatory and critical systems thinking (Johnson, 2000, p. 61). Brocklesby and Cummings noted as much, when they suggested that two competing philosophical backgrounds support emancipatory systems thinking (Brocklesby and Cummings, 1996). The first begins with Kant and then stretches through Hegel, Marx and Habermas and as mentioned previously, primarily concerns human beings. The second is more concerned with self-emancipation and derives from Kant, Nietzche, Heidigger and Foucault (Ibid, p. 741). Overall, this tradition of systems thinking focuses on the fact that the current social order is seen as suspicious and reform is desired. Similar in some aspects to the advocacy or participatory methodologies as discussed in Chapter Three, emancipatory systems can be divided into two types, namely 'modern' and 'post-modern'. Good examples of the former include Habermas, Capra and Ulrich, all of which were reviewed for applicability to this research (Habermas, 1974; Capra, 1996; Ulrich, 1983). From these approaches, a set of generic rules for an emancipatory systems methodology could consist of the following statements:

- A structured way of thinking, that is focused on improving real-world problem situations
- Uses systems ideas as the basis for its intervention strategy
- Understanding that the real-world can be systemic in alienating individuals or groups
- The use of models to enlighten the alienated and oppressed about their situation
- The process of intervention is systemic and aimed at improving the problem situation
- Exhibit conscious thought on how to adapt to particular circumstances

(Jackson, 2000, p. 329)

Thus stated, functional and interpretative system approaches rest on a belief in social order and consensus that aim to promote integration so as to improve existing social systems – that is, they help to buttress the status quo. These approaches specialise in identifying contradictions in social systems, the existence of conflict and the domination of some groups over others (Ibid, p. 330). In general, the emancipatory tradition is not one that could support this research. There are however, some ideas that could have applicability, namely the three central and interdependent concepts that are central to Capra's theory, which consist of 'patterns of organisation, structure of the system and process.' These discrete concepts align quite nicely with the approach of this research, namely on the personnel, policy and organizational focus of IO within the United States government (Capra, 1996, p. 153).

The final category is the Post-Modern Systems approach which is a method unto itself. In fact it cannot fit into Burrell and Morgan's (1979) four paradigms, which is shown in Figure 3.2, because the post-modernism stance is very much in opposition to all of these ideals. This method seeks through "deconstruction and critical thinking, to reclaim conflict and ensure that marginalised voices are recognized and heard. It adopts an ironic and playful disposition in order to ensure diversity and encourage creativity..." (Jackson, 2000, p. 333). For if positivism is more behavioralist, sharing much of common beliefs of international relations theories, than post-modernism on the other hand, accepts the centrality of relativism and ideation (Terriff at al, 1999, p. 111). Shown below are generic rules of this type of approach:

- The focus is on disrupting real-world problem situations by critically questioning all opinions and accepted methods
- Using systemic and anti-systemic ideas as the basis for its intervention strategy
- Exhibit conscious thought and emotional response for each particular circumstance
- Findings may change the real-world problem situation, including the underlying theoretical rationale

(Jackson, 2000, p. 348)

A relatively new approach to theoretical constructs in both the international relations and systems thinking traditions, post-positivism or post-modernism has evoked controversy from the more traditional academics. Much of this debate stems from the 'supposed' lack of empirical content, where "participants dispute each other's terminology and methodology without addressing common issues" (Mearsheimer, 1995, p.92). It is these later points, where nothing is 'real' in the post-modernism approach, that probably more than any factor, rules out this tradition of systems thinking as a method for this research (Wallace, 1996, p. 311). For in the end, the

problems with the evolution and development of IO within the United States government are in fact real and cannot go away with discussions of abstract concepts or theory.

4.5 The Choice of a Methodology

The selection of a method for this research was thus as noted, a continuing series of efforts to find the best process. Methodology looks at the principles behind the use of models, methods, tools and techniques that can help to provide understanding and usually in the case of systems thinking, to bring about change (Jackson, 2000, p. 91). As stated previously, the purpose of the original background research, was to help focus and mould a concept for the enhanced utilisation or the 'to be state' of IO by the United States government in this new era. Based on these observations and the comments and critiques of a 100 interviews conducted over a five year period, it became apparent as shown in Chapter Three, that a qualitative approach was the best methodology to utilise in an analytical fashion to the problems associated with IO. As a methodology, a qualitative approach as mentioned in Chapter Two, also allows the use of the interviewees or subject principals who are embedded into the system being researched to help derive the hypothesis from the data. This is similar in effect to the use of 'grounded theory', in which models are typically derived or systematically generated from data and analysed through the research process (Strauss and Corbin, 1998, p. 12). "One of the most developed inductive research methods is that of grounded theory ... where the researcher starts with minimalist a priori constructs, inquires deeply into organisational behaviour and events while gradually testing and forming theoretical constructs" (Leonard and McAdam, 2001, p. 180). As stated, grounded theory allows a researcher to begin a project without a preconceived theory in mind, and instead theory is allowed to emerge from the data itself, as it does in soft system methodology. Both Strauss and Corbin agree that theory derived from data is more likely to resemble 'reality', which is similar to the verification and validation steps devised by Peter Checkland when he developed Soft System Methodology (SSM). Patton had similar comments when he stated, "Qualitative evaluation inquiry draws on both critical and creative thinking..." (Patton, 1990, p. 434).

As mentioned at the beginning of this chapter, the origin, foci, philosophical and theoretical frameworks, as well as the data itself of a particular research area, all play an important role in the determination of the methodological approach. In this particular case, the

origin of the change in the power of information and IO in the United States government is an analysis of a social change. Combined with ingredients of the humanities, social sciences and sociology all mixed together, this research tends to point to the use of a biography, ethnography or grounded study. In addition, the foci of the research was also to understand the development of IO in the United States government, which many interviewees expressed as a concept more than a single phenomenon, one that affects a group, which can be modelled toward a theory of change. Therefore, the qualitative approaches of grounded theory, ethnography and phenomenology were considered the most important factors in this particular analysis. Likewise from a philosophical perspective, the process in this project was one of active research, which utilised multiple interviews, to constantly bring in new and unique perspectives which is more an ontological or methodological approach. Also in reviewing the research methodology from a social science theoretical perspective, the thesis problem and area of interest, tended to lend itself more to a collection of data and analysis first, which reflects a biography, case study and grounded theory approach. Finally, the data collection method lent themselves more toward a grounded theory approach because the interviewees were individuals who had taken an action or participated in a process that was central to the development of IO in the United States government.

Taken all together, it becomes apparent, that a grounded theory or modified version appeared to be the best type of qualitative approach in which to conduct the actual research. In addition, after numerous interview sessions, it also became apparent that open-ended questions, when used properly, best allowed the collection of participant meanings and nuances, as well as personal values which were extremely valuable in this effort (Babbie, 2001, p. 240). So in general, the basic characteristics in his research method followed were similar to those advocated by the noted grounded theorists (Strauss and Corbin, 1998, p. 7):

- The ability to step back and critically analyse situations
- The ability to recognize the tendency toward bias
- The ability to think abstractly
- The ability to be flexible and open to helpful criticism
- Sensitivity to the words and actions of respondents
- A sense of absorption and devotion to the work process

The use of the initial exploratory interviews and questions, not only helped to conceptualise the meaning of variables to be studied, but also allowed the interviewer and participants to be open

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to further interpretation and change. This open dialogue also allowed the path of the interview to be continually open to change. It was also useful for drawing out multiple meanings and varied viewpoints with regard to IO, and this approach also drove this research to ultimately follow a qualitative approach to include attributes such as appropriateness, authenticity, credibility, intuitiveness, receptivity, reciprocity and sensitivity (Rew, Bechtel and Sapp, 1993). Based on these attributes, the traditional international relations or decision making theory were as noted previously deemed inappropriate for use as a theoretical construct for this research. In examining the alternative approaches available, if appears from the systems framework that problems viewed from within the interpretative paradigm (subjective, sociological or regulatory); seem to be much 'softer' than the more traditional functionalistic or hard systems approach, and therefore more useful in this case. In essence, this interpretative paradigm is thus in many senses, the theoretical 'home' for much of soft systems thinking, which was deemed most useful in researching IO (Ibid, p. 24, 41). In addition, systems thinking are also considered a transdiscipline, because its theories, models and methods add value to a variety of fields. Likewise, there is also a resonance between systems thinking and real-world practice, so there was a sense that these methodologies could be of use in this research (Jackson, 2000, p. 100).

From these knowledge claims, a philosophical approach to research began to develop in the form of a qualitative methodology as a version of modified grounded theory to be implemented through specific procedures of SSM (Crewell, 2003, p. 4). For a methodology, or in this case a theoretical construct, often provides a sense of vision of where the analyst wants to go with their research, Likewise, because of the amount of background research previously conducted, this project could be started with a constructivist view of the knowledge claim positions, as opposed to a more post-positivist, advocacy or pragmatic approach. By doing this, the research was open to analysing multiple methods, with different weltanschauung and assumptions through this interpretivist stance (Ibid, p. 12). As developed by Peter Checkland at the University of Lancaster in the 1970s, SSM is particularly effective in analysing 'vague' or 'unstructured' problem situations at the strategic level (Jackson, 2000). It does so by defining not a problem but instead a situation that is problematic (Wilson, 2001, p. 7). In addition, this theoretical construct of SSM also questions the privileged role of experts, and instead explores different values to ensure that they are included in this theory, with the overall aim to encourage learning by examining a number of viewpoints.

There is an incredible amount of flexibility inherent in SSM, and this process has been recognised as a 'practitioner's' methodology, namely one that provides the professional with 'relatively' solid reference points (Checkland, 2000, p. 800). These anchors allow the SSM practitioners the ability to 'allow' their theories and frames to come apart, so that they can recognise and engage that which is shifting and turbulent in their practice (Schon, 1983, p. 270). This 'coming apart' is expected and it is a rich source of learning, because SSM is both flexible and dependent on the user for input (Checkland, 2000, p. 801). Of course this flexibility and useability of SSM is also what makes it difficult to generalise about, however, proper use will allow the practitioners to internalise the principles to a high-degree of capability. Soft System Methodology is also a methodology for action learning and each facet is interconnected and important on its own right (Ibid, p. 802). These 'cycles of learning' promote ideas about what could or should be used to attack those messy or unstructured problem situations. Because SSM practitioners think in layers or on multiple levels simultaneously, they have the ability to bring clarity to confusing situations. So in essence, what makes SSM different and unique from other variants of system thinking is that it provides a framework, or a 'hearing methodology' in the form of weltanschauung (Ibid, p. 807). This ability to define what is important in the problem, and addresses it from different viewpoints through weltsanschauung so that alternative perspectives can be compared and contrasted is crucial to the success of SSM in these complex or 'messy problems (Jackson, 2000, p. 98).

Based on these multiple data points and in depth analysis of the different theoretical constructs, SSM was selected as the method for this research because it allows for the use of political, issue-oriented, collaborative and a change oriented research questions, to collect open-ended emerging data from the participants, with a primary intent of developing themes within the methodology construct (Creswell, 2003, p. 18). In addition, SSM rests upon the interpretative sociological (constructive) paradigm, which was also deemed best suited for this research study, because by its very nature, IO can be characterised as an 'immature' concept due to lack of or inaccurate theory and research, which closely resembles the current state of this new idea within the United States government (Jackson, 2000, p. 99).

4.6   Summary

After careful review and analysis, a decision was made to use an alternative process that was based in the interpretative (constructive) school, related to grounded theory, and housed within the greater systemic tradition. From the factors mentioned above, SSM was selected as a method for this research with active research as a qualitative methodology that incorporated portions of grounded theory. This process was chosen after analysing the alternatives and understanding that the 'open-ended or messy' nature of the problem ultimately drove the research in this particular direction as shown in Chapter Three. This is because the primary goal of this research was to conceptualise the current state of IO within the United States government and, if possible, formulate a reason for the delta or gap in strategic policy and tactical day-to-day operations. In addition, a subset of that objective was to specifically address these emerging issues from a policy, personnel and organisational perspective. From these many factors, SSM appeared to be the 'best' theoretical construct to utilise in this thesis, namely because as a methodology, it best matched the decision matrix criteria from Chapter Three. In addition, SSM was also selected due to its inherent ability to problem solve 'messy' issues, its use of multiple viewpoints, its cyclical nature, and finally, the fact that SSM generated root definition and conceptual models that could show the status of IO within the United States government.

As many analysts recognise, information is changing the way in which the United States conducts business around the world, which includes military deterrence and peace-keeping operations, foreign policy and as well as world-wide economic development. The interviews conducted for this research tended to confirm this perception, namely that the power of information is being recognised for what it really is and that governments as well as other non-governmental organizations around the world are beginning to address the issues involved with using information. However, the data that were developed from the interviews also recognised that the full power of information is not yet a full-blown reality, but instead the capabilities of this nascent element of power is being implemented in different manners within the power structure of the United States. Ultimately, the theoretical construct of SSM was utilised because in conjunction with the viewpoints of the participants, a consensus arose between the interviewees that a large amount of input was needed from a diverse group to help in ensuring that in this process the key aspects and importance of IO was emphasised in a very systemic manner. In conclusion, there were many different research methodologies that could have been used. Early proposals that centred around international relations theories such as Complex

Interdependence and Noopolitik were eventually discarded as not being rigorous enough to meet the demands of this concept, as well as in some cases these theories are not processes but instead mere viewpoints of the affected academics. Likewise the inability of decision-making or organisational theories to meet the needs of this research, also led to their non-adoption.

Chapter 5 – Research Method

In this research, SSM was used by IO practitioners in real situations using a series of collaborative approaches. As the basis for the series of research questions developed for this thesis project, the use of SSM is thus considered a part of the interpretative or constructive school of research. Normally regarded as a tradition within systems thinking, SSM was developed in the 1970s from the failure of the established methods of systems engineering to solve difficult or messy complex problem situations (Checkland and Sholes, 1989, p. xiii). As a methodology, SSM is derived from the research by Peter Checkland, as well as other academics including Davies, Howell, Sholes and Ulrich (Checkland, 1981; Checkland and Davies, 1985; Checkland and Howell, 1993; Checkland and Sholes, 1989/1990; Flood and Jackson, 1991; and Ulrich, 1994). This intepretivist process assumes that everyone's opinion or weltanschauung is valid and each should be incorporated into the overall problem solution. In addition, this tradition also assumes that researchers are producing their own mental constructs of the system. "In essence, SSM supports the derivation of a roadmap from the 'what is' to the 'what might be' by engaging the organisation in a structured and logical debate about itself and what it should be doing" (Wilson, 2001, p. x). It is different, because it is not objective, nor democratic, but instead SSM attempts to take into account each and everyone's opinion, so that these individual or different viewpoints are not left out from the majority opinion. This is shown in "the fact that the research which produced SSM started out from a base in systems engineering indicates that it was part of the strand of research which concentrates on situations in which people are trying to take action" (Checkland and Sholes, 1989, p. A39). In other words, it is an organised method of tackling 'messy' situations in the real world, because it is based on systems thinking, which enables SSM to be highly defined but still very flexible in its use as well as broad in scope (Ibid, 1999, p. 1). "SSM certainly brings clarity to confused situations, because it encourages thinking in layers" (Jackson, 2000, p. 807).

5.1 The SSM Approach

As outlined in Chapter Three and Four, the SSM process is an appropriate methodology to use on this issue area, because it allows the use of political, issue-oriented, collaborative and a change oriented research questions, to collect open-ended emerging data from the participants,

with a primary intent of developing themes within the methodology construct (Wilson, 2001, p 18). In addition, because a qualitative approach was deemed best suited for this research study, (see Chapter Three), the use of SSM was also considered appropriate because by its very nature, IO can be characterised as an 'immature' concept due to lack of or inaccurate theory and research, which, in some instances, resembles the current state of this issue within the United States government. Thus, the problem situation tracks well to the steps of SSM, as shown later, which attempts to explain how IO is actually conducted by the United States government today ('as is state') and how in theory it could accomplished in the future ('what might be'). The actual goal or aim of SSM is shown below in this quote, which lays out in a broad context, the concept behind SSM.

> SSM is a methodology that aims to bring about improvement in areas of social concern by activating in the people involved in the situation a learning cycle which is ideally never ending. The learning takes place through the iterative process of using system concepts to reflect upon and debate perceptions of the real world, taking action in the real world, and again reflecting on the happenings using system concepts. The reflection and debate is structured by a number of systemic models. These are conceived as holistic ideal types of certain aspects of a problem situation rather than an account of it. It is taken as given that no objective and complete account of a problem situation can be provided (von Bulow, 1989, 16, p. 38).

Soft System Methodology is a not positivist or materialistic approach, which would not suit this problem because the particular emphasis of this research deals with influence aspects of IO. "…SSM as a methodology, starts by defining not a problem, but instead as in this case, a situation that is problematic" (Wilson, 2001, p. 7). Soft System Methodology is well suited to situations where organisational stakeholders can have input into the management output, which was the case in this research effort. There can also be a quandary in the fact that SSM is normally considered a methodology rather than a series of techniques. However, SSM can be used as a method but it will never be independent of the user (Checkland and Sholes, 1999, p. 285). In addition, as an analytical technique, SSM possess a number of key features which are quite useful in the study of IO to include:

- Strategic approach that is forward looking
- Rule-based and intellectually rigorous, yet although flexible enough to apply to all types and sizes of organizations
- Defensible so that conclusions could be confidently justified to in a way that anyone can understand

- Consensus building so as to achieve the essential ingredient aka 'buy in' (Wilson, 2001, p. ix).

The basic design of SSM was first developed by Peter Checkland in 1981, which in its first iteration was developed as a seven-stage process of enquiry, entitled Model 1, as illustrated in Figure 5.1. While this approach was later updated and is often called Model 2, it was decided that the original version (Model 1) as shown below was the best methodology for this research project, because of its simplicity and transparency to the stakeholders (Checkland and Sholes, 1999, p. A13). Although Figure 5.1 shows a circular or serial approach, SSM can also be accomplished in a less lineal progression, which was the case in this research.

5.1.1　　SSM – Steps and Procedures

It is from this standard methodology and the steps as described above, which make up the most common process actions that were used throughout the timeline of this project. The stages, which are recursive, produce the following four outcomes, as will be described later in this chapter.

Rich Picture: The research began with a series of interviews that produced data about the problem situation. This data is the core of this process, because it allows the researcher to find out about a problem situation, including its cultural and political aspects. This is the phase, in which the Clients, Actors, Transformation, Worldview, Owners and Environment (CATWOE) elements are all defined by the interviewees. Separated into sections based on the CATWOE areas, this data is then aggregated and collated into categories that could be compared and contrasted throughout the project. From these categories, a series of figures or Rich Pictures were developed, that described an overall view of what the problem is, and in the case of this research, what is acquired from the information received during the interview process.

Root Definition(s): From the data correlated in the CATWOE categories, and described in the Rich Pictures, a series of Root Definitions are extracted from these collated answers. Formulated as the relevant purposeful activity models, the Root Definitions also serve as a characterisation of the 'ideal' solution formed during the interview process. If there are differences of philosophy or incompatibilities, this is not a problem because more than one Root Definition can be utilised. In addition, just because the Root Definition may be incompatible, that does not mean that they are mutually exclusive. Ultimately, the Root Definitions serve as a basis for the further development of the research in the form of Conceptual Models, with the data directly linked to CATWOE and the interviewees.

Conceptual Models: In this phase, the participants in the study debate the situation, using models, to seek changes which would improve the situation and are regarded as both desirable and culturally feasible, as well as the accommodations between conflicting interests which will

enable improvement actions to be taken. These are defined as high-level task models and are derived solely from the ideal Root Definitions. Normally developed from the interview process, these Conceptual Models represent processes or methods of achieving a goal, which may not be the typical method of doing business in reality.

Verification and Validation Phase: It is in this stage, where the models are challenged to see if they are both 'Feasible' and 'Desirable', in a validation stage. In essence, it is this portion of SSM, where the research is examining the Root Definitions and Conceptual Models to determine the correct action in the problem situation that could possibly bring about improvement. Finally the models are also verified by the interviewees, to ensure that they include the opinions and weltanschauung of all of the interviewees (Checkland and Sholes, 1999, p. A15).

In addition, because SSM uses an inductive research method in which the researcher starts with minimalist a priori constructs, and then begins to inquire deeply into organisational behaviour and events, it is only natural that as the research is conducted, 'theoretical constructs' are gradually tested and formed (Leonard and McAdam, 2001, 78, 2, p. 181).
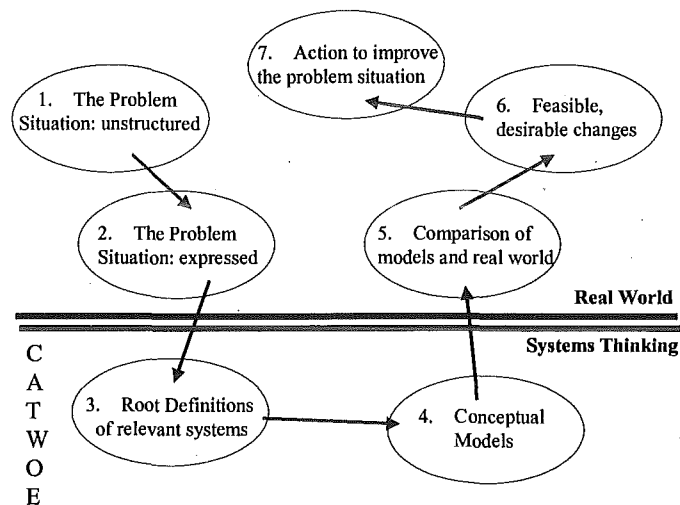
Figure 5.1 - Soft Systems Methodology: Source: Checkland Scholes (1999)

5.1.2   Soft System Methodology - Its Limitations, and its Benefits

While SSM is the methodology of choice for this particular research that does not mean that it is without its own limitations. However, based on the comments of the interviewees, as well as the criteria that was reviewed for narrowing down of the possible alternatives for a research methodology in the selection process as shown in Chapter Three and Chapter Four, the benefits of this approach appear to outweigh the limitations. This is the case even with the modifications made to this methodology, particular the lack of group setting of all interviewees.

For within the United States government, it is hard to have a very large group of important stakeholders to meet together or gather in such a consensual manner for an academic experiment. In addition, the physical and chronological separation between these important government officials often makes it impractical to have them all together to conduct research by the normal SSM methods proposed (Checkland and Sholes, 1999, p. 280). Likewise, the participants are often involved in real-world operations and so a 'virtual' method of bringing the participants together was the primary method utilised in this research by having each participant interviewed in the same way using the same methodology (Babbie, 2001, p. 268). In addition, since the interviewees were spread all over the world, an attempt to build a 'Rich Picture' of the problem situation was utilised by conducting 100 interviews independently and using a standard set of survey questions, to collate the data.

However, there are drawbacks to this approach. Because of the lack of interaction between participants, there is not the normal give-and-take between the thesis interviewees that would occur in a group setting. Of course there can be downfalls with any approach, and this one like others has its own unique flaws. "In action research, the researcher wants to try out theory with practitioners in real situations, gain feedback from this experience, modify the theory as a result of this feedback, and try again, with each iterative session of the action research process adding to the theory" (Ibid, p. 95). So for this project, theory was instead developed through a comparative methodology looking at the same problem situation in different settings (Easterby-Smith et al, 1993, p. 35). Studies have shown that group dynamics for academic research have their own drawbacks as well. This is important because there are many factors that would inhibit a government official from being totally frank and honest in a larger group-type environment. Thus the use of one-on-one questioning also allows those people that tend to defer to more 'dominant' personalities to actually speak their mind and have their opinions heard. For it would be enormously difficult to have all of these people in the same room and all be contributing 'equally' to a discussion. This is why the formal interview process is actually considered better in some aspects, because it allows the author to 'draw' out valuable information from the participants in a more comfortable setting. This was done not only for the comfort of the government official that was participating, but also develop a level of detail and trust that may not have occurred in a less familiar environment (Babbie, 2001, p. 181). In addition, using the interviews as working guidelines, rather than as settings for so-called 'truths'

to be proven, allowed instead for a dialogue that utilised words such as 'what' or 'how' to suggest an open or more emerging design as opposed to closed words like 'why' which are more consistent with a quantitative approach (Creswell, p. 106). Thus it was from these decisions and analysis, it was the use of open-ended type questions as part of the field research, with the participants in their natural settings that was considered crucial to the overall success of the effort (Babbie, 2001, p. 240).

So in essence, the benefits of SSM far outweigh any limitations imposed by the interview process, because it is a qualitative approach, using open ended questions to understand the conduct of IO in the United States government (Creswell, 2003, p. 182). The selection of SSM as a methodology was not a fast or straight-forward process, as alluded to in Chapter Four, and there was initial difficulty in developing a framework for IO in the United States government. Overall, it took about three years of background interviews to truly understand the magnitude of the problem and it was only during the third set of formal interviews, that an adequate process was developed by the participants themselves. It was at that point, where it finally became clear that an interpretative approach was needed and once SSM was selected, that the Rich Pictures, Root Definitions and Conceptual Models were all developed from the formal interview data to better understand the issue area.

Figure 5.2 – Initial Interviewee Weltanschauung

5.2   The Interview Process: Use of Selected People to build up a Rich Picture

As part of the research methodology, active interviews with key personnel were used as an attempt to build up a series of Rich Picture and ultimately Root Definitions as well as Conceptual Models. A number of primary interviews were conducted with key personnel since 1999, and a variety of government officials were repeatedly met to discuss the role and evolution of IO within the USG. Of these key participants, 40 were selected for this study due to their positional and institutional knowledge, breadth of information and willingness to undergo repeated interviews.

These interviewees are part of the overall global IO community and were either involved with computer network operations, strategic communications, perception management, cyber security, critical infrastructure protection or homeland security efforts of the United States government at the present time, or were recently employed in that capacity in the past. These people ranged from academics and Department of Defence officers, to State Department and National Security Council directors, legislative assistants, congressionally appointed staffers and bureaucratic officials (see Figure 5.2). In addition, these participants worked at all different levels of the government, and some of them are very high-level government personnel, that are not always very easily accessible. However the overall consensus was that all of the personnel interviewed had valuable insight on the conduct of IO in some aspects within the federal bureaucracy. The nationalities and professions of the interviewees included Americans and citizens of other nations, inside the government, military and academics. Each participant had a different worldview, and each in their own way was able to give critical information for use in this thesis. This is important, because the interviewer was the only constant in the interview process, there is a possibility that some bias could be introduced in this grouping from the interviewee's responses. It was felt that some of that bias was overcome by the fact that all interviews were conducted by the same person, in the same manner, with the same questions (Babbie, 2001, p. 280). This reasoning (discussed in Chapter 4) was that an advocacy/participatory stance, using with an SSM methodology, would hopefully eliminate extreme bias. It is generally observed that when conducting interviews, especially when using an advocacy or participatory framework that the analyst always views the data through a filter or lens based on their education, social and historical context. This is unavoidable, but can be

minimised if the researcher takes care to understand that this phenomena is occurring. Termed the Hawthorne Effect, this problem can be alleviated if there is sensitivity to the issue, so that a researcher can avoid most of the major issues (Babbie, 2001, p. 278).

5.2.1 Why Was This Group Chosen?

The final 40 interviewees were chosen using a number of various factors. Many were considered as experts in the various fields field of IO such as influence campaigns, strategic communications, perception management, psychological operations, computer network operations and information assurance that were also familiar with the operations of the United States government. Many of the government officials, who held key positions in IO staffs or commands, were names that were added to this list. In addition, other IO personnel who were supporting organisations in the United States government were also used to add more participants to the initial interview matrix. An additional strategy that was enlisted to flesh out the participant pool was to use references from other interviewees and try to 'spiral' closer to the more prominent officials. For example, the first person to be interviewed promised to get time with a prominent futurist. Likewise, a mid-grade Department of Defense civil servant helped to coordinate an appointment with a member of the Joint Staff. Also included on the list, were a number of academics who have studied this issue and while their background is varied, they all have one thing in common, namely that they have either worked with some part of the broad continuum of information operations in the government or business world or have studied it as an academic.

5.2.2 The Range of Weltanschauung Expressed - Why this is Relevant to the Research Questions

The demographics of the formal interviews as shown in Figure 5.2 and Table 5.1 denote a significant number of federal officials, military personnel and academics that met the criteria. The federal bureaucracy is a very complicated set of organisations and while an incredibly eclectic group of people could have been interviewed about the IO capabilities in order to obtain diversity, the goal of this research to develop a series of models to answer the study question. So if a prospective participant has no understanding of IO policy, training or agencies, if they do not know the doctrine, procedures, operations, or any of these other detailed facets of this thesis,

then they probably cannot give an educated and useful series of answers that will further contribute to the body of knowledge, and thus were not ultimately chosen to participate in this project. All together, after a number of background sessions that were conducted as early as May 1999, the final round of formal interviews began on 13 February 2003 and ran for 14 months to finish on 1 April 2004, with 40 participants over multiple meetings as shown below.

#	First Interview	Second Interview	Third Interview	Affiliation
1	19-Feb-03			NPGS
2	19-Feb-03			NPGS
3	14-Apr-03	26-Apr-04		Aerobureau Corp
4	15-Apr-03			DoD
5	16-Apr-03			CFR
6	16-Apr-03			Highlands Forum
7	16-Apr-03	24-Nov-03	26-Mar-04	State Department
8	17-Apr-03	25-Mar-04		Consultant
9	17-Apr-03	25-Mar-04		Consultant
10	18-Apr-03	1-Apr-04		The Rendon Group
11	21-Apr-03			RAND Institute
12	21-Apr-03			Ctr Naval Analysis
13	21-Apr-03			Consultant
14	22-Apr-03			NDU
15	22-Apr-03			RAND Institute
16	22-Apr-03	31-Mar-04		State Department
17	23-Apr-03	1-Apr-04		DoD
18	23-Apr-03			GWU
19	24-Apr-03			OGC
20	25-Apr-03			RAND Institute
21	13-May-03			RAND Institute
22	10-Jun-03			DoD
23	10-Jun-03	1-Apr-04		State Department
24	10-Jun-03			DoD
25	10-Jun-03			DoD
26	10-Jun-03			GWU
27	2-Jul-03			TRC
28	2-Jul-03			FCO
29	3-Jul-03			University of Leeds
30	3-Jul-03			Consultant
31	3-Jul-03			SNDC
32	4-Jul-03			ADF
33	4-Jul-03			Deacon University
34	4-Jul-03			Kings College
35	4-Jul-03	1-Apr-04		NDU
36	6-Aug-03			Monash University
37	7-Aug-03			JFSC
38	12-Aug-03	19-Nov-03	23-Apr-04	C4ISR
39	13-Aug-03	1-Apr-04		NSC
40	13-Aug-03	24-Mar-04		State Department

Table 5.1– Formal Interviewee Schedule

Continuing the discussion on why particular people were chosen, knowledge of IO was a higher criterion, and was more often chosen for potential interviewees rather than their divergent background. For example, to determine the weltanschauung of each participant, the following two questions were asked first as part of the standard interview process: What is your background? What are your beliefs with respect to information and power? From this background data, the graphs and tables shown in Figure 5.2 were created to show the overall demographic representation of the interviewees as a group. As you can also see in Table 5.1, the interviewees consisted not only of personnel holding key IO related positions in the United States government, but also those academics from around the world who have written and studied the topic for a significant period. The ultimate goal was to always get knowledgeable input from the participants who were closest to the subject as part of this process to ensure the best data possible. Major efforts were made to widen the interviewee pool, and as will be noted, a diversity of opinion was indeed gained, as shown in the dichotomy in the two Root Definitions and 14 Conceptual Models. In effect, these results were total opposite of each other with one group of interviewees proposing a top-down solution, while the other favoured a more bottom-up approach. So to conclude and summarise the questions about the interviewee pool for this research - all of the participants of this study were involved in the IO community from some aspect or the other, and yet they encompass very divergent and radically different views on the subject.

5.3   Formal Research Phase: The SSM Process in Use

From the formal interview process, very basic ideas began to emerge in the form of Rich Pictures. A number of diagrams were developed that helped to categorise the 63 different CATWOE elements, all of which were aligned with the answers provided by the thesis participants, and from these six CATWOE categories, the interviewee data plus the Rich Pictures - two separate and distinct Root Definitions emerged. From this step, two primary and 12 secondary Conceptual Models were formed to expand on the themes delineated by the interviewees. All of these SSM steps were then verified by 16 of the original 40 participants in the spring of 2005, when another set of interviews conducted. Also during this validation process, data was cross checked with the interviewees to make sure that what they said was

indeed correct and that the nuances imparted during their individual sessions was updated, with any changes noted in updated CATWOE and Root Definitions. Gaining feedback from this experience, the original theories encapsulated in the SSM devices as shown above, were then modified as part of the process therefore adding value to the theory (Avison et al, 1999, p. 95). The final step was the use of an independent third party set of IO professionals to validate the whole process. Conducted as part of the 4th Annual European Conference on Information Warfare (July 2005) at the University of Glamorgan, in Pontyphidd, Wales, this last group was very useful in their ability to discern that this entire process and methodology had been rigorous and academic in nature.

5.3.1 Finding out about a Problem Situation: The Gathering of the Interviewee Data

From the very beginning of this research project, there was a sense of unease among the participants caused by an overriding concern that a problem existed in the IO community. Problem situations were considered vague and unstructured, and without precise terms. Thus, any analysis of this issue area had to consist of building a series of diagrams with the richest possible data in the picture of the problem situation (Jackson, 2000, p. 247). For example, the IO policy and doctrine that has been evolving since the 1990s in the United States, shows clearly the dichotomy between what the theorists thought or wanted with respect to the American military forces. In addition, the organisation of the national security apparatus to accomplish the missions and tasking associated with IO are also drastically different than the perceived and actual capabilities of the overall organisation or system. The system in this case, is an entity such as a federal agency, which receives inputs and produces some outputs, that is, the system itself transforms the inputs into the outputs (Checkland, 1981, p. 9). In the United States government, because the actors are from disparate organizations, services, commands and even cabinet agencies, the interview data was thus used to bring the disparate thoughts together, to conceptualise the feeling that there was indeed a 'problem', in the conduct of IO in the United States government.

5.3.2 Developing Rich Pictures from the Interviewee Data

A useful way of starting this process is though what is known as a 'Rich Picture'. This is literally a picture of what the situation is taken to be (Wilson, 2001, p. 35). Humans are always making use of models whenever we reach value judgements about a particular situation though frequently they are implicit and unquestioned. This is because, models of any kind are not descriptions of the real world, but instead they are descriptions of ways of thinking about the real world (Ibid, p. 1, 4).

> Making drawings to indicate the many elements in any human situation is something which has characterised SSM from the start. Its rationale lie in the fact that the complexity of human affairs is always a complexity of multiple interacting relationships, and pictures are a better medium than linear prose for expressing relationships. Pictures can be taken in as a whole and help to encourage holistic rather than reductionist thinking about a situation" (Checkland and Sholes, 1999, p. A16).

The following three 'pictures' shows how some of these ideas coalesced as the interviews were conducted and are the first attempts as part of the SSM process, to collect the thoughts of the interviewees. The "W" stands for 'world view' or 'weltanschauung' and as seen in the figure 5.3, the initial thought was a division centred on three primary groups. All of the data from this research is also available in the Appendices.

What must the United States federal bureaucracy accomplish from a policy, personnel and organizational effort, to better utilize information as an element of power to meet the threats of the future?

W1 - Government

W2 - Academic

W3 - Public
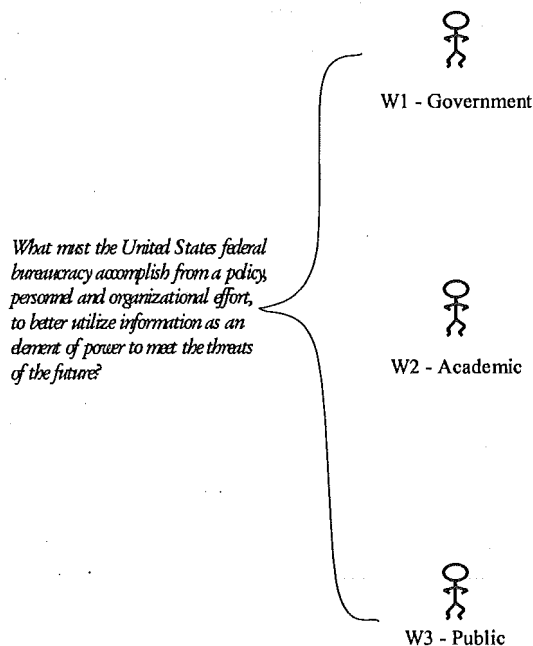
Figure 5.3 - Rich Picture #1

In the first Rich Picture, it was generally recognised by most participants that there were a number of different views that could affect the power of information within the United States government. It was also felt that that these three broad categories represented most of the more notable interests; however a number of comments were directed from a constructivism approach – such as can a person be in more than one group at the same time? Of course this is true, so in a follow-on iteration (#2), the next Rich Picture evolved to try to give more granularity and transparency to the differences in the attitudes of the representative groups.
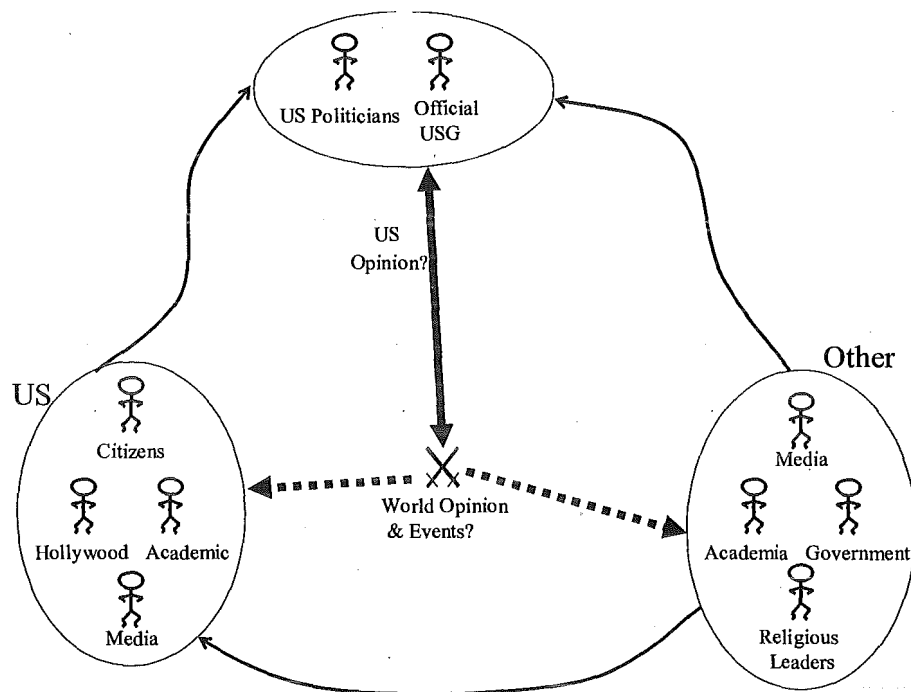
Figure 5.4 - Rich Picture #2

While there was more information added to this second diagram, in the end, the participants of this study thought that it was still not enough and that the picture should be expanded even more. The resultant figure is shown below in Figure 5.5 and while it contains basically the same list of characters or groups that can affect the body politic as in Figure 5.4, what is different is the changes wrought by the information age, namely the greatly increased connectivity. For in today's environment, almost all the participants agree that the ability for small groups or even individuals to affect world opinion has increased greatly. So the resultant effect in the evolution of the Rich Picture in Figure 5.5 is to grow a virtual spider-web of

integration, as the Internet, Satellite television, cellular telephones and other forms of technology drastically alter the forms and methods in which people around the world communicate with each other. In addition, what this has also done as alluded to in Chapter One, is to hasten the transfer of power from 'official' government organisations to other centres of influence, as information has grown as an element of power. A number of entities have recognised this trend and attempted to use this growing capability inherent in IO to their advantage, as shown in later chapters of this thesis. It is this drawing out of the interviews and analysis, with a range of ideas to improve the problem situation, that is expressed by each interviewee from a different viewpoint that makes SSM so unique (Jackson, 2000, p. 247). Therefore it was these types of perceptions and others like these that led to the maturation of the Rich Picture and the eventual development of the Root Definitions and Conceptual Models, in the form of what the 'system is' and what the 'system must do'. Of course what was most interesting was the incredible amount of cross communication or the 'horizontal' sharing of power, which is an inherent characteristic of the traits of the new information age.
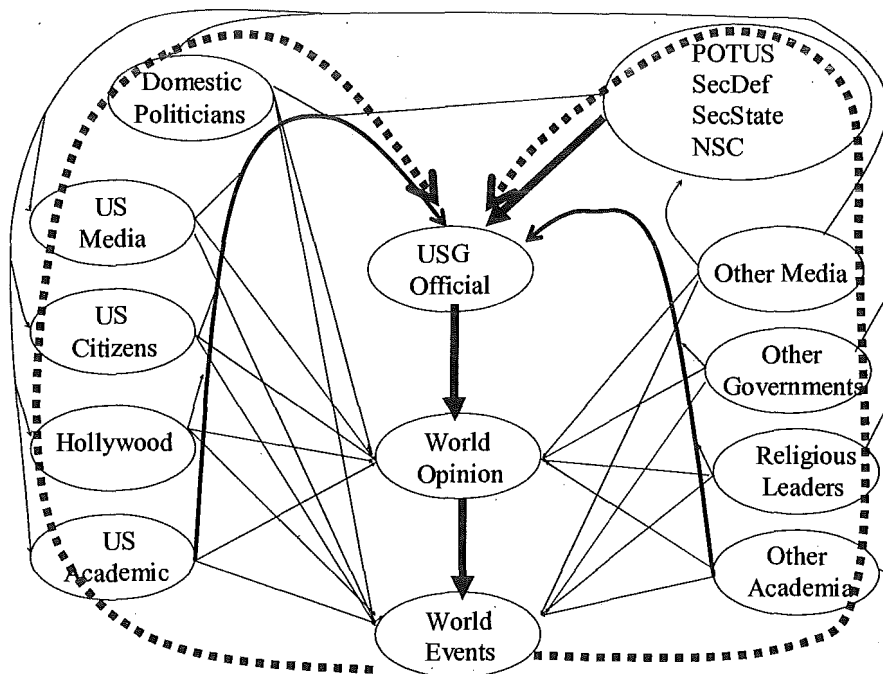
Figure 5.5 - Rich Picture #3

5.3.3   **Categorising the Data through CATWOE Analysis**

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The process that was followed for this research eventually produced two diametrically different concepts from a larger body of material drawn from the background and formal research questions and interview process. To do this, the SSM process identified the six main issues that need to be defined using the CATWOE acronym – customers, actors, transformation process, weltanschauung, owners, as well as environmental constraints. The purpose of the CATWOE mnemonic is to ensure that the Root Definition is well formulated and to ensure that the Conceptual Model produced is a defensible model. In addition, the CATWOE mnemonic is also a test of the structure and words chosen in the Root Definition (Wilson, 2001, p. xvii, 23). These CATWOE elements were pulled from the 54 final interviews by the author with 40 participants that were grouped into a rough or draft CATWOE. While this initial inventory was good, it was also rather unwieldy, so after further discussion and interviews with the research participants, this original list was pared down to a more manageable level to build final CATWOE elements as well as the final Root Definitions. For the real key and the core of the CATWOE methodology, is the pairing together of the transformation process with the weltanschauung of the different interviewees (Checkland and Sholes, 1999, p. 35). "This is because SSM provides a structured way of identifying and capturing different points of view, distilling those differences through the use of CATWOE and Root Definitions" (Checkland, 2000, 13, 6, p. 804). This importance of identifying the correct elements of CATWOE, has been alluded to throughout this section, and later in this chapter, the author will define these terms and give them meaning and context

Customers

Customers are the victims or beneficiaries of the transformation process. For this study, the customers of current and potential future updates to the IO capabilities of the United States government are numerous and varied. While some participants indicated that the 'message' was aimed at foreign populations and governments, others stated instead that many of these influence campaigns were intended instead for the American people. The victims or beneficiaries of the transformation process were also named as the federal bureaucracy itself, the Department of Defense and also military organisations from other countries. The following definitions are described for the term of customer within the context of this thesis:

United States government – This included the executive, legislative and judicial branches, the 15 Cabinet Departments to include the Department of State, Department of Homeland Security, Department of Commerce, Department of Justice plus Department of Defense and all combatant military forces

Federal bureaucracy – The level of government that includes the interagency cabinet departments alone

American Public – The average citizen, one who does not work for the United States government, nor is a consultant or lobbyist employed to support the federal bureaucracy

Foreign citizens – The population of other nations that are not employed by their governments or military forces

Actors

Those who would do the transformation process, however the actual people who would qualify varied widely among the interviewees. There did seem to be a broad consensus that while individuals could conduct IO on their own, by and large for this study, it was primarily IO conducted by the government at the interagency level and in the military services that were the primary focus. In the opinion of the participants, this is where in actuality the vast majority of IO actions and operations were conducted:

- Interagency – The 15 different cabinet level organizations and other federal agencies that are above the State and local levels.
- The National Security Council, including all offices in the Executive Branch and White House that work with this directorate.
- White House – The Presidential Administration and the Executive Branch.
- The Department of Defense, including all military agencies and affiliated services and organisations.
- The State Department – The cabinet agency, all of its different embassies and missions located around the world and its associated dependent departments.
- The former United States Information Agency that was absorbed by the State Department in 1999. Now known as the "I" Branch of that agency.

Transformation Process

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The conversion of input to output is often referred to as the transformation process. The diagram below (Figure 5.6) shows a model that the author developed from the interview process to describe this translation effort by bringing together the key different elements. For example, data is the combination of input through a specific user interface. Likewise the context of the message is developed from the environment and specific time period. Taken together, data in a certain context can be described as information, and when combined with real-world events, this becomes knowledge as shown below. The knowledge is then used as a form of output to complete the circle. In addition, as will be covered in other portions of this thesis, the ultimate success of this transformation is to ensure the efficacy, efficiency and effectiveness of this methodology, through the process as described above.
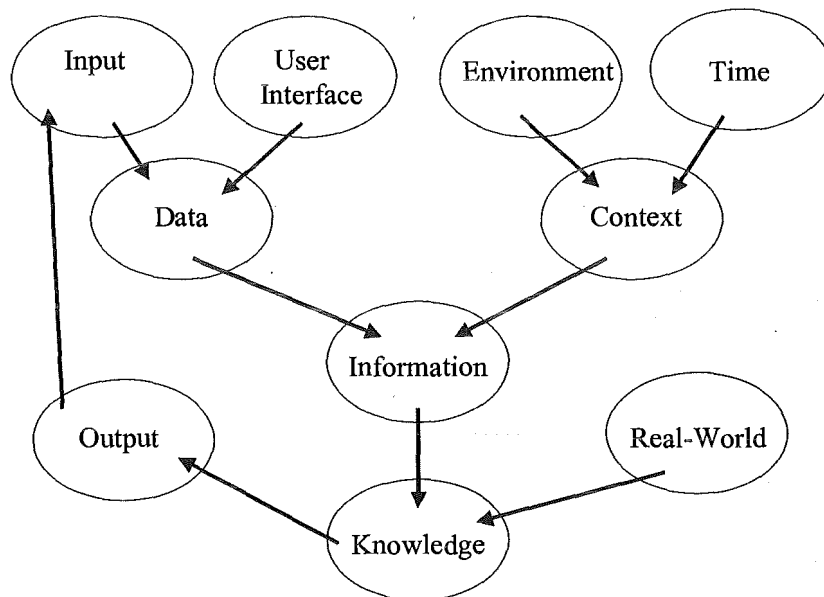
Figure 5.6 - Information and Knowledge Flow

Weltanschauung

This is the weltanschauung of the interviewees, which makes the transformation process meaningful in the context of the problem (Checkland and Sholes, 1999, p. 35). As referenced in Jackson (2000, p. 60), this concept was originally developed by Dilthey, as well as Checkland who utilised it to demonstrate that in order to understand human behaviour, we must interpret it according to people's actual intentions (Ibid). "One of the most obvious characteristics of human beings is their readiness to attribute meaning to what they observe and experience.

Indeed, human beings are not simply ready to attribute meanings, they cannot abide meaningless" (Checkland and Sholes, 1999, p. 2). In addition, what marks SSM different than other systems thinking processes or interpretative approaches, is that it provides a framework, which can use the clues from the participants to gather information. In reality then, it is a 'hearing methodology' which takes all inputs available in the form of weltanschuung or your world view (Jackson, 2000, p. 6, 13, 807). Because the sample for this research project consisted of knowledgeable individuals that could give meaningful input and advice on the status of the conduct of IO in the federal bureaucracy, in the final data it is not surprising that there was something of a consistency in the weltanschuung of a portion of the participants. An attempt was made, somewhat successfully, in gathering a set of divergent views and opinions from this same group of interviewees. A significant effort to diversify the pool of individuals to give a more varied perspective was made, with interviewees coming from not only within the federal bureaucracy but also from outside not only the United States government but America as well. So beyond serving government officials, there were also academics, retired military officers and even foreign nationals who were knowledgeable on this subject, and thus became part of this study. All of these personnel were included to ensure that valid input from all different aspects of the opinion spectrum was received, a varied weltanschuung if you will.

Owner or Owners

These are the people who could stop the transformation process. Within the United States government, this may refer to those bureaucrats or officials who perceive that the changes brought on by the Information Age, will diminish their power base. In addition, owners are also personnel who control the process, who are directly involved in the day-to-day activities of the United States government and IO missions. It is these personnel, who also manage the tremendous amounts of appropriation issues involved, that can be affected when organisations are flattened or the architecture is changed.

Environmental Constraints

These are elements outside the evaluated system, which are taken as a given or a standard. Good examples of these include information systems, networks, connectivity, video and teleconferencing capabilities, as well as the media, Internet, television and radio. It can also

include social perceptions, fiscal controls, cultural issues and historical biases. These constraints can limit the ability in some cases for the free and unfettered flow on information which is often a necessary ingredient for the success of IO. Finally it is this combination of the transformation process and weltanschauung that gives the critical understanding of the viewpoint of the participant, as noted earlier in this chapter. These are nuances of the participants thinking, to truly understand why they feel and believe the way that they do. Therefore in the author's opinion, it is crucial to go back to the key interviewees multiple times if necessary, using a constructive approach to ensure that the true meanings of their statements can be obtained. In addition, through the use of a verification process as shown later in this thesis, the author was able to confirm with the original interviewees their intentions and opinions with written feedback. Finally, as mentioned earlier in this paper, for any transformation process to be successful, it must be judged on the three counts – namely efficacy, efficiency and effectiveness. These are the criteria for which the Root Definitions and Conceptual Models were created, and which a validation procedure was followed.

5.3.4   Building Purposeful Activity Models: The Root Definition

A 'Root Definition' should be a concise description of an ideal system, and it expresses the core purpose of purposeful activity system, as well as a condensed representation of a system in its most fundamental form (Checkland and Sholes, 1999, p. 33; Jackson, 2000, p. 254).

> The purposeful activity models in SSM are devices – intellectual devices – whose role is to help structure an exploration of the problem situation being addressed... They do not purport to be representations of anything in the real situation. They are accounts of concepts of pure purposeful activity, based on declared worldviews...They are thus not models of anything, instead they are models relevant to debate about the situation..." (Checkland and Sholes, 1999, p. A21).

Root Definitions are therefore often derived from pictures or diagrams, because they are a better means of recording relationships and connections then prose. Therefore representing Root Definitions via the development of Rich Pictures is a standard process for depicting the problem situation (Checkland and Sholes, 1999, p. 45). In addition, because the basic building block of the intellectual constructs of SSM is the Root Definition and Conceptual Model assembly, the proper development of the Root Definition is thus crucial to the overall success of the SSM

process (Wilson, 2001, p. xv). Finally, the Root Definition defines what the 'system is' and the Conceptual Model describes what the system 'must do' (Ibid).

5.4   Building the Conceptual Models

From the two Root Definitions, a total of two major and 12 minor Conceptual Models were built from the data gathered in the initial set of interviews. "Conceptual Models do not seek to describe the real world or some ideal system to be engineered, but are merely accentuated one-sided views of possible relevant human activity systems" (Jackson, 2000, p. 254). So it is crucial that they are derived primarily from the Root Definitions, because they describe what the system 'is', while the Conceptual model will describe what the system 'does', because each of these major figures were 'fleshed' out with six subsets, that used the information in the embedded as part of the 63 different CATWOE elements. The idea of each model was to try to take the Rich Pictures and Root Definitions of SSM, and develop figures or diagrams that would help to build examples or prototypes that would ultimately answer the research questions. In other words, "different descriptions of reality, based on different worldviews, embodied in Root Definitions, are then turned into Conceptual Models, which are in effect, one-sided representations of weltanschauung" (Jackson, 2000, p. 249) All of these stages are part of the systems portion, mentioned earlier in Chapter Four, which is an example of the theoretical construct. For as noted throughout this study, it is in the development of these Conceptual Models, where the interviewees inevitably played a major role, with their input and their core ideas involving IO policy, personnel and organisation with respect to IO in the United States government. Taken together, the Root Definition and Conceptual Model develop a standard method or an explicit audit trail, in which both tools are used as part of the overall thinking process. This is because human activity is much more complex and requires a richer language to cope with the 'ill-defined' and 'messy' aspects of these 'soft' situations (Wilson, 2000, p. 187).
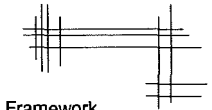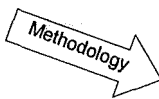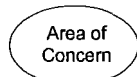
	Mode 1	Mode 2
Framework	System Ideas	SSM as in the seven stages or two streams version
Methodology	SSM as in the seven stages or two streams version (intervention)	Reflection upon the everyday flux of events and ideas using SSM to make sense of it (interaction)
Area of Concern	Some part of the real World e.g. NHS, a Company, the civil service, etc.	The learning of whoever does the reflection noted above

Table 5.2 – Mode 1 and 2 SSM Defined

(Checkland and Scholes, 1990, p. 283-284)

Another interesting experience occurred with the development of the Conceptual Models, in that the SSM process began to become more 'internalised' for the participants. The issues became more situation-driven than problem oriented, and with it, a framework began to develop, which could be employed to enable rigorous but systematic use of this methodology in everyday events (Jackson, 2000, p. 257). In essence, users of SSM were transitioning to more of a Mode 2 type of use of SSM, as they became more comfortable with its capabilities. These participants were coming to 'own' the study from the constant interviews and discussions over the years. This is a crucial aspect of SSM in its internalised form, when the participants feel comfortable enough to allow the process to 'come apart' – that is, to evolve into an experience with the greatest source of learning. Flexibility in use begins to appear as the practitioner begins to internalise its principles (Checkland, 2000, 13, 6, p. 800-801).
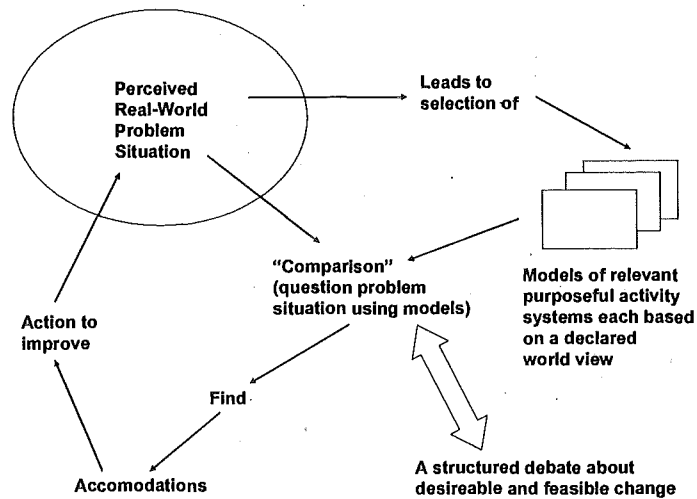
Figure 5.7 - The Current "Preferred" Representation of SSM

(Checkland and Scholes, 1999, p. A9)

5.5   Exploring the Situation and Taking Action: The Verification and Validation Process

From the Conceptual Models, the next step then of the SSM theory is to try to compare the prototypes developed from interviewee data with the reality of how IO is conducted and utilised in the United States government today. This is not always as easy as it appears. To start, the Conceptual Models are not models about the 'real-world,' but instead there are 'models relevant to the debate about the real world' (Checkland, 1995, 12, p. 50). Therefore, the validity of a model comes from two factors – whether the model is 'relevant' and whether the model is competently built. The question of relevance and validity must then be answered by the process itself. With respect to the verification process, a series of follow-up interviews were conducted starting on 1 March 2005 and extending until 1 June 2005. All 40 of the final group of interviewees were sent a follow-up detailed questionnaire, which included a request to them to respond to in a timely basis. As mentioned previously, all of these participants were selected for their in depth knowledge of the thesis subject, as well as their acceptance to continue to help with this project. In this step of the process, the follow-on questionnaires asked the interviewees to decide if they agreed on the aggregated personnel, policy and organisational issues gathered from the original set of interviews. This was done in a survey letter sent out and each participant was also asked to answer whether they agreed or not with the initial Root Definitions. In addition,

these participants were also asked to look at the Conceptual Models developed by the author and to comment on whether they agreed or disagreed with these ideas and to comment on as well. The basic concept of the verification letter was to ensure that the Conceptual Models were built correctly from the data gained from the original interview process.

The ultimate goal of these follow-on interviews was then to validate whether these Conceptual Models reflect the Root Definitions, using the CATWOE elements to ultimately tie back to the information received from the original participants. In addition, it was also desired to use the verified data to ensure that the Conceptual Models as developed are as accurate as possible. Finally of course, the aim of these questions was to compare and contrast the Conceptual Models to the actual structures that exist in reality, especially within the United States government. Once the follow-on interviewees returned their questionnaire forms, step five of the SSM process was initiated, namely to compare the Conceptual Models to reality. In each of the two models sent out for consideration, considerable comments were returned by the participants. Changes to the Conceptual Models were then made based on an amalgamation of the data from the survey letters to form the final diagrams. These new models represent concepts that most optimally describe the current and desired state of IO within the United States government as reflected by the interviewees' statements.

The verification of the Conceptual Models by the follow-on questionnaires allowed the surfacing of those features that were desirable and feasible from a realistic viewpoint. If there were ideas or attributes that were part of the original representation, that ultimately proved to be unrealistic in the reality of tactical operations of IO, then it was this part of the methodology that brought those disconnects to light. This is step six of the SSM process, and it is at this point, that the data starts to form a final series of recommendations that ultimately attempt to answer the research questions. So it is obvious that the ability of this methodology to affect transformation ultimately depends on the accurate input from all participants in the process. Thus, throughout this entire methodology, there was need for constant feedback from the participants, to ensure the accuracy of their data.

The validation session was conducted at the 4th Annual European Conference on International Warfare at the University of Glamorgan in Wales in 2005. This review was an important part of the thesis procedure because it ensures a direct link by the author to the theoretical construct, as well as ensuring that the entire procedure is correct from a methodology

aspect. Paper or electronic copies were kept of the data and referred to throughout this project, and the information from those conversations ultimately found its way not only into the Root Definitions. Efforts were made to be able to trace the data up and down the chain of evidence. In this matrix, portions of the CATWOE elements in the respective two Root Definitions were matched up to comments made by the various participants. It represents the best attempt that can be made to triangulate the data, to present the most effective and efficient match of interviewee comments to eventual Conceptual Model.

5.6 Summary of Methods used in this Research

Overall, there was a concerted attempt to be consistent in his use of interviews and SSM to present a rigorous and academic approach to this 'messy issue. The use of IO by the United States government is easy to understand or explain, and so a qualitative approach such as utilized in this study appeared after much research to be the best methodology. Using a tailored process, that included the author as the central integrator of the data was also key, because it allowed a much greater mix of participants, weltanschauung and overall knowledge gain in the procedure.

Chapter 6 – Results

6.1   Introduction

In this chapter, the results from all of the interviewees are illustrated and analysed within the SSM construct. This data was derived from the participants through a set of the original survey questions, which tended to focus on three areas, namely the development and improvement of Information Operations policy, the organisation and the personnel within the United States government. The answers and information obtained from these participants was rough and incoherent, often without form or a method to analyse in detail. Thus a theoretical construct or methodology was needed to draw from the interviewee data, patterns, concepts and a cohesive explanation for what these participants in the thesis were attempting to understand and explain. The ultimate goal of this analysis of the data within the SSM process is to derive a set of Root Definitions, which are crucial to precisely describing a definition of the ideal situation that exists in the minds of the practitioners. From there, a set of Conceptual Models can then be developed to graphically portray the 'ideal' solution in order to improve the conduct of IO within the United States government. In this case, the raw data was categorised and aggregated into a form that fits within this theoretical construct. That is, the tasks detailed later in this chapter was assimilated from these disparate interview sessions, conducted over a multi-year period, and were parsed and reformatted to fit into a coherent format utilizing the CATWOE mnemonic. From these initial answers to the research questions, all of the data was divided into themes in the CATWOE structure as an initial draft of the aggregated response.

6.2   An Example of the Dichotomy of Weltanschauung in the Interviewee's Responses

As mentioned earlier in this chapter, the answers to these survey questions and alternate queries that originated from these interviews, were often wide ranging and far-sighted but were not necessarily consistent across the spectrum of individuals. In fact, the input from the thesis participants tended to vary widely, with the dichotomy between some of the responses as very interesting and showing the truth depth and breadth of the weltanschauung of the participants. To demonstrate the varied participants' opinions, a number of examples are shown with respect to the questions that were discussed on the policy issue and probably the most contested of all of

the survey questions, namely is a comprehensive top-down national information strategy required? It was the first two of these survey answers that indicated the greatest dichotomy among the participants, where answers were split into radically different opinions. For example, interviewee #24 stated absolutely that a top-down national information strategy was needed. He believed this because a mandate was desired to: "sell United States values and to counter anti-US propaganda," but regretted that often the actions and funding of the federal government does not follow policy guidelines. In addition, this same participant stated as an example that in "Operation Iraqi Freedom, the coalition had a strategic information campaign, yet the same cannot be said for the larger Global War on Terrorism", where he believed that ..."we do not have an information/campaign strategy." So in summary, his belief was that while there is a need for a long-term top down national information strategy for the United States that capability does not exist today. Interviewee #39 agreed that the United States needs a comprehensive Information Strategy, and he stated that "A Strategic Communication Policy is still a requirement in the interagency process to get the implementing strategies." He thought that there needed to be an information component to feed into the Theatre Engagement Plan's to drive the cascading strategies, as part of a full spectrum National Information Strategy that is more than just a communication plan, with a number of holistic and inclusive components.

With regard to federal and coalition operations in an IO environment, Interviewee #38 thought that the pie analogy is very good, a spin-off of Presidential Decision Directive 56, however in the end, he thought that the United States government did not follow the process of this Executive Committee in Operation Iraqi Freedom, that is: "we need to do what we say." This same participant stated that at the Interagency Deputies' and Principals' level, "everybody agreed that deputies needed to get information on the Operation Iraqi Freedom IO campaign on a weekly basis, "with an acknowledgement at the Interagency Principals level, that beyond war in Iraq, that sometime there ought to be dedicated at their meetings to talk big picture IO issues". The interviewee then described how the United States government interagency organisations should conduct strategic communications, but he acknowledged that with very few exceptions, this has not occurred. He thought that these senior level agencies mostly tended to deal with policy issues but in terms of a logical sequence that gives IO guidance, real world examples are virtually non-existent, and in fact it was a major achievement to recognize that IO is important. Finally, as an example of dichotomy among dissertation participants, interviewee #39 stated that

the State Department has International Information Programs, but that capability is not physically located at the Main State complex but instead at another facility in Washington, DC (Building SA-44). He was adamant that these IO type functions must instead be shifted back to the Main State building, with a communications and physical connectivity that is not technology and mentally separated. The concept that IO Policy is fragmented was also lamented by interviewee #35. He thought that the Department of Defense was trying to pull back perspective from everything to narrow it down to a lane, "not trying to strap on others, which is okay if other departments are stepping up to the plate, but Department of State and Department of Homeland security are not." He thought that "Cyber Security is the red headed step child since Clarke and Schmidt left, plus public diplomacy is on shaky ground with the departure of Charlotte Beers." This same participant believed that "there needs to be an overarching policy, that the Office of Global Communications cannot do this, and that they can barely supervise, so there is nothing that brings together information as an element of power.

6.3 Summary of Initial Responses from Interviewees from each Question

As shown above, the wide variety of answers and world views from the interviewees, all tended to lead to large range of data points from which to begin the analysis process. Likewise of the answers provided in the interviews, which were collected over a long time period, the goal of this process was to compare and contrast to each other. However it rapidly became apparent during this process, that there was much duplication in the responses and so these 'extra' answers were culled out, in order for the discrete opinions to be represented only once. The CATWOE tool was then used to break these aggregated answers from the survey questions into discrete themes or definable areas that could be compared and contrasted. To do this, as the initial aggregated data were reviewed the CATWOE elements were then pulled out, identified and labelled. In this particular case, after reviewing all of the aggregated answers from all participants, a total of 63 subcategories were created under the six different CATWOE element categories. Thus each interviewee's data about the conduct of IO in the United States government was ultimately funnelled into one of these 63 different CATWOE elements. For example, in one of the first analyses of participant data, interviewee #24 cited opinions about the clients, which relate to the development of three different types of clients, cited as C1, C2 and C3, which relate to Foreign Audiences, key decision makers and United States citizens

respectfully. Likewise another interviewee developed thoughts on the Actors involved, which equated to CATWOE element A7, specifically that the two political coordinating committees at the State Department and the National Security Council had no decision making authority. This detailed analysis of each and all of the individual description of a participant's thoughts, which are considered as standalone data points were then labelled with each particular CATWOE element number. Ultimately then, all of aggregated answers from the thesis participants are fleshed out into these 63 individual CATWOE elements, which will then be linked explicitly back to the original data in the next chapter. This refinement or grouping of elements will allow as mentioned previously, the development of a series of Root Definitions. The 63 aggregated CATWOE answers as shown below are therefore the result of the initial analysis of the interviewee data. These responses are reviewed in much greater detail throughout this chapter, with the areas highlighted including the different CATWOE elements that were cited the most by the respective participants. The outcome of this first analysis is shown below in Diagrams 6.1 – 6.19, with explanatory language describing in much greater detail the meaning behind interviewee data.

	Clients			World View
C1	Foreign Audiences		W1	Political, military, USG, engineers, IR professors
C2	Key decision makers (foreign and domestic)		W2	Many practitioners do not understand IO
C3	US Citizens (general public)		W3	IORM almost reverting back to C2W - why?
C4	US Government including military		W4	Is their difference between IO and PD lane?
C5	Academia (foreign and domestic)		W5	Do we need a National Information Policy?
C6	Media including Hollywood		W6	Or should we just update the NSS?
	Actors			**Owners**
A1	Media/Hollywood - reservists or liasion personnel needed?		O1	Interagency to include the Dos, DoD, NSC and WH - need more coord?
A2	Planners and ... need to work together		O2	Two PCCs are redundant
A3	TRG and consultants - volunteers aka like civil defense?		O3	Is their trust in the PM efforts of these organizations? USIA?
A4	How many actors have been trained in IO?		O4	In the OSD, oversight of IO is everywhere
A5	Standalone IO cells - have they worked well?		O5	How many have been trained in IO?
A6	Old USIA types/ State Department, are they integrated?		O6	DoD is building PD capability because it believes State is not doing enough
A7	DoS PCC and NSC PCC - no decision making authority		O7	WH is good at political domestic message and spin but often reacts to foreign events
A8	4th POG - too tactical , to low on CoC		O8	Need to quickly get decisions on PD from on high
A9	International IO Operators - corporate IO		O9	State needs a bigger role - bring back
A10	Clearances and language skills are essential			**Environment**
A11	NSC OGC and WH/DoD - relate to a National Information Council?		E1	Time is crucial, computers have increased change but products should be checked
A12	Information Czar? What about an IO Corps or a CinC IO/Standing JHQ?		E2	Key US values - freedom, DoI, Constitution, a nation o immigrants
A13	Do we need a surge capability?		E3	Information is like terrain, cannot leave unoccupied
A14	Senior level USG training & awareness is needed		E4	Money and resources drive capabilities
A15	Alistair Campbell or Karen Huges type of influence is desired		E5	US DOS IIP has no directive voice for PD - spread PD officers everywhere?
	Transformation		E6	Interagency bureaucracies - will org change work?
T1	Strategic Information Campaign, ie strategic PSYOP, integrating strategy which is coherent is very important		E7	Need a 24/7 capability? Modeled on a campaign headquarters? Around the world (US/UK/AU) ie follow the sun
T2	Innovation occurs at the margins		E8	US PD must be faster, more reactive
T3	Flatten the process - integrate - dynamic		E9	Truth is essential but being first is better
T4	Structure is bad - disorganized		E10	IO is not new
T5	Hiring practives for military civilians dates from industrial era		E11	IW and Psyop are not good terms for interagency, IO and SC are much better but EBO may be the best?
T6	We need continuous training and education		E12	Eat your own dog food (US)
T7	Effects based operations (EBO)		E13	Training or lack of is badly needed for PD
T8	Target analysis		E14	Themes need to be tied together
T9	IORM - major recommendations for training		E15	Top to bottom or bottom to top?
T10	Acccess to top leadership - overall guidance		E16	What are we trying to protect?
T11	What are the overall goals?			
T12	Set out top-level nodes and missions - goals and objectives			
T13	Cyber Security and PD related?			

Table 6-1: Aggregated CATWOE Answers

The CATWOE elements highlighted were the number one issue in each category that was cited by the participants as part of the interviews. The entire reordering of these elements will be delineated in much greater detail below, as each of the six CATWOE areas are analysed further. What is also important to recognize is that while the number of times a particular CATWOE element was mentioned are counted, overall, EVERY data point is accounted for and utilised as part of this research effort.

6.4   Clients

As shown in Table 6.2, there were six different clients in the initial list developed from the interviewee's comments. These correspond to the general categories shown earlier in the Rich Picture process.

Clients	
C-1	Foreign Audiences
C-2	Key decision makers (foreign and domestic)
C-3	US Citizens (general public)
C-4	US Government including military
C-5	Academia (foreign and domestic)
C-6	Media including Hollywood

Table 6.2 – Initial Data on Prospective Clients

From this initial analysis, a tabulation of the clients given by the interviewees' responses was conducted as shown below. This kind of breakdown of the data was conducted in each of the six different CATWOE element areas to show which topics were cited the most frequently by the participants as part of the research process. The left column indicates the interview number and the six columns to the right correspond to one of the named Clients in Diagrams 6.1 or 6. 2. The second to the bottom row, shows the actual number of citations, while the bottom row shows the numerical order of the Clients after the answers are tabulated.

Interviewee	C 1	C 2	C 3	C 4	C 5	C 6
7						
8						
9	1	1	1	1	1	1
10	1	1	1	1	1	1
17	1	1	1	1		
21	1	1		1	1	
22				1		
23	1					
24				1		
25	1	1		1		
26	1	1		1		1
27		1		1	1	1
28	1	1		1		
29	1	1	1	1	1	1
30	1	1	1	1		
31	1	1		1	1	
32	1	1		1	1	
33				1		
34			1	1		
35	1	1	1	1	1	
37	1	1	1	1		
38		1		1		
39	1	1		1	1	
40	1	1		1		
	16	17	8	21	10	5
	3	2	5	1	4	6

Table 6.3 – Tabulated Data on Prospective Clients

As you can see from the data C4, C2 and C1 were the most commonly mentioned clients from the interviewees. From this analysis, the final reordered version of the Clients with respect to this thesis is shown below.

Clients	
C-4	US Government including military
C-2	Key decision makers (foreign and domestic)
C-1	Foreign Audiences
C-5	Academia (foreign and domestic)
C-3	US Citizens (general public)
C-6	Media including Hollywood

Table 6.4 – Final Ordering of Client's based on Interviewees Cited Response

What came through very prominently from the participants in their responses was in that order to change the way in which IO is conducted by the federal bureaucracy, then obviously you needed to affect or target the key decision-makers in the United States government. Foreign audiences

also ranked high as there was a large difference in the data between the top three clients as opposed to the rest of the available choices. These three top choices were mentioned by over 65% of all participants with the number one client, the federal bureaucracy mentioned with almost 88% of the respondents citing this factor as important.

6.5   Actors

Likewise, the actors were derived from the participants themselves as shown below:

	Actors
A-1	Media/Hollywood - reservists or liasion personnel needed?
A-2	Planners and operators need to work together
A-3	TRG and consultants - volunteers aka like civil defense?
A-4	How many actors have been trained in IO?
A-5	Standalone IO cells - have they worked well?
A-6	Old USIA types/ State Department, are they integrated?
A-7	DoS PCC and NSC PCC - no decision making authority
A-8	4th POG - too tactical , to low on CoC
A-9	International IO Operators - corporate IO
A-10	Information Czar? What about an IO Corps or a CinC IO/Standing JHQ?
A-11	NSC OGC and WH/DoD - relate to a National Information Council?
A-12	Clearances and language skills are essential
A-13	Do we need a surge capability?
A-14	Senior level USG training & awareness is needed
A-15	Alistair Campbell or Karen Huges type of influence is desired

Table 6.5 – Initial Data on Prospective Actors

The same analysis was conducted on the actor data, with a tabulated count conducted of the number of times a particular data point was cited by the participants.

Interviewee	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15
7		1												1	
8						1					1		1	1	
9		1												1	
10			1	1				1							
17		1		1	1	1	1	1			1				
21		1	1	1		1			1					1	1
22															
23	1					1	1			1	1	1			
24		1		1	1		1							1	
25		1		1	1	1	1		1					1	
26	1	1		1		1			1	1				1	1
27	1	1	1	1											
28				1		1									1
29	1	1	1	1		1			1			1		1	1
30		1		1					1	1		1	1		
31		1		1			1		1		1			1	
32		1		1	1	1	1				1	1	1	1	
33				1											
34		1		1	1			1							
35		1		1	1	1	1				1			1	1
37					1	1									
38		1		1	1	1	1				1			1	
39		1		1		1	1							1	1
40		1					1								
	4	17	4	17	8	13	10	2	7	3	7	4	3	13	6
	10	1	10	1	6	3	5	15	7	13	7	10	13	3	9

Table 6.6 – Tabulated Data on Prospective Actors

As can be seen, the most common Actors were A2, A4, A14, and A6, with a large discrepancy between these first six data elements and the other nine. Both of the top two choices tied at 63% citation rate, with a tie again as well for positions three and four at 54% citation rate. After the top four positions, the choice of prospective Actors by the participants expands rapidly with no individual selection receiving more than 33% of the citations noted.

Actors	
A-2	Planners and operators need to work together
A-4	How many actors have been trained in IO?
A-14	Senior level USG training & awareness is needed
A-6	Old USIA types/ State Department, are they integrated?
A-7	DoS PCC and NSC PCC - no decision making authority
A-5	Standalone IO cells - have they worked well?
A-9	International IO Operators - corporate IO
A-11	NSC OGC and WH/DoD - relate to a National Information Council?
A-15	Alistair Campbell or Karen Huges type of influence is desired
A-12	Clearances and language skills are essential
A-1	Media/Hollywood - reservists or liasion personnel needed?
A-3	TRG and consultants - volunteers aka like civil defense?
A-10	Information Czar? What about an IO Corps or a CinC IO/Standing JHQ?
A-13	Do we need a surge capability?
A-8	4th POG - too tactical , to low on CoC

Table 6.7 – Final Ordering of Actor's based on Interviewees Cited Response

For the analysis of the Actors as shown above it was the need for integration among the government organisations, the overall lack of training, the need for greater decision making authority and an inadequate structure for conducting IO which were most frequently cited as the key findings. These issues will also be found in other areas of the CATWOE analysis, but they were especially prevalent here, when the data is compared to all 15 possible choices.

6.6 Transformation

With regard to the transformation process, the 13 aggregated answers are listed below. These were the methodological activities that were deemed the most appropriate to improve the conduct of IO by the United States government.

Transformation
T-1   Strategic Information Campaign, ie strategic PSYOP, integrating strategy which is coherent is very important
T-2   Innovation occurs at the margins
T-3   Flatten the process - integrate - dynamic
T-4   Structure is bad - disorganized
T-5   Hiring practives for military civilians dates from industrial era
T-6   We need continuous training and education
T-7   Effects based operations (EBO)
T-8   Target analysis
T-9   IORM - major recommendations for training
T-10   Acccess to top leadership - overall guidance
T-11   What are the overall goals?
T-12   Set out top-level nodes and missions - goals and objectives
T-13   Cyber Security and PD related?

Table 6.8 – Initial Data on the Prospective Transformation Process

Similar to the first two CATWOE elements, the answers to the transformation process were tabulated and counted below.

Interviewee	T 1	T 2	T 3	T 4	T 5	T 6	T 7	T 8	T 9	T 10	T 11	T 12	T 13
7	1									1			
8													
9						1						1	
10		1	1		1								
17	1			1			1		1			1	
21	1		1	1		1						1	1
22					1								
23													
24				1		1	1	1	1	1	1	1	
25	1							1	1		1	1	
26	1	1	1			1							
27						1				1	1		1
28	1										1		
29	1		1			1				1			
30				1				1			1		1
31	1					1	1	1			1	1	
32	1		1	1		1			1	1	1	1	
33				1		1							1
34				1		1						1	1
35	1			1		1			1	1	1	1	1
37			1			1		1			1	1	
38	1					1	1	1	1		1	1	
39	1		1	1		1				1	1	1	
40										1	1		
	12	2	7	9	2	14	5	6	5	8	12	12	6
	2	12	7	5	12	1	10	8	10	6	2	2	8

Table 6.9 – Tabulated Data on Prospective Transformation Process

Per this analysis, T6 was the number one response, with T1, T11 and T12 all tied for second place. All of these data points received at least 50% of the citations recorded, and below these top four answers, no CATWOE element received more than 38% of the citations recorded, with most of the answers six of the 13, receiving 25% or less commonality. This diffuse spread of concepts demonstrates that the actual transformation process suggested by the participants is not as certain or clear to the interviewees. All of the answers for Transformation are displayed in their respective order below.

Transformation	
T-6	We need continuous training and education
T-1	Strategic Information Campaign, ie strategic PSYOP, integrating strategy which is coherent is very important
T-11	What are the overall goals?
T-12	Set out top-level nodes and missions - goals and objectives
T-4	Structure is bad - disorganized
T-10	Acccess to top leadership - overall guidance
T-3	Flatten the process - integrate - dynamic
T-13	Cyber Security and PD related?
T-8	Target analysis
T-7	Effects based operations (EBO)
T-9	IORM - major recommendations for training
T-2	Innovation occurs at the margins
T-5	Hiring practives for military civilians dates from industrial era

Table 6.10 – Final Ordering of the Transformation Process based on Interviewees Cited Response

What this data emphasizes is the need once again for continuous training integrated with policy changes that are tied to the overall goals set out at the executive level. This emphasis on top-down guidance and centralised process was very prevalent among the interviewees with a significant distribution of the data focused on the first four elements listed above.

6.7 Weltanschauung (Worldviews)

As mentioned earlier, attempts were made to find participants with divergent set of worldviews. The initial aggregated answers are shown below, which indicate that in some sense this effort was successful.

World View	
W-1	Political, military, USG, engineers, IR professors
W-2	Many practitioniers do not understand IO
W-3	IORM almost reverting back to C2W - why?
W-4	Is their difference between IO and PD lane?
W-5	Do we need a National Information Policy?
W-6	Or should we just update the NSS?

Table 6.11 – Initial Data on Prospective World Views

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The tabulated answers for Weltanschauung are shown below.

Interviewee	W 1	W 2	W 3	W 4	W 5	W 6
7		1				1
8		1			1	
9						
10		1				
17		1	1			
21	1	1				
22						1
23						
24	1	1	1	1		
25		1		1		
26	1	1		1	1	
27					1	
28		1				
29		1		1		
30		1			1	
31	1	1				1
32		1	1	1	1	
33		1			1	
34	1	1			1	
35	1	1	1	1	1	
37		1			1	1
38	1	1	1			1
39	1	1			1	
40			1	1	1	
	8	19	6	7	11	5
	3	1	5	4	2	6

Table 6.12 – Tabulated Data on Prospective World Views

As seen in the numerical analysis, the most common world view was W2, followed by W5 and W1 as shown below. Note that by far, a large majority of the participants (almost 80%) cited CATWOE element W2, and that there is a significant gap to the next element, W5 with only 45% of the citations noted.

World View	
W-2	Many practitioniers do not understand IO
W-5	Do we need a National Information Policy?
W-1	Political, military, USG, engineers, IR professors
W-4	Is their difference between IO and PD lane?
W-3	IORM almost reverting back to C2W - why?
W-6	Or should we just update the NSS?

Table 6.13 – Final Ordering of World View based on Interviewees Cited Response

The data from the participants emphasised that across the spectrum, most participants and practitioners do not understand IO and that more training is needed. This near universal acknowledgement of the requirement for greater education in this capability across the board for all personnel associated with this thesis is a constant theme that will be noted in the next chapter with the development of the Root Definitions.

6.8 Owners

The owners of the process were also examined in particular in relation to their ability to control the evolution of IO within the United States government.

	Owners
O-1	Interagency to include the Dos, DoD, NSC and WH - need more coord?
O-2	Two PCCs are redundant
O-3	Is their trust in the PM efforts of these organizations? USIA?
O-4	In the OSD, oversight of IO is everywhere
O-5	How many of the above have been trained in IO?
O-6	DoD is building PD capability because it believes State is not doing enough
O-7	WH is good at political domestic message and spin but often reacts to foreign events
O-8	Need to quickly get decisions on PD from on high
O-9	State needs a bigger role - bring back

Table 6.14 – Initial Data on Prospective Owners

The tabulated responses for the owners are shown below.

Interviewee	O1	O2	O3	O4	O5	O6	O7	O8	O9
7						1			1
8							1		1
9									
10							1		1
17	1	1	1		1	1		1	1
21								1	
22									
23						1	1		1
24	1	1		1	1				
25	1	1	1		1	1		1	1
26	1		1		1		1	1	1
27	1								
28	1		1					1	1
29					1	1	1	1	1
30									
31	1	1	1				1		1
32	1	1	1		1	1	1	1	1
33					1				
34									
35	1	1	1		1	1	1	1	1
37	1				1		1		
38	1	1	1		1				
39	1	1	1		1	1	1	1	1
40	1	1	1					1	1
	13	9	10	1	11	8	10	10	13
	2	7	4	9	3	8	4	4	1

Table 6.15 – Tabulated Data on Prospective Owners

In this analysis, O9 was selected most frequently with O1 and O5 trailing respectfully in second and third place, and the rest of the elements as shown below. What is interesting to note from the data is that the nearly all of the data elements are centred in a relatively small band between 33-58% as shown here: O9 (58% of the citations), O1 (54%), O5 (45%), O7 and O8 tied at (41%), O2 (37%) and O6 (33%). None of the elements enjoyed an overwhelming majority and one in particular (O4), was only cited once by one participant in the entire thesis research.

Owners
O-9   State needs a bigger role - bring back
O-1   Interagency to include the Dos, DoD, NSC and WH - need more coord?
O-5   How many of the above have been trained in IO?
O-3   Is their trust in the PM efforts of these organizations? USIA?
O-7   WH is good at political domestic message and spin but often reacts to foreign events
O-8   Need to quickly get decisions on PD from on high
O-2   Two PCCs are redundant
O-6   DoD is building PD capability because it believes State is not doing enough
O-4   In the OSD, oversight of IO is everywhere

Table 6.16 – Final Ordering of Owner's based on Interviewees Cited Response

Thus to continue the analysis of the data, what is interesting about this information is the tight variation (within a 25% band) of different phrases of similar themes by the participants. There is a very heavy emphasis on the need for a stronger State Department, with more trained officials, and the integration of the White House into Information Operations as part of a foreign policy. All of these themes come together to give a sense that while the Department of Defense may be playing a major role today, a large majority of the interviewees desire to bring back capability to the State Department that was formerly resident in the United States Information Agency and to integrate that more tightly via the interagency process with the White House.

6.9   Environment

The final element of the CATWOE tool that was examined included the environment. In this area, a large number of divergent responses were recorded.

Environment	
E-1	Time is crucial, computers have increased change but products should be
E-2	Key US values - freedom, DoI, Constitution, a nation of immigrants
E-3	Information is like terrain, cannot leave unoccupied
E-4	Money and resources drive capabilities
E-5	US DOS IIP has no directive voice for PD - spread PD officers everywhere?
E-6	Interagency bureaucracies - will org change work?
E-7	Need a 24/7 capability? Modeled on a campaign headquarters? Around the world (US/UK/AU) ie follow the sun
E-8	US PD must be faster, more reactive
E-9	Truth is essential but being first is better
E-10	IO is not new
E-11	IW and Psyop are not good terms for interagency, IO and SC are much better but EBO may be the best?
E-12	Eat your own dog food (US)
E-13	Training or lack of is badly needed for PD
E-14	Themes need to be tied together
E-15	Top to bottom or bottom to top?
E-16	What are we trying to protect?

Table 6.17 – Initial Data on the Prospective Environment

The tabulated results from the environmental data are shown below.

Interviewee	E 1	E 2	E 3	E 4	E 5	E 6	E 7	E 8	E 9	E 10	E 11	E 12	E 13	E 14	E 15	E 16
7								1							1	
8		1	1				1		1	1			1			1
9						1					1				1	
10		1	1	1			1	1		1		1				
17				1	1	1		1		1			1	1	1	
21										1			1			1
22	1					1										
23		1				1	1	1								
24				1												
25				1	1	1		1						1		
26		1			1			1					1	1		
27						1							1		1	
28								1				1				
29		1				1		1		1			1			1
30	1		1			1		1	1	1		1		1	1	1
31						1		1		1			1			
32	1			1		1				1	1		1	1	1	
33				1										1	1	
34	1									1				1	1	
35								1		1	1		1	1	1	1
37		1								1				1	1	
38				1		1		1		1	1		1	1		1
39				1	1	1		1		1	1		1	1	1	1
40					1	1		1					1			
	4	6	3	8	5	13	3	14	2	13	5	3	12	11	11	7
	12	9	13	7	10	2	13	1	16	2	10	13	4	5	5	8

Table 6.18 – Tabulated Data on the Prospective Environment

The results from the numerical analysis are shown below with the top three including E8, E6 and E10, and the rest as delineated below. Only E8 broke out with more than 50% of the citations recorded, yet there was a relatively tight group of answers in the 45-58% range, with the top six environmental elements selected all recorded in that region. After those six citations, there was a significant gap down to 33% for any of the rest of the data points, with the last 10 answers ranging between 8-33% of the respondents.

Environment	
E-8	US PD must be faster, more reactive
E-6	Interagency bureaucracies - will org change work?
E-10	IO is not new
E-3	Information is like terrain, cannot leave unoccupied
E-13	Training or lack of is badly needed for PD
E-14	Themes need to be tied together
E-15	Top to bottom or bottom to top?
E-4	Money and resources drive capabilities
E-16	What are we trying to protect?
E-2	Key US values - freedom, DoI, Constitution, a nation of immigrants
E-11	IW and Psyop are not good terms for interagency, IO and SC are much better but EBO may be the best?
E-5	US DOS IIP has no directive voice for PD - spread PD officers everywhere?
E-1	Time is crucial, computers have increased change but products should be checked
E-12	Eat your own dog food (US)
E-7	Need a 24/7 capability? Modeled on a campaign headquarters? Around the world (US/UK/AU) ie follow the sun
E-9	Truth is essential but being first is better

Table 6.19 – Final Ordering of Environmental Data based on Interviewees Cited Response

This last category brings together many of the key ideas into one of the CATWOE elements. Namely in this issue area, there is a heavy emphasis on decision making skills, integration, the fact that IO is not new, and the environment must be understood as labelled by the participants, the importance of training and finally the need to develop coherent themes that are tied together. These data points which were noted in section were also set apart in the data by the participants with a wide discrepancy (too vague) or gap between the top six environmental elements selected and the bottom 10.

In addition, as noted at the beginning of this chapter, the actual priority and ordering of the interviewee data as shown earlier, is derived directly from the participants themselves. What this section demonstrates, is the first of three steps, where the input can be easily traced from a specific interview to a CATWOE element and eventually as shown in the next two chapters, where the Root Definitions and Conceptual Models are later developed. It is the direct applicability of the data, through the mnemonic tool, and then onto other portions of the SSM process, that allows the reader to follow the key points and ideas of the themes uncovered

6.10　　　Conclusion

A general set of three primary survey questions were asked to the thesis participants over a wide variety of settings and a long period of time. The answers to these queries were then synopsised and correlated, where duplicates were culled to produce aggregated responses. These responses were then translated to match the CATWOE mnemonic tool and the 63 elements were reduced from this data per Diagram 6-1. The results of these individual elements were then counted and tabulated across all interviewees, and elements were reordered as shown in Diagrams 6.4, 6.7, 6.10, 6.13, 6.16 and 6.19. It was these steps that prioritised the data collected from the participants in a meaningful way, so that in the next chapter, the top six selections of each category were selected and normalised in order that a series of Root Definitions could be developed.

Chapter 7 – Root Definitions

7.1   Introduction

In Chapter Six, final versions of the aggregated CATWOE elements were derived from the multiple and varied responses of the thesis participants. As shown in the figure below, an initial ranking of the data was tabulated but as alluded to in Chapter Five, numerical priority is not the 'true' or ultimate value of a CATWOE element, and in fact the SSM process assumes that everyone's opinion or weltanschauung are valid and each should be incorporated into the overall problem solution. Therefore, in order to develop valid Root Definitions, using the precepts of SSM, all the data from the weltanschauungs of the participants, namely the 63 CATWOE elements were incorporated into the model. This process of including all the interview data is the main thrust of this chapter, with the reader having the ability to trace the raw data from its initial collection to the final disposition as part of the Root Definition. As mentioned in Chapter Six and reiterated here, the ability to ultimately group this disparate information into a set of coherent Root Definitions was not a straight-forward process with a number of steps taken in order to make the interviewee data useful from a conceptual standpoint.

	C	A	T	W	O	E
1	C4	A2	T6	W2	O9	E8
2	C2	A4	T1	W5	O1	E6
3	C1	A14	T11	W1	O5	E10
4	C5	A6	T12	W4	O3	E3
5	C3	A7	T4	W3	O7	E13
6	C6	A5	T10	W6	O8	E14
7		A9	T3		O2	E15
8		A11	T13		O6	E4
9		A15	T8		O4	E16
10		A12	T7			E2
11		A1	T9			E11
12		A3	T2			E5
13		A10	T5			E1
14		A13				E12
15		A8				E7
16						E9

Table 7.1 – Aggregated Tabulated Data on CATWOE Elements

7.2   Tailoring CATWOE Elements into Thematic Ideas

As noted in Chapter Six, the CATWOE elements were tabulated and reordered as shown above, and colour coded based on 12 thematic ideas, to tailor the data into a useable format, as shown below.

Clients	Actors	Transformation	Worldview	Owners	Environment
US Government including military	Planners and operators need to work together	We need continuous training and education	Many practitioners do not understand IO	State needs a bigger role - bring back	US PD must be faster, more reactive
Key decision makers (foreign and domestic)	How many actors have been trained in IO?	Strategic Campaign, ie strategic PSYOP/IO, integrating coherent strategy - important	Do we need a National Information Policy?	Interagency to include the DoS, DoD, NSC and WH - need more coord?	Interagency bureaucracies - will org change work?
Foreign Audiences	Senior level USG training & awareness is needed	What are the overall goals?	Political, military, USG, engineers, IR professors	How many of the above have been trained in IO?	IO is not new
Academia (foreign and domestic)	Old USIA types/ State Department, are they integrated?	Set out top-level nodes and missions - goals and objectives	Is their difference between IO and PD lane?	Is their trust in the PM efforts of these organizations? USIA?	Information is like terrain, cannot leave unoccupied
US Citizens (general public)	DoS PCC and NSC PCC - no decision making authority	Structure is bad - disorganized	IORM almost reverting back to C2W - why?	WH - good political domestic msg and spin -reacts to foreign events	Training or lack of is badly needed for PD
Media including Hollywood	Sometimes IO cells - have they worked well?	Access to top leadership overall guidance	Or should we just update the NSS?	Need to quickly get decisions on PD from on high	Themes need to be tied together
	International IO - ie corporate IO?	Flatten the process - integrate - dynamic		Two PCCs are redundant	Top to bottom or bottom to top?
	NSC OGC and WH/DoD - relate to a NIC?	Cyber Security and PD related?		DoD is building PD capability because it believes State is not doing enough	Money and resources drive capabilities
	Alistair Campbell or Karen Huges type of influence is desired	Target analysis		In the OSD, oversight of IO is everywhere	What are we trying to protect?
	Information Czar? What about an IO Corps or a CinC IO/Standing JTF?	Effects based operations (EBO)			Key US values - freedom, DoI, a land of immigrants Constitution
	Media/Hollywood reservists or liaison personnel needed?	IORM - major recommendations for training			IW - Psyop not good terms for interagency, IO/SC and EBO - better?
	TRG and consultants - volunteers aka like civil defense?	Innovation occurs at the margins			DOS IIP no voice for PD - spread PD officers out?
	Clearances and language skills are essential	Hiring practices for military civilians dated - industrial era			Time is crucial, computers have increased change
	Do we need a surge capability?				Eat your own dog food (US)
	4th POC - too tactical - to live on DoD?				24/7 capability? Model campaign headquarters? Around the world
					Truth is essential but being first is better

Table 7.2 – Aggregated Answers with Collated Information

From this phase, the actual answers to these elements were then inserted in the figure above (Table 7.2). This was a straight-forward methodology, with each cell in Table 7.2 corresponding to the same cell in Table 7.1. For example, the first column equates to the Clients, and so forth from left to right until the last column equals the Environmental data, so in Table 7.2, the answers are colour-coded. In addition as shown in Table 7.3, the reduction of these 63 CATWOE elements was conducted to narrow the data to accurately reflect all weltanschauungs of the participants, so as part of this additional analysis, 12 broader thematic ideas of IO were utilised as shown below to ensure all interviewees information was accurately reflected in this thesis.

Personnel	Integration	Policy	Themes	Decision Making	Tactical vs Strategic
IO is not New	Overall Goals	Structure	Training	All Others	US Government

Table 7.3 – Colour Coded Themes for CATWOE Elements

To do that, the research and data has been tailored from the original 63 CATWOE elements into 12 broader categories as shown above in Table 7.3, which reflect the overall intent and direction of the participants. This narrowing of the participant data was conducted by evaluating the actual information provided by the interviewees and then comparing as well as contrasting these specific CATWOE elements to look for similarities that could be grouped together. The goal of this tailoring of the data to broader thematic ideas was conducted to not only allow the research to move forward in a methodical manner but also with regard to SSM, to retain and bring forth the actual meaning that the participants imparted to the data. Colour codes will thus used throughout this chapter to show these new groupings, as this analysis moves toward developing a set of Root Definitions. For example all CATWOE elements that referenced IO personnel were coloured "dark purple", IO integration "light blue", IO policy "gray", broad IO themes as "dark orange", IO decision making processes as "medium blue", and the tactical versus strategic issues as "dark blue." Similarly, the fact that IO is not a new warfare area was colour coded "light green", the need for overall IO goals "light orange", IO organizational structure, and IO training (or the lack thereof) were coloured "yellow". A good example of this is shown in the fact that the clients were divided into two broad categories that included the US government personnel "purple" and All Others as "green." These 12 different thematic areas are then represented in each of the six CATWOE elements of Clients, Actors,

Transformation, Worldview, Owners and Environment, as shown in Table 7.3, and ultimately it will be these colour coded blocks that will be utilised for the development of the Root Definitions throughout this chapter, as the data is analysed to draw out the key information from the participants.

7.2.1   Clients

These steps to colour code each respective CATWOE element will be repeated, so that all viewpoints of the data will be the same for each of the six different areas. For example, with regard to the Clients CATWOE elements, table 7.4 is a combination of Tables 6.3 and 6.4 from the last chapter, which show a large dichotomy in the data mentioned by the participants, with most of interviewees citing US Government personnel as the key clients, with a large spread of data to the lowest cited element of the media. So after further analysis and review of the six CATWOE informational cells, the interviewee's concepts can be reduced down to two broad themes – namely "US Government" and "All Others". Colour-coded light purple and brown as shown in Table 7.1 - 7.3, these two categories effectively cover all of the participants that participate in the conduct of Information Operations in the United States government, as noted in Table 7.4 below

One of the goals of the SSM process is to be able to trace the data from the original interview, though the CATWOE methodology and then to the final Root Definitions. This has been done systematically through the development of the raw data in Chapters Six, and the Root Definitions in Chapter Seven. In each case, the data can be traced through each thematic CATWOE element from the original ordering of Table 7.1, to the colour coded version of Table 7.2, and ultimately to the final two Thematic ideas for the Root Definitions as shown in Table 7.4 below. Tracing this data from the original participant interview information, can be achieved by starting in the top left corner with the two themes that fit the Clients CATWOE elements are "US Government" in light purple and "All Others". Data can then be traced to the copy of Table 7.2 in the top right category, and while the US Government theme was most often cited. Likewise, it can be noticed that the other CATWOE elements are also well represented as shown in the bottom left corner of Table 7.4, from the interviewee's responses. Finally the two final key inputs are represented in the oval (s) at the bottom of the chart as shown below, which will eventually be utilised, later in this chapter to develop the final Root Definitions. This

methodology will be followed for the other five CATWOE elements to ensure that all data is tracked accordingly.

	Clients
C1	Foreign Audiences
C2	Key decision makers (foreign and domestic)
C3	US Citizens (general public)
C4	US Government including military
C5	Academia (foreign and domestic)
C6	Media including Hollywood

	C	A	T	W	O	E
1	C3	A2	T6	W2	O9	E8
2	C2	A4	T1	W5	O1	E6
3	C1	A14	T11	W1	O5	E10
4	C5	A6	T12	W4	O3	E3
5	C3	A7	T4	W3	O7	E13
6	C6	A5	T10	W6	O8	E14
7		A9	T3		O2	E15
8		A11	T13		O6	E4
9		A15	T8		O4	E16
10		A12	T7			E2
11		A1	T9			E11
12		A3	T2			E5
13		A10	T5			E1
14		A13				E12
15		A8				E7
16						E9

Personnel
Integration
Training
Policy
Themes
Structure
IO is not New
Overall Goals
Decision Making
Tactical vs Strategic
US Government
All Others

Table 7.4 – Tracing of Client CATWOE Data from Interviews to Root Definitions

7.2.2   Actors

As mentioned previously, the process of parsing the data and then tracing the elements was continued for all five remaining CATWOE elements, with analysis on the Actors data conducted next. As shown in Tables 6.6 and 6.7 in Chapter Six, the data for each of the 15 categories are shown below in Table 7.5. These 15 responses match to six different themes of IO Personnel (Purple), Integration of IO Organizations (Light Blue), IO Training (Yellow) or the lack thereof, Tactical IO vs. Strategic IO (Dark Blue), IO Decision Making (Medium Blue) and the Structure of IO (Dark Green). A key idea that emerged for the Actor CATWOE element included the need for better integration across the interagency spectrum. This concept shows up in numerous locations and discussions with the participants, and was cited throughout the interviews as shown in Table 7.2. Training or the lack thereof was also crucial and will be cited

over and over throughout the analysis of the data, with virtually all of the thesis respondents in one form or the other, mentioning the need for more training and education in the IO realm.

	Actors
A1	Media/Hollywood - reservists or liasion personnel needed?
A2	Planners and operators need to work together
A3	TRG and consultants - volunteers aka like civil defense?
A4	How many actors have been trained in IO?
A5	Standalone IO cells - worked well?
A6	Old USIA types/ State Department, are they integrated?
A7	DoS PCC and NSC PCC - no decision making authority
A8	4th POG - too tactical , to low on CoC
A9	International IO Operators - corporate IO
A10	Clearances and language skills are essential
A11	NSC OGC and WH/DoD - relate to a National Information Council?
A12	Information Czar? What about an IO Corps or a CinC IO/Standing JHQ?
A13	Do we need a surge capability?
A14	Senior level USG training & awareness is needed
A15	Alistair Campbell or Karen Huges type of influence is desired

	C	A	T	W	O	E
1	C4	A2	T6	W2	O9	E8
2	C2	A4	T1	W5	O1	E6
3	C1	A14	T11	W1	O5	E10
4	C5	A6	T12	W4	O3	E3
5	C3	A7	T4	W3	O7	E13
6	C6	A5	T10	W6	O8	E14
7		A9	T3		O2	E15
8		A11	T13		O6	E4
9		A15	T8		O4	E16
10		A12	T7			E2
11		A1	T9			E11
12		A3	T2			E5
13		A10	T5			E1
14		A13				E12
15		A8				E7
16						E9

Personnel
Integration
Training
Policy
Themes
Structure
IO is not New
Overall Goals
Decision Making
Tactical vs Strategic
US Government
All Others

Table 7.5 – Tracing of Actor CATWOE Data from Interviews to Root Definitions

What is interesting from the analysis of these 15 CATWOE elements is the diverse spread of data and themes, with six different thematic ideas noted. In tracing the data from the participants as shown below in Table 7.5, once the results were reordered as in Table 7.1 in the top right corner of the diagram, it would appear that the need for better integration and IO

training were the most important aspects to apply to the Actor elements. However, when on further examination of the participant data, the differences between Tactical versus Strategic IO and IO Personnel issues, also rose in prominence, as shown in the ovals in the left lower corner of Table 7.5. Thus, based on the tracing of the data from the original participants, tailoring it and then analysing the information, it became clear that the two aforementioned categories of IO Personnel as well as Tactical versus Strategic were better suited to be used to develop "Actor" portion of the draft Root Definitions. However that being stated, the other four themes were noted as well, and were all eventually utilised as part of the development of Root Definitions for other CATWOE categories.

7.2.3 Transformation

Likewise for the Transformation CATWOE elements, the same methodology from Tables 6.9 and 6.10 from Chapter Six were used, which shows that the need for overall goals and more training are the two key areas that can do the most to change the way in which Information Operations is conducted across the United States government. The analysis of the Transformation category was an interesting portion of the CATWOE elements, because the fact that three areas, namely the "Need for overall goals" or top-down guidance, "IO Integration" and the fact that "IO is not a New" were cited frequently as shown in Table 7.6, but they were not the CATWOE element that received the most citations.

The diversity of the 13 different Transformation data points was also very interesting. Six different CATWOE elements were noted to include IO Integration (Light Blue), IO is not New (Light Green), IO Personnel (Purple), IO Training (Yellow), IO Goals (Gold) and IO Policy (Gray). Similar themes were echoed in all of these interviewee comments with the training and integration of IO personnel with top-down goals in coherent organizational structures as clear desires for many thesis participants. Half of the six responses alluded to this theme, with some form of citation alluding to the need for greater training of the Information Operations personnel. Over and over again, examples were given by the research participants of untrained staff conducting operations and missions without truly understanding what they were supposed to be doing. However, on further analysis it was not only training that was needed as the most important Transformational element but a combination of integration and overall goals that arose from the tracing of the data as shown in Table 7.6 below. Consistently in the top right hand

corner of this diagram, the Light Blue (Integration) and Gold (Overall goals) colours were noted over and over in the CATWOE category. Therefore for the development of the draft Root Definition for Transformation, the two themes that will be utilised include "Overall Goals" and "IO Integration", while the other four noted will be used elsewhere in the CATWOE analysis.

	Transformation
T1	Strategic Information Campaign, ie strategic PSYOP, integrating strategy which is coherent is very important
T2	Innovation occurs at the margins
T3	Flatten the process - integrate - dynamic
T4	Structure is bad - disorganized
T5	Hiring practives for military civilians dates from industrial era
T6	We need continuous training and education
T7	Effects based operations (EBO)
T8	Target analysis
T9	IORM - major recommendations for training
T10	Acccess to top leadership - overall guidance
T11	What are the overall goals?
T12	Set out top-level nodes and missions - goals and objectives
T13	Cyber Security and PD related?

	C	A	T	W	O	E
1	C4	A2	T6	W2	O9	E8
2	C2	A4	T1	W5	O1	E6
3	C1	A14	T11	W1	O5	E10
4	C5	A6	T12	W4	O3	E3
5	C3	A7	T4	W3	O7	E13
6	C6	A5	T10	W6	O8	E14
7		A9	T3		O2	E15
8		A11	T13		O6	E4
9		A15	T8		O4	E16
10		A12	T7			E2
11		A1	T9			E11
12		A3	T2			E5
13		A10	T5			E1
14		A13				E12
15		A8				E7
16						E9

Personnel
Integration
Training
Policy
Themes
Structure
IO is not New
Overall Goals
Decision Making
Tactical vs Strategic
US Government
All Others

Table 7.6 – Tracing of Transformation CATWOE Data from Interviews to Root Definitions

7.2.4   Weltanschauung

As noted in Chapter Six, the weltanschauung among the interviewees was nearly universal in their need for a greater understanding of IO policy and the broader themes inherent in this area. This focus was brought out in the data from Tables 6.12 and 6.13 from Chapter Six, which drove the analysis to broader issues of the understanding of these Information Operations policy and themes as final Root Definition concepts. This emphasis can be seen in the statistics in Table 7.7, where the most often cited view is that IO is not understood by most practitioners who are often equated to a training issue. A significant gap exists between this issue and the second rated citation (IO Policy) of the CATWOE elements which only received a third or less input from the participants. This disparate weltanshauung is also reflected in the four different thematic areas – IO Integration, IO Training, IO Policy and Overall Goals that were all cited by the participants.

From this analysis, it would appear that the need for greater IO training (yellow) is the highest need, with a coherent national policy on Information Operations (gray) as another clear answer from the participants. In particular, these two issues were emphasised over and over in the interviews as an item that needed to be applied across the interagency spectrum. Likewise the need for coherent and consistent IO themes (gold) that are developed and coordinated at the interagency level were cited as well with the need for greater integration as well (light blue). However when the final tracing of the data in Table 7.7, it becomes apparent that IO policy and IO training were the key world view elements of importance to the participants of this study, as shown below.

	World View
W1	Political, military, USG, engineers, IR professors
W2	Many practioniers do not understand IO
W3	IORM almost reverting back to C2W - why?
W4	Is their difference between IO and PD lane?
W5	Do we need a National Information Policy?
W6	Or should we just update the NSS?

	C	A	T	W	O	E
1	C4	A2	T6	W2	O9	E8
2	C2	A4	T1	W5	O1	E6
3	C1	A14	T11	W1	O5	E10
4	C5	A6	T12	W4	O3	E3
5	C3	A7	T4	W3	O7	E13
6	C6	A5	T10	W6	O8	E14
7		A9	T3		O2	E15
8		A11	T13		O6	E4
9		A15	T8		O4	E16
10		A12	T7			E2
11		A1	T9			E11
12		A3	T2			E5
13		A10	T5			E1
14		A13				E12
15		A8				E7
16						E9

Personnel
Integration
Training
Policy
Themes
Structure
IO is not New
Overall Goals
Decision Making
Tactical vs Strategic
US Government
All Others

Table 7.7 – Tracing of Weltanschauung CATWOE Data from Interviews to Root Definitions

7.2.5 Owners

The data for the owners as shown in Tables 6.15 and 6.16 are very different than the other CATWOE elements as it showed a very tight spectrum (except for one outlier) of the number of citations by the participants. In this category, five discreet themes emerged including IO Structure (dark green), Integration (light blue), and the differences between Tactical versus Strategic (dark blue), IO Training (yellow) and IO Decision Making (medium blue). While the

individual information is discreet, when analysed at a higher level, the overall themes can be reduced to broader concepts of ensuring that the proper decision –making authority is available within the correct organizational structure.

	Owners
O1	Interagency to include the Dos, DoD, NSC and WH - need more coord?
O2	Two PCCs are redundant
O3	Is their trust in the PM efforts of these organizations? USIA?
O4	In the OSD, oversight of IO is everywhere
O5	How many of the above have been trained in IO?
O6	DoD is building PD capability because it believes State is not doing enough
O7	WH is good at political domestic message and spin but often reacts to foreign events
O8	Need to quickly get decisions on PD from on high
O9	State needs a bigger role - bring back

	C	A	T	W	O	E
1	C4	A2	T6	W2	O9	E8
2	C2	A4	T1	W5	O1	E6
3	C1	A14	T11	W1	O5	E10
4	C5	A6	T12	W4	O3	E3
5	C3	A7	T4	W3	O7	E13
6	C6	A5	T10	W6	O8	E14
7		A9	T3		O2	E15
8		A11	T13		O6	E4
9		A15	T8		O4	E16
10		A12	T7			E2
11		A1	T9			E11
12		A3	T2			E5
13		A10	T5			E1
14		A13				E12
15		A8				E7
16						E9

Personnel
Integration
Training
Policy
Themes
Structure
IO is not New
Overall Goals
Decision Making
Technical Products
US Government
All Others

Table 7.8 – Tracing of Owners CATWOE Data from Interviews to Root Definitions

These key themes are reflected above in Diagram 7.8, and as the final versions of the Owners CATWOE elements. In addition, as noted earlier, one of the key ideas to emerge from the analysis of the Owners CATWOE elements was a consensus among the thesis participants that

Decision Making was a key capability for the Owners. The need for more and better organized structure to conduct Information Operations was also readily apparent to these participants. Cited in five CATWOE element areas and across four of the six categories, this lack of coordinated structure was very apparent to the interviewees. This analysis can be traced in Table 7.8 below, where these two issues are noted in each of the upper two boxes and then in the bottom left diagram.

7.2.6 Environment

The sixth area for CATWOE analysis was the environment. As shown in both Tables 6.18 and 6.19 there was a real dichotomy among the data points. Previous categories such as decision making (medium blue), organizational structure (dark green) were mentioned as well as training (yellow), with seven different thematic elements cited overall as part of this research. Thus from further analysis, the overarching areas of tying together IO themes at the interagency level to be more reactive, in an environment that is not new, were developed from the data received from the thesis participants. These were the two key areas or issues that encompassed the majority of the participants input toward the overall environment of how IO is conducted by the United States government. The need for coherent Information Operations themes is also readily apparent, with multiple citations across the CATWOE categories. Likewise the fact that IO is not a new phenomenon was also a key thematic issue. Both of these ideas can be traced as part of the participant data in Table 7.9 below, overall analysis shows that the interviewees were consistent in how many different ways or methods that they discussed these two key issues. For example the need for IO Themes alluded to five different times in CATWOE elements E2, E3, E9, E12 and E14. Likewise as mentioned earlier in Chapter One, a number of thesis participants also reiterated that Information Operations was not a new concept, but instead one that was finally being recognised through the improvement in technology to be able to reach its true potential, and this theme was noted three times as well in E1, E4 and E10.

	Environment
E1	Time is crucial, computers have increased change but products should be checked
E2	Key US values - freedom, DoI, Constitution, a nation of immigrants
E3	Information is like terrain, cannot leave unoccupied
E4	Money and resources drive capabilities
E5	US DOS IIP has no directive voice for PD - spread PD officers everywhere?
E6	Interagency bureaucracies - will org change work?
E7	Need a 24/7 capability? Modeled on a campaign headquarters? Around the world (US/UK/AU) ie follow the sun
E8	US PD must be faster, more reactive
E9	Truth is essential but being first is better
E10	IO is not new
E11	IW and Psyop are not good terms for interagency, IO and SC are much better but EBO may be the best?
E12	Eat your own dog food (US)
E13	Training or lack of is badly needed for PD
E14	Themes need to be tied together
E15	Top to bottom or bottom to top?
E16	What are we trying to protect?

	C	A	T	W	O	E
1	C4	A2	T6	W2	O9	E8
2	C2	A4	T1	W5	O1	E6
3	C1	A14	T11	W1	O5	E10
4	C5	A6	T12	W4	O3	E3
5	C3	A7	T4	W3	O7	E13
6	C6	A5	T10	W6	O8	E14
7		A9	T3		O2	E15
8		A11	T13		O6	E4
9		A15	T8		O4	E16
10		A12	T7			E2
11		A1	T9			E11
12		A3	T2			E5
13		A10	T5			E1
14		A13				E12
15		A8				E7
16						E9

Legend
Personnel
Integration
Training
Policy
Themes
Structure
IO is not New
Overall Goals
Decision Making
Tactical vs Strategic
US Government
All Others

Table 7.9 – Tracing of Environment CATWOE Data from Interviews to Root Definitions

In summary, all of the 63 CATWOE elements were eventually utilised in the Root Definitions, as part of the tailored 12 thematic issues described above. This is because the information data was parsed and mapped together in one chart that lays out the selected final versions of the CATWOE elements as shown in Diagram 7.3. Also as was noted earlier, there are overlaps and redundancy in certain areas such as the lack of training and the need to coordinate themes were cited multiple times, in multiple categories, by a large number of interviewees. But overall, the research indicated a relative large scale of coherence to the data obtained from the thesis participants. Therefore in this next section, the final two Root Definitions will be developed, with detailed explanations. This is done using all 63 CATWOE elements, reduced to 12 thematic ideas, whose goal is to build the Root Definitions and then the Conceptual Models in Chapter Eight.

7.3 Final Root Definitions

Much of the SSM literature and research indicates that there is a practicality to the realistic number of Root Definitions that can or should be utilised in any particular academic effort. In most cases, 2-3 is the recommended limit to adequately model the alternatives to the appropriate decision-maker. Thus to reduce the 63 CATWOE elements into the 12 aforementioned themes, the participant data was analysed in detail and aggregated into broader categories, from which ultimately two distinct and different final Root Definitions emerged at the end of this chapter. When these 12 thematic ideas are rearranged per their respective CATWOE elements, a new diagram is produced as shown in Table 7.10 below. It is from this chart, that the draft Root definitions were developed as part of an initial cut of the top six CATWOE elements, from which a series of coherent final Root Definitions are drafted as shown below.

Clients	Actors	Transformation	Worldview	Owners	Environment
All Others	Personnel	Overall Goals	Policy	Structure	Themes
US Government	Tactical vs Strategic	Integration	Training	Decision Making	IO is not New

Table 7.10 – Thematic Ideas arranged per CATWOE Elements

The same format will be followed for each of the draft Root definitions, with each of the CATWOE elements utilized as part of an attempt to develop a coherent statement of the data derived from the interviewees.

The first final Root Definition is shown below:

Information Operations in the United States government needs to be differentiated between the tactical and strategic operations by key decision makers of the United States government for better integration and more IO training across the interagency spectrum, in an understanding that IO is not a new phenomenon.

System	Information Operations in the United States government
Client	United States government
Actors	Tactical versus Strategic
Transformation	Better Integration
Worldview	More IO Training
Owners	Key decision makers
Environment	IO is not new

The second final Root Definition is shown below:

Information Operations in the United States government needs personnel and a better organizational infrastructure, to reach overall IO goals, focused at coordinated themes towards its targeted audience with coherent IO policy.

System	Information Operations in the United States government
Client	All Others
Actors	Personnel
Transformation	Overall Goals
Worldview	IO Policy
Owners	Better IO structure needed
Environment	IO Themes

7.4   Summary

In this chapter, the raw data from the CATWOE elements were reduced to key thematic issues which were used to develop a set of Root Definitions. As was demonstrated in this section, the evolution of these two final Root Definitions, can be traced directly back to the raw

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data from the participant's interviews. This information was collated and tabulated, and then based on the interviewees' responses, the 63 CATWOE elements were tailored to a number (12) of thematic issues that were cited by the interviewees themselves. All data points were included in these thematic issues that were chosen by the participants, so in essence all participants' weltanschauung were included to ensure completeness with regard to the operation of IO within the United States government. Once these results were analysed and duplicates eliminated, further aggregation and collation resulted in the formation of two distinct and different Root Definitions as shown above. It will be these established parameters that will then be used in Chapter Eight to articulate a set Conceptual Models for this issue area.

Chapter 8 – Conceptual Models

In Chapter Five under Research Methods, the preferred methodology of Soft Systems was outlined for the reader see Figure 5.1, which brought together the combination of Root Definitions and Conceptual Models that were considered the key to this process. "The Root Definition defines what the system is and the Conceptual Model describes what the system must do" (Wilson, 2001, p. xv). This is because, it is in these two steps of SSM, where the thesis participants are able to debate the given situation, in this case the status of IO in the United States government, with the vital exchanges occurring through the use of these Conceptual Models. For example, Checkland cited these models as "intellectual devices", whose role is to help structure an exploration of the problem situation being addressed (Checkland and Scholes, 1999, p. A21). These academics do this in order to seek changes which would improve the situation by moving from the systems thinking view of Conceptual Models to the real-world, where comparisons can be made. Likewise Jackson states that the use of SSM will lead to the construction of a number of models to be compared with the real world, as opposed to one that would result from the use of a hard methodology (Jackson, 2000, p.247). It is these changes to the models which are typically regarded as both desirable and culturally feasible, with accommodations made between conflicting interests, which makes the SSM process so useful in the final actions to improve the problem situation, with a positive effect as shown in Figure 8.1 below.

8.1 The SSM Process in Use

The initial theoretical frameworks that are used at the beginning of this process are defined as high-level task models and are derived solely from the ideal Root Definitions. Normally developed from the interview process, these Conceptual Models represent processes or methods of achieving a goal as defined in Chapter Five (Appendix E). To show the conceptualisation of this methodology, in Chapter Seven, two Root Definitions were developed from the interview data using the CATWOE elements and thematic areas. In this Chapter, two primary Conceptual Models and 12 sub Conceptual Models (for a total of 14 in all), were developed from the data gathered in the initial set of interviews. As noted earlier, Conceptual Models are not describing reality, but instead, they should describe what the system 'does'. This

is seen in the use of main models and subsidiary figures to 'broaden' the data, which in essence 'fleshed' out the ideas from the interviewees with six subsets for each Conceptual Model, all of which was original information in the CATWOE elements. The goal of each model was therefore to trace the 'ideas' and 'concepts' of the thesis participants from the Rich Pictures and Root Definitions of SSM, to ultimately develop figures or diagrams that would help to build examples or prototypes to in theory, answer the original research questions.
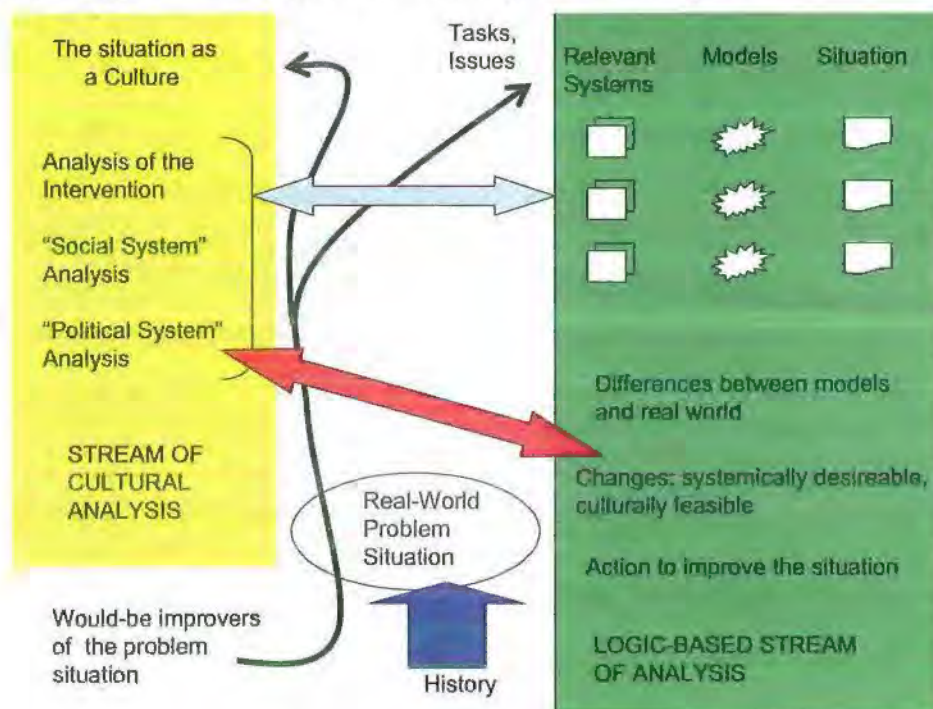
Figure 8.1 – The Process of SSM (Checkland and Scholes, 1990)

8.2 The Development of Conceptual Models

In the next two sections, a total of two major and 12 minor Conceptual Models were developed from the Root Definitions and the data gathered in the initial set of interviews. A process to show how these models were developed in shown in Figure 8.2, and this methodology was carried throughout this Chapter for all 14 models. From a macro level view, these Conceptual Models are generally divided into two broad categories – the first seven are more of a top down, centralised process, while the second seven are more of a bottom up, or decentralised version of the actions required to conduct IO across the United States government. The input for these models came from the thesis interviews, as they described processes and methodologies desired to better accomplish this mission within the federal bureaucracy. In each

instance, a master model was developed – for example Conceptual Mode (CM) 1.0 (Table 8.3) and CM 2.0 in Table 8.11. From these overarching themes, sub-models were constructed for each of the six individual tasks, which matched to the respective CATWOE Elements via the Root Definitions, as shown for the first model in Tables 8.4 through 8.10, and the second model in Tables 8.12 through 8.18. The colour coded scheme developed in Chapters Six and Seven is also carried throughout this section as well to denote the respective CATWOE Categories and main areas of focus.

Given: A Definition of T, multiple "E's", CATWOE and Root Definition

(1) Using verbs in the imperative, write down activities necessary to carry out T

(2) Select activities which could be done at once (ie not dependent on others)

(3) Write these out on a line, then those dependents on these first activities on a line below, until all activities are accounted for
– indicate the dependencies

(4) Redraw to avoid overlapping arrows where possible and add monitoring / control
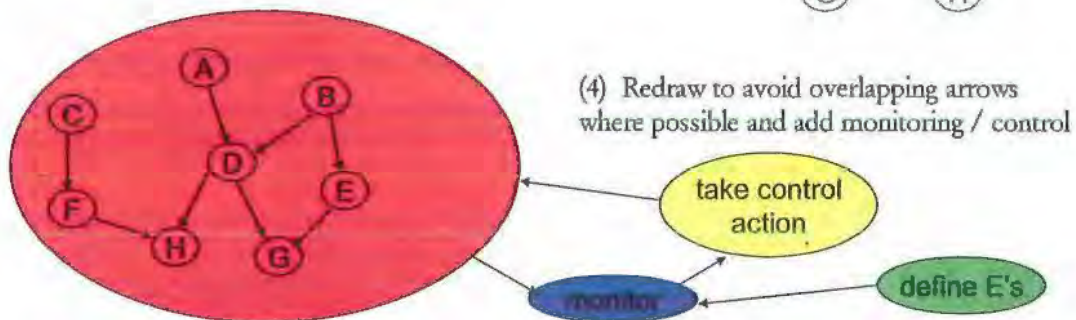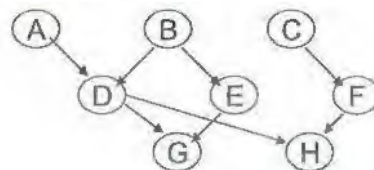
Figure 8.2 - A Logical Process for Building CM's (Checkland and Scholes, 1999)

8.2.1   Conceptual Model 1.0

The relationship of the Conceptual Models to the Root Definitions will also be described in this chapter. In essence, the two main Conceptual Models mirror their respective Root Definitions and are diametrically opposite of each other. In this first master model, Conceptual Model 1.0, IO in the United States government – A Top Down (Centralised) View as shown in Figure 8.3, is derived from the first Root Definition and interview data, where an enterprise wide

construct emerged with centralised authority to coordinate and conduct IO campaigns utilising a number of federal agencies and capabilities in a timed and orchestrated manner. It is symbolised by the use of strategic goals, coordinating systems, that determine requirements early in the process, and then measure the effects afterwards are symptomatic of an overarching program. Many participants advocated a single interagency organisation with the authority and financial backing to execute these actions for the United States government. These interviewees believed that in order to get the best effect from IO, these disparate actions needed to be centrally managed and coordinated across functional agencies, to give a single coherent message to the world.

Information Operations in the United States government is derived from the perspective of the overall IO themes to produce better integration implemented and run by tactical versus strategic IO personnel for the benefit of the USG and under the control of key decision makers within the constraints of the fact that IO is not a new warfare area.

Clients	United States Government
Actors	Tactical vs Strategic
Transformation	IO Integration

Weltanschauung	IO Themes
Owners	Decision Makers
Environment	IO is not New

Table 8.1 - Conceptual Model 1.0 IO in the United States government: A Top Down (Centralised) View

The key to understanding this first master Conceptual Model is to view the expressed opinion of the interviewees for a centralised, controlled and coordinated system. These

participants modelled a desire where key decision makers in the United States government were able through increased integration to execute IO campaigns on a systemic and sustainable basis. They believed that if the correct governing structures were put into place that success could be achieved in the operation of IO across the interagency structure. This can be seen in the actual CATWOE elements and categories that are matched up to the original data cells to develop specific Conceptual Models in which all information from the research participants is coded to not only the final models but also the earlier Root Definitions. In this way, the data can be traced directly from a specific interviewee to a final Conceptual Model. An example for Conceptual Model 1.0 is shown below:

Category	Element	Data Cells	CM
Clients	United States Government	C4	1.4
Actors	Tactical vs Strategic actions	A5, A8, A12	1.1
Transformation	Better Integration of IO actions	T1, T3	1.2
Worldview	IO Themes	W3, W4	1.5
Owners	Key Decision Makers	O1, O2, O6, O9	1.3
Environment	IO is not New	E1, E4, E10	1.6

Table 8.2 – The Relationship of Root Definition 1.0 to Conceptual Model 1.0

Overall strategic goals, using integrated policies, training and coordinated systems was also considered key to this approach. This hierarchical view is seen in the next six tables, where Conceptual Models 1.1-1.6 are examined, with further details provided about how these tactical actions could be undertaken in a centralised fashion, as shown where the following concepts were key:

- CM 1.1   Tactical versus Strategic
- CM 1.2   Coordinating systems between WH, DoS and DoD
- CM 1.3   Investigate needs of stakeholders
- CM 1.4   Set up an Interagency IO campaign bureaucracy
- CM 1.5   Execute IO Campaigns
- CM 1.6   Measure IO Campaign's success

Moving on to Conceptual Model 1.1 (Figure 8.3), the focus is on the development of a series of strategic vice tactical goals for an enterprise-wide system for the conduct of IO in the United States government. From a top-down view of the participants, the formulation of a set of overarching themes or issues was often considered the most crucial step in this project, and this

attitude is reflected in the development of this conceptual model. Reviewing the interviewee data, a number of discrete tasks were listed below, that even further emphasise the need to focus on the strategic vice tactical element of implementing IO. These include:

- Analyse government agencies plans with respect to IO
- Develop similar type of IO plans and goals in each United States government agency
- Develop a centralised series of committees and groups to monitor and adjust plans as needed
- Ensure strategic goals match interagency IO plans
- Ensure that these IO plans are synchronised across the organizations
- Match agency plans to strategic IO goals for United States government
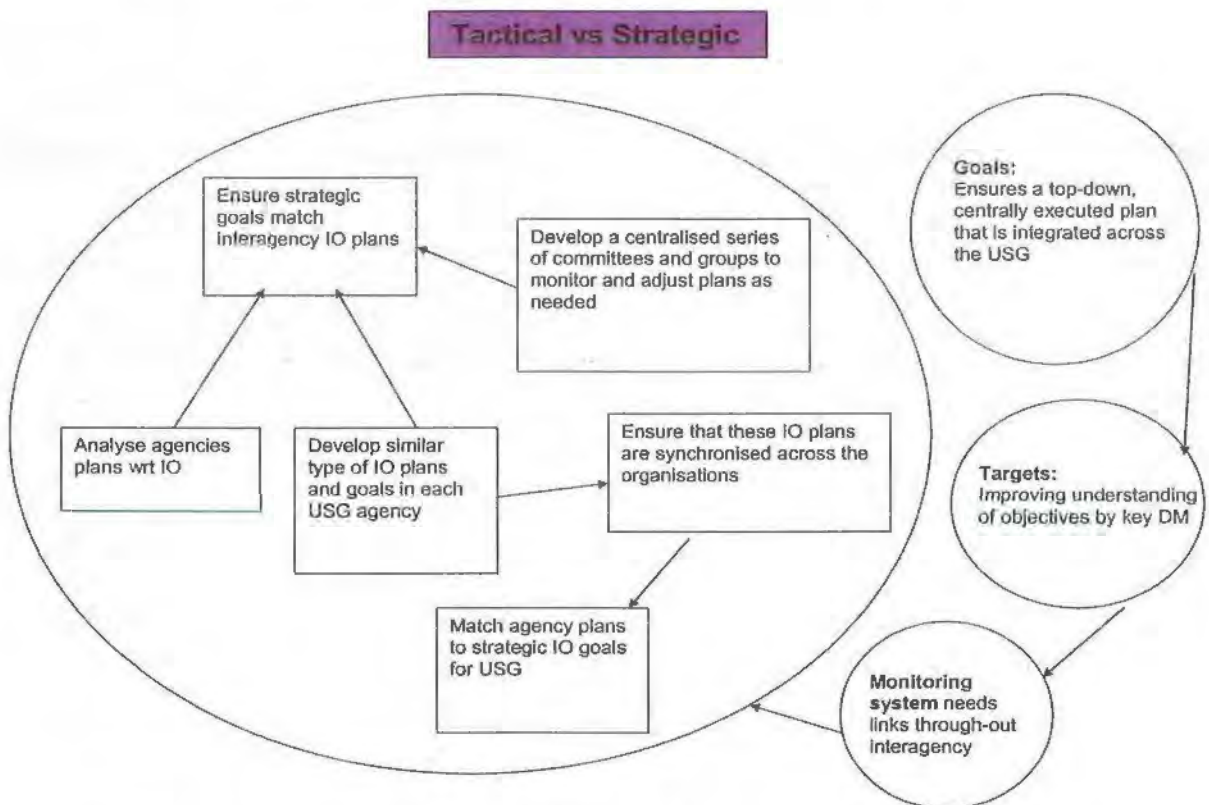
Figure 8.3 – Conceptual Model 1.1: Tactical vs. Strategic Goals for United States government IO Systems

By doing this, the ability to meet the primary goal of ensuring a top-down, centrally executed plan that is integrated across the United States government that targets an improved understanding of objectives by the key decision-makers. It was emphasised by the participants that a monitoring system was needed who contained links through-out the interagency system in

order to ensure the enterprise wide view of these goals. This is seen primarily in the major

CATWOE elements that were emphasised in this sub-model of Tactical versus Strategic, as part

of the Actor CATWOE Category:

- A5   Standalone IO cells - worked well?
- A8   4th POG - too tactical , to low on Chain of Command
- A12   Information Czar? What about an IO Corps or a Commander in Chief
        IO/Standing Joint Force Headquarters

In addition, there were other CATWOE Elements in this category that were scattered throughout

the data, that also alluded to the need to understand whether the system was tactically or

strategically oriented.

- O4   In the Office of Secretary of Defense, oversight of IO is everywhere
- E15   Top to bottom or bottom to top?
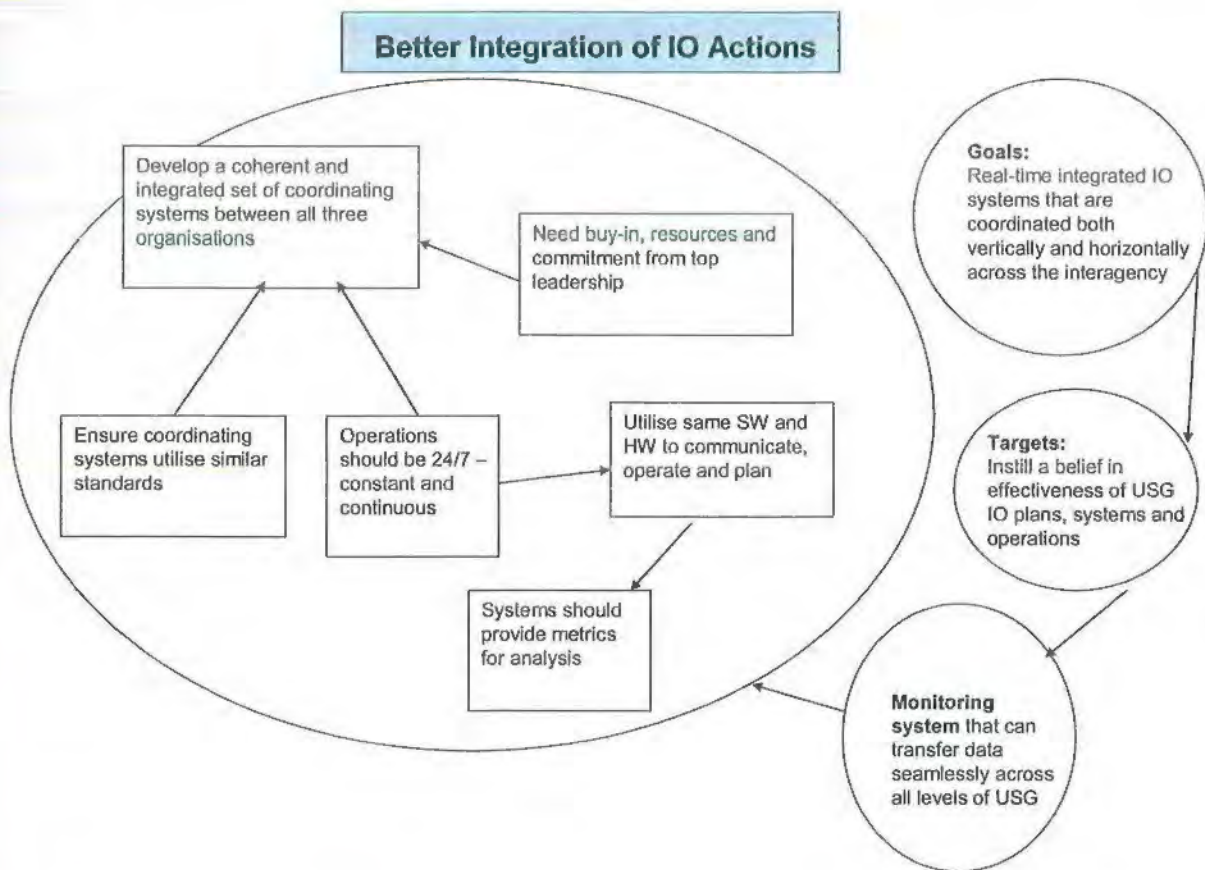
Figure 8.4 – Conceptual Model 1.2: Coordinating systems between White House,

Department of State and Department of Defense

In the next sub-model, a centralised coordinating system was deemed necessary as the second component of a top-down model. This interlacing of the three key Information Operations components – namely the White House, the State Department and the Department of Defense was seen as crucial by the participants of this thesis. They believed and stated on numerous occasions that in order to effectively conduct an IO campaign, that the integration of these three agencies, using similar themes, ideas, methods, etc, were all crucial to the overall success. This need to develop this centralised coordinating system was a key issue for many interviewees, as shown in the sub-model tasks, as shown below:

- Ensure coordinating systems utilise similar standards
- Operations should be 24/7 – constant and continuous
- Need buy-in, resources and commitment from top leadership
- Develop a coherent and integrated set of coordinating systems between all three organisations
- Utilise same software and hardware to communicate, operate and plan
- Systems should provide metrics for analysis

These tasks equate quite well to the overall goal of a standardised and real-time integrated IO systems that are coordinated both vertically and horizontally across the interagency agencies. This theme was stated a number of times in the interviews, as they targeted the need to instil a belief in effectiveness of United States government IO plans, systems and operations. This desire for an overarching system was also expressed in the need for a monitoring system that can transfer data seamlessly across all levels of the federal agencies. This is seen primarily in the major CATWOE elements that were emphasised in this sub-model of Better Integration of IO Actions as part of the Transformation CATWOE Category:

- T1   Strategic Campaign, that is, strategic psychological operations / IO, integrating coherent strategy - important
- T3   Flatten the process - integrate - dynamic
- T4   Integrate top-level nodes and missions - goals and objectives

In addition, there were other CATWOE Elements in this category that were scattered throughout the data, which also alluded to the need to understand whether the system was oriented toward the integration of IO activities:

- A2   Planners and operators need to work together
- A6   Old United States Information Agency types/ State Department, are they integrated?

- A11   National Security Council Office Global Communications and White House / Department of Defense - relate to a National Intelligence Council?
- W1   Political, military, United States governments, engineers, international relations professors
- O3   Is their trust in the perception management efforts of these organizations? United States Information Agency?

Key Decision Makers

Ensure that key USG agencies understand users needs and desires

Develop overall guidance for key USG organisations

Goals:
Ensure Stakeholders needs are met

Define key decision makers in the USG

Develop system to understand stakeholders needs and desires

Execute system on a consistent and repeatable basis

Targets:
Users defined as USG personnel and key decision makers

Measure the needs of stakeholders

Monitoring system feedback through interagency bureaucracy

Figure 8.5 – Conceptual Model 1.3: Investigate Needs of Stakeholders

As part of the development of a series of goals and overarching systems for the execution of IO within the United States government, there is a need as expressed by the data of this thesis that the needs of the stakeholders must be researched and analysed. This was amplified in the third sub-model as shown above. Key themes that emerge from the information provided in this study include the belief that a deep and thorough understanding of the desires of these key decision-makers will be the fundamental concepts in the proper development of a centralised top-down system, as shown below:

- Define key decision makers in the United States government
- Develop system to understand stakeholders needs and desires

- Develop overall guidance for key United States government organisations
- Ensure that key United States government agencies understand users needs and desires
- Execute system on a consistent and repeatable basis
- Measure the needs of stakeholders

These tasks are desired to ensure that the stakeholders needs are met, which meant for many interviewees that the system users were defined as United States government personnel and key decision makers. A desirable feature of this monitoring of stakeholders was a monitoring system that produced feedback through interagency bureaucracy to ensure that the stakeholder's needs were met. This is seen primarily in the major CATWOE elements that were emphasised in this sub-model of Key Decision Makers from the Owners CATWOE Category:

- O7   White House - good political domestic message and spin -reacts to foreign events
- O8   Need to quickly get decisions on public diplomacy from on high

In addition, there were other CATWOE Elements in this category that were scattered throughout the data, that also alluded to the need to understand whether the system was oriented to understand the importance of key decision makers in this process:

- A7   Department of State Political Coordinating Committee and the National Security Council Political Coordinating Committee - no decision making authority
- A15   Alistair Campbell or Karen Hughes type of influence is desired
- E5   Information Warfare – Psychological Operations not good terms for interagency, IO, Strategic Communications and effects based operations - better?
- E8   United States public diplomacy must be faster, more reactive

United States Government

Ensure that IO architecture is consistent, to execute a top-down system

Ensure adequate training of personnel across USG to man this bureaucracy

Develop consistent IO policy across the USG organisations

Develop IO planning system for all of the USG

Execute strategic IO plans from single system

Use IO standards recognised across USG

Goals:
Ensure all USG personnel are well trained and know the policy and system developed to conduct strategic IO.

Targets:
The staffs of the three key agencies plus other key USG decision makers

Monitoring system uses recognised IO standards and systems

Figure 8.6 – Conceptual Model 1.4: Set up an Interagency IO Campaign Bureaucracy

As part of top-down view of many of the thesis participants, an interagency bureaucracy was desired to organise and execute this enterprise-wide IO campaign. It was the opinion of these interviewees, that only a centrally coordinated office could be effective in conducting these tasks across the disparate federal offices and agencies. These beliefs from the personnel involved in the study led as shown in this fourth sub-model of Conceptual Model #1, was a series of overarching tasks, that all strive to develop coherent and consistent actions by the United States government, with regard to the conduct of IO, as shown below:

- Develop consistent IO policy across the United States government organisations
- Develop IO planning system for all of the United States government
- Ensure adequate training of personnel across United States government to man this bureaucracy
- Ensure that IO architecture is consistent, to execute a top-down system
- Execute strategic IO plans from single system
- Use IO standards recognised across United States government

The obvious overall goal of these efforts was to ensure all United States government personnel involved with the conduct of strategic level IO missions were well trained, knew the current policy as well as system parameters. Central to this centralised execution was coherent support by the staffs of the three key agencies plus other key United States government decision makers, who utilised a monitoring system comprised of recognised IO standards. This is seen primarily in the major CATWOE elements that were emphasised in this sub-model of the United States government personnel as part of the Client CATWOE Category:

- C4   US Government including military

IO Themes

Execute standard IO plans and operations 24/7 across the USG

Ensure USG bureaucracy is capable of executing IO plans and operations

Goals: A well-run and timely series of IO campaigns

Ensure compatibility of interagency IO processes

Incorporate IO into DoD, NSC and DoS's, normal operational capability

Execute IO campaigns 24/7 around the world

Targets: Key decision makers and audiences in USG

Develop feedback mechanisms for IO campaigns

Monitoring system through USG sources

Figure 8.7 – Conceptual Model 1.5: Execute IO Campaigns

From this overarching IO bureaucracy, many interviewees felt that they could execute well-organised and successful Information Operations campaigns, on a world-wide basis. The participants desired to deconflict the missions between federal agencies, in order to bring about to the greatest extent the power of information in this new era, where IO was seen as a new tool for conducting foreign policy. This vision of the power available and the ability to harness, all

depended in these interviewees minds on the coherent and coordinated use of Information Operation campaigns by the United States government as shown below:

- Ensure compatibility of interagency IO processes
- Incorporate IO into Department of Defense, National Security Council and the State Department's normal operational capability
- Ensure United States government bureaucracy is capable of executing IO plans and operations
- Execute standard IO plans and operations 24/7 across the United States government
- Execute IO campaigns 24/7 around the world
- Develop feedback mechanisms for IO campaigns

This ability to conduct well-run and timely series of IO campaigns was of course dependent on key decision makers and audiences in federal bureaucracy agreeing with these concepts and understanding the need for this enterprise-wide system. In order to be successful, this bureaucracy should have tight links into existing organizations, with a monitoring system that utilised normal government metrics and processes. This is seen primarily in the major CATWOE elements that were emphasised in this sub-model of IO Themes as part of the Weltanschauung CATWOE Category:

- W3   IO Road Map almost reverting back to Command and Control Warfare - why?
- W4   Is their difference between IO and public diplomacy lane?

In addition, there were other CATWOE Elements in this category that were scattered throughout the data that also alluded to the need to understand whether the system was oriented to understand IO Themes:

- E9   Eat your own dog food (United States)
- E12   Key United States values - freedom, Declaration of Independence, a land of immigrants Constitution
- E14   Information is like terrain, cannot leave unoccupied
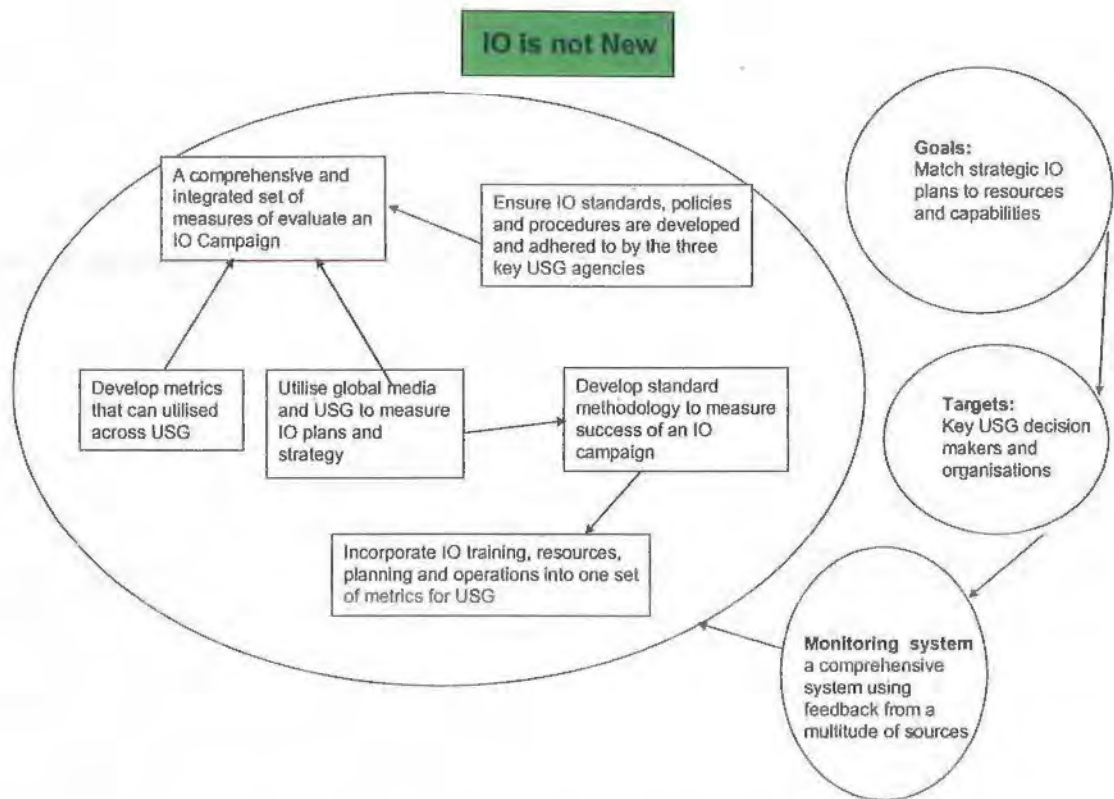
Figure 8.8 – Conceptual Model 1.6: Measure IO Campaign's Success

The ability to measure and validate success is always a crucial metric in the performance of a task, and in this case the conduct of IO campaigns is no different. The participants who advocated this top-down approach also believed in a strong feedback mechanism, one that enabled them to learn lessons from their actions and to apply changes to the system as deemed appropriate. This methodology is shown in the last sub-model of Conceptual Model One, where a standardised process for measuring success is advocated for development as shown here:

- Develop metrics that can be utilised across United States government
- Utilise global media and United States government to measure IO plans and strategy
- Ensure IO standards, policies and procedures are developed and adhered to by the three key United States government agencies
- A comprehensive and integrated set of measures of evaluate an IO Campaign
- Develop standard methodology to measure success of an IO campaign
- Incorporate IO training, resources, planning and operations into one set of metrics for United States government

This need for reliable metrics equates for the need in the minds of the thesis interviewees to match the strategic IO plans to the actual resources and capabilities of the federal government,

based on the desires of the key United States government decision makers and organizations. On multiple occasions, the need for a comprehensive monitoring system using feedback from a multitude of sources was mentioned as a desirable trait for the future developments of IO by the United States. This is seen primarily in the major CATWOE elements which were emphasised in this sub-model of the fact that IO is not a New Warfare Area as part of the Environment CATWOE Category:

- ⊕ E1   Time is crucial, computers have increased change
- ⊕ E4   Money and resources drive capabilities
- ⊕ E10   IO is not new

In addition, there were other CATWOE Elements in this category that were scattered throughout the data, that also alluded to the need to understand whether the system was oriented to the fact that IO is not a New Warfare Area:

- ⊕ T2   Innovation occurs at the margins
- ⊕ T7   Effects based operations
- ⊕ T8   Target analysis

8.2.2   Conceptual Model 2.0

If the first Conceptual Model is more of a top-down or enterprise-wide view of how IO should be conducted in the United States, then the second Conceptual Model was radically different and was developed from comments made by many of participants, who advocated a much more unstructured or bottom-up approach. This attitude advocated a less cumbersome or a more market-based structure, one that was less controlled, but more open to interpretation, to give the system more flexibility in today's globalised world. Consistent in the comments from these interviews, was the belief that all information could not be controlled, and that a flattened set of interrelated groups, processes, policies and standards was a better method of trying to conduct IO in a disorganized environment.

Figure 8.9 – Conceptual Model 2.0: IO in the United States Government, a Bottom up View

It can be noticed in this second Conceptual Model, a more decentralised approach to the coordinating of IO tasks and missions was utilised. Likewise Conceptual Model 2.0 and its subordinates were derived from the second Root Definition and the following CATWOE elements as shown below and in Figure 8.11. Once again, attempts were made to be able to trace the data directly from a specific interviewee to a final Conceptual Model. An example for Conceptual Model 2.0 is shown below:

- CM 2.1   Accept any and all IO goals conducted for the United States government
- CM 2.2   Develop a decentralised communications and networking procedures utilizing IO personnel to execute and facilitate IO activity
- CM 2.3   Utilise a wide variety of IO training courses and instruction
- CM 2.4   Develop an IO policy and strategy broad enough to encompass all key United States values
- CM 2.5   Provide resources and adequate funding by using all other personnel to foster innovation in IO

- CM 2.6   Develop a set of IO standards and structures that can be understood and utilised by all organisations

Category	Element	Data Cells	CM
Clients	All Others	C1, C2, C3, C5, C6	2.5
Actors	IO Personnel	A1, A3, A9, A10	2.6
Transformation	Overall Goals	T10, T11, T12	2.1
Worldview	IO Policy	W5, W6	2.4
Owners	IO Structure	O1, O2, O6, O9	2.2
Environment	IO Training	E2, E3, E13	2.3

Table 8.3 – A Comparison of Conceptual Model 2.0 to Root Definition 2.0

This lack of centralisation or perhaps the input of more realism in the understanding of how the federal bureaucracy actually operates, is also evident in the six sub-models of Conceptual Model 2.0 that follow. Instead of trying to direct or coordinate IO tasks in an overarching or coherent manner, the participants noted in their comments that the United States should simply accept and take in, any IO missions conducted, whether these operations are part of a campaign or not. This is a fairly radical idea and extremely opposite of what was proposed by the advocates of Conceptual Model 1.0, but perhaps it also is more fiscally and politically acceptable. Therefore in the next six tables, this flattened or open view will be examined, with further details provided about how these tactical actions could be undertaken in a decentralised fashion.

IO Goals

Develop strategic goals from the IO actions conducted w/l the United States

Develop a decentralised accounting mechanism such as a portal, where IO activities can be reported

Use opinion polls to determine US strategic goals

Compare IO actions to long-standing cultural values of US

Utilise polls and reports from the media to undestand impact of IO activities

Utilise academics and media to analyse effectiveness of IO campaigns wrt to targets

Goals: Attempts to tie together in a bottom-up fashion the plethora of IO activities conducted by the United States

Targets: A large variety of foreign and domestic populations

Monitoring system is simply done by self reporting and the media

Figure 8.10 – Conceptual Model 2.1: Accept any and all IO actions conducted for the United States government

In this particular figure, the focus is on the use of any and all IO actions to develop a series of goals for a system that simply tries accept the disparate conduct of IO in the United States government. As to be expected, the formulation of a set of themes or issues based on a number of organizations and agencies that are not coordinating will be difficult at best, but in reality, it may offer an alternative view to a way ahead based on all participants' weltanschauung. The particular tasks are laid out in no particular priority by the interviewees:

- Use opinion polls to determine United States strategic goals
- Compare IO actions to long-standing cultural values of United States
- Develop a decentralised accounting mechanism such as a portal, where IO activities can be reported
- Develop strategic goals from the IO actions conducted w/I the United States
- Utilise polls and reports from the media to understand impact of IO activities
- Utilise academics and media to analyse effectiveness of IO campaigns with regard to targets

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As opposed to a centrally organised system, this approach attempts to tie together in a bottom-up fashion, the plethora of IO activities conducted by the United States. It does this by targeting a large variety of foreign and domestic populations, with a monitoring system is simply done by self reporting and the media. This lack of an overarching methodology or process, was mentioned by many as simply a realistic review of the current conditions that exist in today's federal bureaucracy. This is seen primarily in the major CATWOE elements that were emphasised in this sub-model of IO Goals as part of the Transformation CATWOE Category:

- T10   Access to top leadership - overall guidance
- T11   What are the overall goals?
- T12   Set out top-level nodes and missions - goals and objectives
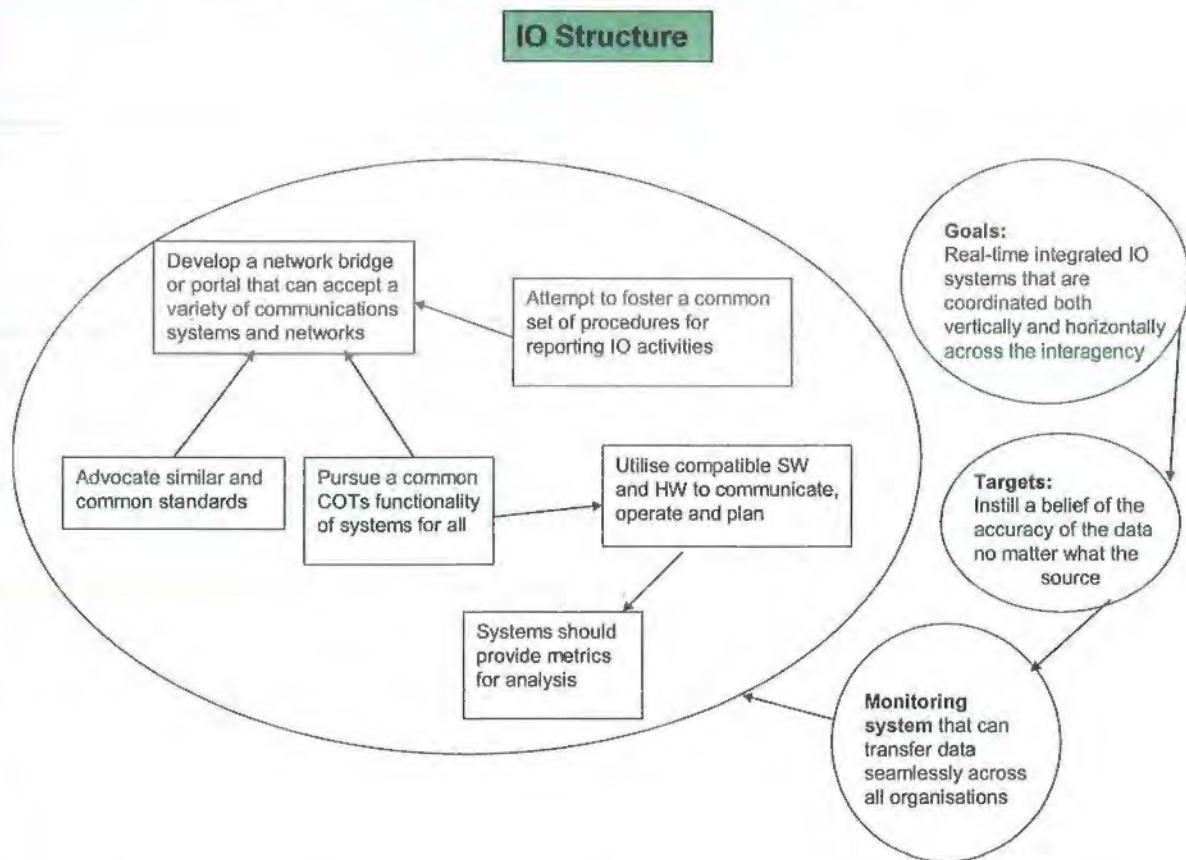
Figure 8.1 – Conceptual Model 2.2: Develop a Decentralised Communications and Networking Procedures to Execute and Facilitate IO Activity

In the next sub-model, a decentralised coordinating system was advocated for the communications and networking procedures to execute and facilitate IO activity. This lack of key or essential government organisation components was not deemed as crucial by the

participants of this thesis. They believed and stated on numerous occasions that in order to effectively conduct an IO campaign, that it was more important to have all participants involved, whether or not they utilised similar themes, ideas, methods, etc. Many thesis participants did not believe that that was needed to develop a centralised coordinating system, because other processes were instead available, as shown below:

- Advocate similar and common standards
- Pursue a common commercial off the shelf functionality of systems for all
- Attempt to foster a common set of procedures for reporting IO activities
- Develop a network bridge or portal that can accept a variety of communications systems and networks
- Utilise compatible software and hardware to communicate, operate and plan
- Systems should provide metrics for analysis

These interviewees felt that real-time integrated IO systems that are coordinated both vertically and horizontally across the interagency could be achieved by instilling an overall belief of the accuracy of the data no matter what the source. Coherence could be achieved by the transfer of data seamlessly across all organizations, due to the use of common standards. This is seen primarily in the major CATWOE elements that were emphasised in this sub-model of IO Structure as part of the Owners CATWOE Category:

- O1   Interagency to include the Department of State, Department of Defense, National Security Council and White House - need more coordination?
- O2   Two Policy Coordinating Committees are redundant
- O6   Department of Defense is building public diplomacy capability because it believes State is not doing enough
- O9   State needs a bigger role - bring back

In addition, there were other CATWOE Elements in this category that were scattered throughout the data that also alluded to the need to understand whether the system was oriented to IO Structure themes:

- A13   Do we need a surge capability?
- E6   Interagency bureaucracies - will org change work?
- E7   24/7 capability? Model campaign headquarters? Around the world
- E15   Top to bottom or bottom to top?

IO Training

Attempt to develop an understanding of the many different users needs and desires

Develop tests to track level and competence of IO users

Analyse strategic goals of different groups

Develop a blended method of IO instruction that utilises a number of academic techniques

Ensure training is available in a number of different venues

Develop feedback mechanisms to evaluate training

Goals:
Ensure users training needs are met

Targets:
Users who need to conduct IO activities

Monitoring system feedback through students and anecdotal evidence

Figure 8.12 – Conceptual Model 2.3: Utilise a Wide Variety of IO Training Courses and Instruction

Training and execution are considered by all participants to be key to the execution of IO within the United States government, but in this sub-model, the participants that provided data expressed the belief that in order to be successful, a wide variety of IO courses and methods of instruction must be utilized. These interviewees felt construct a coherent series of overarching curricula could not be constructed and instead, the federal bureaucracy should instead allow courses to exist as tbey are today. Downsides to this approach include duplication, lack of standardisation and gaps in certain skill sets. However this group of IO experts also believed that realistically, this may be the only viable alternative due to costs and political considerations. The specific taskers needed for this rationalisation from the research participants are shown below:

- Analyse strategic goals of different groups
- Develop a blended metbod of IO instruction that utilises a number of academic techniques

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- Develop tests to track level and competence of IO users
- Attempt to develop an understanding of the many different users needs and desires
- Ensure training is available in a number of different venues
- Develop feedback mechanisms to evaluate training

Realism about overall goals to ensure that users training needs are met, by existing courses and curricula were key themes by the interviewees. This sub-model targets the users who needed to conduct IO activities, with a monitoring system that utilised a bottom up feedback through the students themselves as well anecdotal evidence. This is seen primarily in the major CATWOE elements that were emphasised in this sub-model of IO Training as part of the Environment CATWOE Category:

- E2   Key United States values - freedom, Declaration of Independence, a land of immigrants, Constitution
- E3   Information is like terrain, cannot leave unoccupied
- E13   Training or lack of is badly needed for public diplomacy

In addition, there were other CATWOE Elements in this category that were scattered throughout the data that also alluded to the need to understand whether the system was oriented to IO Training themes:

- A4   How many actors have been trained in IO?
- A14   Senior level United States government training & awareness is needed
- T6   We need continuous training and education
- T9   IO Road Map - major recommendations for training
- W2   Many practitioners do not understand IO
- O5   How many of the above have been trained in IO?

IO Policy

Develop an IO architecture broad enough to cover all US strategic goals

Make training opportunities available to all IO users

Tie together disparate IO strategies and policy with doctrine that stresses key US values

Ensure that these broad themes are promulgated to all IO users

Develop good horizontal communications among key IO policy makers

Enlist the academic community to evaluate IO efforts wrt key US values

Goals: Develop IO policies, strategies and doctrine and can encompass all key US values and IO activities

Targets: Foreign and domestic populations

Monitoring system using polls, surveys, the media and academic reports

Figure 8.13 – Conceptual Model 2.4: Develop an IO Policy and Strategy Broad Enough to Encompass all Key United States Values

Unlike in the first Conceptual Model, where you saw descriptions of the need for a series of overarching and comprehensive set of IO policies, which describe how this mission area would be conducted across the federal government, this next sub-model follows a different approach. While many of the participants agreed that in theory, this would be good, many understood as well that the chance of getting this accomplished was slim. Instead some of the interviewees believed that instead to be successful, the practitioners of IO should just develop an IO strategy that was broad enough to accomplish all key United States objectives. To do this, the IO policies in use should be incorporated into a broader plan, with the following features:

- Tie together disparate IO strategies and policy with doctrine that stresses key United States values
- Ensure that these broad themes are promulgated to all IO users
- Make training opportunities available to all IO users
- Develop an IO architecture broad enough to cover all United States strategic goals
- Develop good horizontal communications among key IO policy makers

- Enlist the academic community to evaluate IO efforts with respect to key United States values

This approach to developing IO strategies and doctrine, is an alternative methodology from the typical process, and in doing so, the key focus is to utilise current policies that can encompass all key United States values and IO activities. The thesis participants were targeting foreign and domestic populations with these IO strategies, and felt that a monitoring system based on polls, surveys, the media and academic reports, would sufficient in this process. This is seen primarily in the major CATWOE elements that were emphasised in this sub-model of   as part of the Weltanschauung CATWOE Category:

- W5   Do we need a National Information Policy?
- W6   Or should we just update the National Security Strategy?

In addition, there were other CATWOE Elements in this category that were scattered throughout the data that also alluded to the need to understand whether the system was oriented to IO Policy themes:

- T13   Cyber Security and public diplomacy related?
- E11   Information Warfare – psychological operations not good terms for interagency, IO, strategic communications and effects based operations - better?
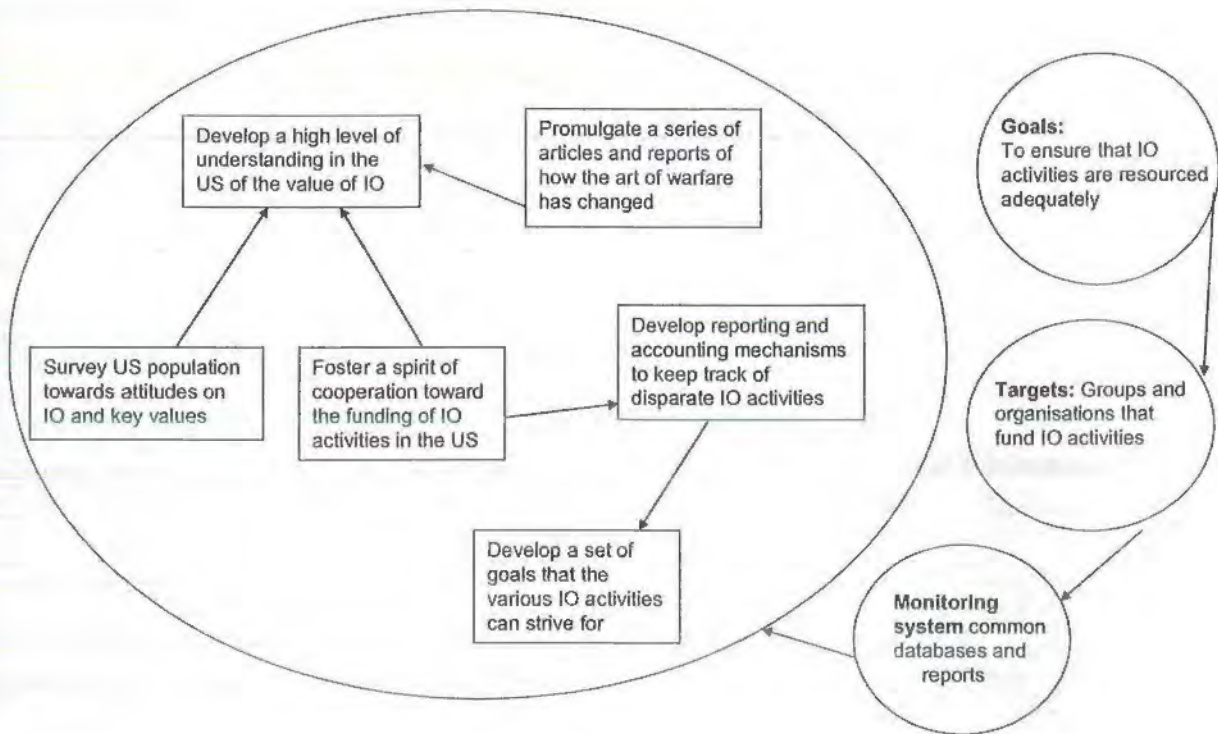
Figure 8.14 – Conceptual Model 2.5: Provide Resources and Adequate Funding to Foster Innovation in IO

Instead of a set of centralised funding, in this alternative model, the participants advocated cooperative and innovative methods of resourcing the conduct of IO by the federal government. The interviewees did not feel that IO could command the large budget or discretionary spending of say a major weapons system and instead suggested the fostering of collaborative efforts to ensure that these programs would get the money that they needed to conduct their mission. This was done by the following means:

- Survey key portions of the United States population (that is, personnel and staff that are familiar with these concepts or deal with these issues) towards attitudes on IO and key values
- Foster a spirit of cooperation toward the funding of IO activities in the United States
- Promulgate a series of articles and reports of how the art of warfare has changed
- Develop a high level of understanding in the United States of the value of IO
- Develop reporting and accounting mechanisms to keep track of disparate IO activities
- Develop a set of goals that the various IO activities can strive for

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The major goal of this sub-model was to ensure that the respective IO activities in the federal government were resourced adequately, especially targeting the groups and organisations that conduct IO activities. This was done by utilising a set of common databases and reports as a standard monitoring system. This is seen primarily in the major CATWOE elements that were emphasised in this sub-model of All Other Personnel as part of the Client CATWOE Category:

- C1   Foreign Audiences
- C2   Key decision makers (foreign and domestic)
- C3   United States Citizens (general public)
- C5   Academia (foreign and domestic)
- C6   Media including Hollywood
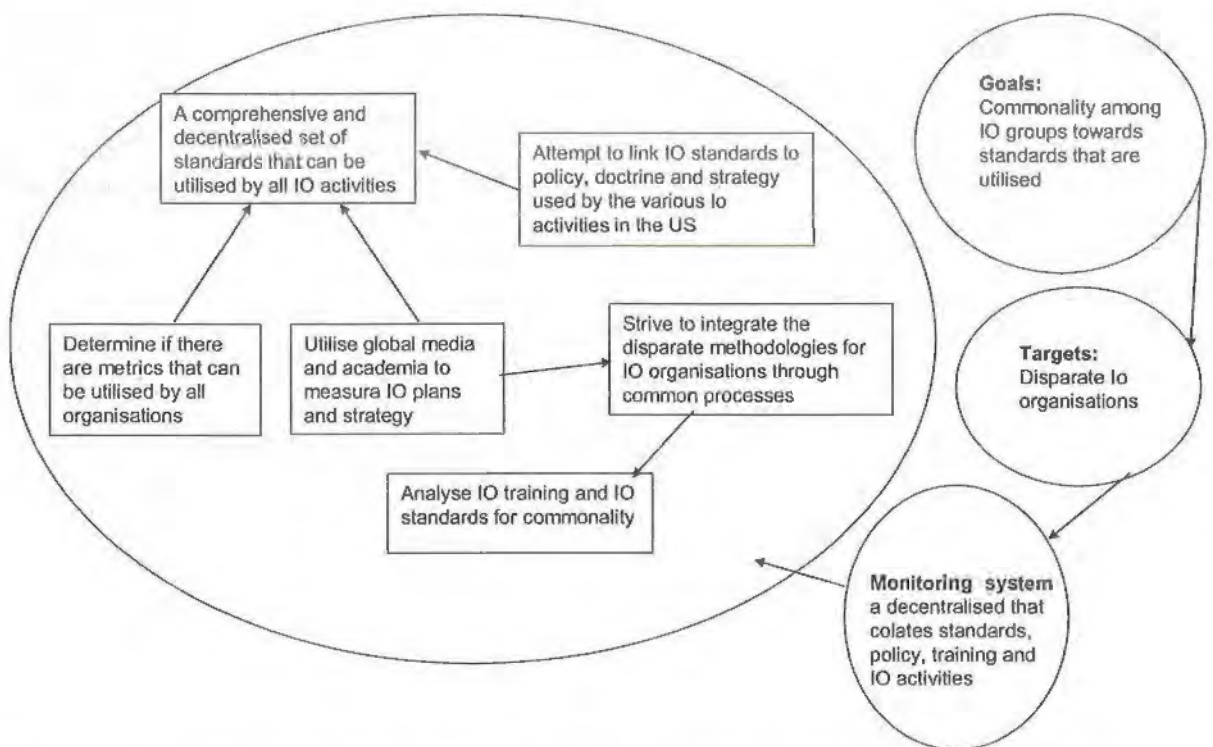
Figure 8.15 – Conceptual Model 2.6: Develop a set of IO standards that can be understood and utilised by all organisations

As was also mentioned in sub-model 1.6, the ability to measure and validate success was considered a crucial metric in the performance of an IO task. While many participants advocated a top-down approach with a strong internal feedback mechanism, other interviewees instead

advocated a more decentralised methodology, which embraced any and all IO standards. This bottom-up view utilises a more liberal process for collecting metrics that attempts to bring together disparate activities into a collective force. To do this, data obtained as part of this research project, was sorted in the following manner:

- Determine if there are metrics that can be utilised by all organisations
- Utilise global media and academia to measure IO plans and strategy
- Attempt to link IO standards to policy, doctrine and strategy used by the various Io activities in the United States
- A comprehensive and decentralised set of standards that can be utilised by all IO activities
- Strive to integrate the disparate methodologies for IO organisations through common processes
- Analyse IO training and IO standards for commonality

The goal of this effort was to support commonality among IO groups towards a series of standards to be utilised, by disparate IO organizations, to create a coherent but decentralised monitoring system that collates standards, policy, training and IO activities. This is seen primarily in the major CATWOE elements that were emphasised in this sub-model of IO Personnel as part of the Actor CATWOE Category:

- A1   Media/Hollywood - reservists or liaison personnel needed?
- A3   The Rendon Group and consultants - volunteers aka like civil defense?
- A9   International IO - that is, corporate IO?
- A10   Clearances and language skills are essential

In addition, there were other CATWOE Elements in this category that were scattered throughout the data that also alluded to the need to understand whether the system is oriented to IO Personnel themes:

- T5   Hiring practices for military civilians dated - industrial era

8.3   Analysis of the Conceptual Models

Outlined below again are the specific Conceptual Models, sub-models and an analysis of the validity of these representation's based on the reality of the development of IO across the United States government. In general, the first set of models, numbered 1.1 through 1.6 are more of the top-down, enterprise-wide view, while the latter set, numbered 2.1 through 2.6, tend to contain more of a bottom-up weltanshauung or worldview. A colour code will be used to show how these conceptual ideas relate to the actual conduct of IO, for each of the 12 sub-Conceptual

Models'. Blue is considered exceptional and greatly above the standard, where the interviewees believed that the United States government was making great progress in improving the conduct of IO across the federal bureaucracy. Green is considered a little above average, while Yellow is slightly below average and Red is poor in overall performance. This schema will be used throughout this chapter to analyse the overall conduct of this warfare area as related by the participants themselves in both the original interviews and the follow-up sessions.

8.3.1   Analysis of Conceptual Model 1.1 – Tactical vs. Strategic Goals for USG IO Systems

This model is centred on the CATWOE Actor element, data cells A5, A8, A12, O4 and E15, while focusing on the differences between Tactical vs. Strategic Concepts as discussed in Chapter Eight. Key points from that section included:

- CM 1.1.1   Analyse government agencies plans with respect to IO
- CM 1.1.2   Develop similar type of IO plans and goals in each United States government agency
- CM 1.1.3   Develop a centralised series of committees and groups to monitor, and adjust plans as needed
- CM 1.1.4   Ensure strategic goals match interagency IO plans
- CM 1.1.5   Ensure that these IO plans are synchronised across the organizations
- CM 1.1.6   Match agency plans to strategic IO goals for United States government

If the information brought forth in this research project is then dissected further, it can be seen that significant progress has been achieved in the development of a series of national goals and standards. The sheer breadth of national policies with their interlocking strategies can be epitomised by the IO Road Map and the new Joint Publication 3-13, both of which were released in 2003. Major efforts have also been conducted to analyse these new policies to ensure that they allowed for the ability to synchronise the actions and activities of these interagency units to better conduct IO. An example of this development of new IO training and planning courses can be seen at the National Defense University and the Joint Forces Staff College. Other examples of this enterprise-wide effort for the United States government can be seen in the promulgation of new instructions such as the Department of Defense Instruction 8570.1 which mandates the training and education of the Information Assurance workforce, including the enforcement of certifications, as an obvious reference to the understanding of the importance of standards.

While there has been progress, in many ways, much work still needs to be done in this specific CATWOE element. The early belief that these IO plans would be centralised, with federated and matching goals is still not a realised goal. Feedback from the separate verification and validation efforts reveal that more attention needs to be paid to matching the goals, from agency to agency, in both the vertical and horizontal planes. In addition, the diverse plans that are still originating across the Department of Defense and federal agencies have yet to embrace common standards for the conduct of IO, all of which point to the need to continue efforts in this multifaceted warfare area. A nascent effort to start an IO Standards Working Group is underway, but still needs time and funding to succeed.

Therefore this section is colour coded as shown below when comparing the conceptual issues of CM 1.1.1 through CM 1.1.6, to the reality of IO in use today by the United States government.

1.1.1	1.1.2	1.1.3	1.1.4	1.1.5	1.1.6

Table 8.4 – Analysing Effectiveness of CM 1.1

These rankings came from a variety of comments and observations of the thesis participants. In particular it was noted that while good work has been conducted on analysing and developing IO plans across the federal agencies, that the ability to match strategic goals to these plans is poor. Overall it still appears that many of the government organisations are still operating in a vacuum, and not integrating well across both the tactical and strategic IO areas.

8.3.2 Conceptual Model 1.2 - Coordinating systems between White House, Department of State and the Department of Defense

This model is centred on the CATWOE Transformation element, data cells T1, T3, T4, A2, A6, A11, W1 and O3 which focused on the differences between Better Integration of IO Actions as discussed in Chapter Eight. Key points from that section included:

- CM 1.2.1   Ensure coordinating systems utilise similar standards
- CM 1.2.2   Operations should be 24/7 – constant and continuous
- CM 1.2.3   Need buy-in, resources and commitment from top leadership
- CM 1.2.4   Develop a coherent and integrated set of coordinating systems between all three organisations
- CM 1.2.5   Utilise same software and hardware to communicate, operate and plan
- CM 1.2.6   Systems should provide metrics for analysis

This is an area that has not progressed as far as the development of new IO policy in the United States government. The lack of acknowledged enterprise-wide standards, requirements and mandates has hindered the development of dedicated hardware or software for coordinating systems to conduct IO. This was evidently apparent in the disparate IO organisations, which to date, have not required similar architectures, definitions or rule sets. This lack of a coherent or integrated set of coordinating systems, that utilise similar software or hardware to implement IO was exceedingly obvious not only from the interviews, but in the review of changes in the federal bureaucracy. Overall it was evident by the information gathered from the thesis participants, that need for more and better integration of IO systems was needed by the United States government.

Therefore this section is colour coded as shown below when comparing the conceptual issues of CM 1.2.1 through CM 1.2.6, to the reality of IO in use today by the United States government.

1.2.1	1.2.2	1.2.3	1.2.4	1.2.5	1.2.6

Table 8.5 – Analysing Effectiveness of CM 1.2

These rankings came from a variety of comments and observations of the thesis participants. In particular it was noted that while good work has been achieved in conducting 24/7 operations and getting top leadership buy-in required to ensure success. Less optimal was the use of the same or compatible hardware and software to communicate across the federal bureaucracy. Overall it still appears that many of the government organisations are not coordinating as well as desired and that not only is technology hindering progress, the lack of enterprise wide standards and systems are need to ensure better integration across these key agencies.

8.3.3   Conceptual Model 1.3 - Investigate Needs of Stakeholders

This model is centred on the CATWOE Owners element, data cells O7, O8, A7, A15, E5, and E8 which focused on the differences between Key-Decision Makers as discussed in Chapter Eight. Key points from that section included:

- CM 1.3.1   Define key decision makers in the United States government
- CM 1.3.2   Develop system to understand stakeholders needs and desires
- CM 1.3.3   Develop overall guidance for key United States government organisations
- CM 1.3.4   Ensure that key United States government agencies understand users needs and desires

- CM 1.3.5   Execute system on a consistent and repeatable basis
- CM 1.3.6   Measure the needs of stakeholders

This was an interesting process to investigate. It was obvious from the discussions involved in this project, that the needs of the stakeholders were key elements to the ultimate success of this effort. Tied into the need for more IO training, the lack of coherent policy, the need for more and better integration, are all crucial to achieving success for IO in the United States government. Many of the participants in this project, asked almost wistfully at times, for the key decision-makers in certain bureaucratic organisations such as the Department of Defense, State and the National Security Council to work together, to develop an enterprise-wide set of requirements. In this case, these needs would in the interviewees opinions, very similar and this would add incentives to collaborate across these disparate groups.

Unfortunately, data and anecdotal evidence point to little to no sharing of IO requirements across these key decision-makers or shareholders. The sheer breadth of disparate policy, instructions, mandates and instructions, leads instead to a situation in which each organization is operating in a vertical vacuum without the horizontal integration desired by the participants of this thesis. Much of this dichotomy is the result of the short terms of government appointee's, the need to abide by different agency dynamics, and the lack of an over-riding need to work together at a higher level.

Therefore this section is colour coded as shown below when comparing the conceptual issues of CM 1.3.1 through CM 1.3.6, to the reality of IO in use today by the United States government.

| 1.3.1 | 1.3.2 | 1.3.3 | 1.3.4 | 1.3.5 | 1.3.6 |

Table 8.6 – Analysing Effectiveness of CM 1.3

These rankings came from a variety of comments and observations of the thesis participants. In particular it was noted that great progress in defining the key decision-makers in the federal bureaucracy with regard to IO. Likewise, good progress was being made on developing stakeholder's needs and desires, as well as passing this guidance down through the chain of command. However, more development was desired to meet the needs of both the users and stakeholders on a consistent and standardized basis. Overall it still appears that that there is a significant gap around the power and capabilities inherent with regard to IO in the key decision

makers understanding what IO can and cannot accomplish with regard to their agencies and personnel.

8.3.4 Conceptual Model 1.4 - Set up an Interagency IO Campaign Bureaucracy

This model is centred on the CATWOE Clients element, data cell C4 which focused on the differences between US Government Clients as discussed in Chapter Eight. Key points from that section included:

- CM 1.4.1   Develop consistent IO policy across the United States government organisations
- CM 1.4.2   Develop IO planning system for all of the United States government
- CM 1.4.3   Ensure adequate training of personnel across United States government to man this bureaucracy
- CM 1.4.4   Ensure that IO architecture is consistent, to execute a top-down system
- CM 1.4.5   Execute strategic IO plans from single system
- CM 1.4.6   Use IO standards recognised across United States government

The security constraints of major portions of IO, especially in the computer network defense and cyber security arena, tend to lead to an environment, where the majority of the key personnel, from an American viewpoint, tend to reside in United States government organisations or agencies. Whether they are military, civil service or Department of Defense contractors, these people all represent the federal bureaucracy to some extent, and thus characterise a major portion of the clients that actually 'utilise' IO as a routine part of their operational capability.

What this view of course doesn't represent, is the incredible explosion in commercial and industry capabilities with regard to the growth of computer, information technology, video and bandwidth rates available to the average citizen around the world. The real key to IO is that it has transformed warfare and taken the power away from the sovereign nations and instead pushed it down and out to the people. This is the revolutionary aspect of IO, because it allows anyone to mount an IO campaign, in essence bypassing the traditional centres of power which include military, diplomatic and economic. Instead, the ability to conduct an information-based campaign, from an individual's house or business has drastically altered the environment of the 21st century, which is only being recognized now. That is the weakness of this CATWOE element, because it does not allow for the power of the individual.

Therefore this section is colour coded as shown below when comparing the conceptual issues of CM 1.4.1 through CM 1.4.6, to the reality of IO in use today by the United States government.

| 1.4.1 | 1.4.2 | 1.4.3 | 1.4.4 | 1.4.5 | 1.4.6 |

Table 8.7 – Analysing Effectiveness of CM 1.4

These rankings came from a variety of comments and observations of the thesis participants. In particular it was noted that while good work has been conducted on developing consistent IO policy and IO planning systems, with adequate training of personnel across United States government, there was very little progress on use of an enterprise-wide set of IO standards. Overall it still appears that the desire to set up an interagency IO campaign bureaucracy is still too optimistic and it will take more time for the US government clients to achieve this goal.

8.3.5 Conceptual Model 1.5 - Execute IO Campaigns

This model is centred on the CATWOE Weltanschauung element, data cells W3, W4, E9, E12 and E14 which focused on the differences in IO Themes as discussed in Chapter Eight. Key points from that section included:

- CM 1.5.1   Ensure compatibility of interagency IO processes
- CM 1.5.2   Incorporate IO into Department of Defense, National Security Council and DoS's, normal operational capability
- CM 1.5.3   Ensure United States government bureaucracy is capable of executing IO plans and operations
- CM 1.5.4   Execute standard IO plans and operations 24/7 across the United States government
- CM 1.5.5   Execute IO campaigns 24/7 around the world
- CM 1.5.6   Develop feedback mechanisms for IO campaigns

The successful execution of IO campaigns was a core component of many interviewees' world view or weltanschauung. The ability to integrate and operate across bureaucratic boundaries in a seamless manner, to conduct worldwide IO campaigns, in a 24/7 manner was considered essential. Policy enforcement, the utilization of enterprise-wide standards and adequate feedback mechanisms were considered key to the conduct of these missions. Time after time, in interview after interview, it became apparent that the desires of the thesis participants did not match with the reality of how the United States government conducted IO campaigns. Disjointed tasks, overlapping requirements and priorities, the lack of synchronisation and coordination of the

disparate federal bureaucracies was instead very evident not only from the interviewees, but as well from a review of updates to IO policy and organization changes that have occurred over the last few years. Many reasons exist for this, but the lack of compelling reasons to cooperate, whether fiscal, political or operational, are probably the major reason that the conduct of IO campaigns has not been as successful as desired.

Therefore this section is colour coded as shown below when comparing the conceptual issues of CM 1.5.1 through CM 1.5.6, to the reality of IO in use today by the United States government.

| 1.5.1 | 1.5.2 | 1.5.3 | 1.5.4 | 1.5.5 | 1.5.6 |

Table 8.8 – Analysing Effectiveness of CM 1.5

These rankings came from a variety of comments and observations of the thesis participants. In particular it was noted the great progress in conducting IO operations 24 / 7 around the world, as well as steady improvement in the ability to incorporate IO into Department of Defense, National Security Council and Department of State, normal operational capability, as well to ensure United States government bureaucracy is capable of executing IO plans and operations on a daily basis. However it still appears that the use of consistent and overarching IO Themes when conducting IO campaigns needs more effort.

8.3.6 Conceptual Model 1.6 - Measure IO Campaign's Success

This model is centred on the CATWOE Environment element, data cells E1, E4, E10, T2, T7 and T8 which focused on the fact that IO is not a New Warfare Area as discussed in Chapter Eight. Key points from that section included:

- CM 1.6.1   Develop metrics that can be utilised across United States government
- CM 1.6.2   Utilise global media and United States government to measure IO plans and strategy
- CM 1.6.3   Ensure IO standards, policies and procedures are developed and adhered to by the three key United States government agencies
- CM 1.6.4   A comprehensive and integrated set of measures of evaluate an IO Campaign
- CM 1.6.5   Develop standard methodology to measure success of an IO campaign
- CM 1.6.6   Incorporate IO training, resources, planning and operations into one set of metrics for United States government

The key to understanding this conceptual model is to truly understand that because IO is in fact not a new warfare area, but instead a combination of ancient and recent technologies and warfare

concepts, that in order to measure the success of an IO campaign, that a variety of methods and measures must be used. This particular process centres around the top down process, in which standardised policies, metrics, methodologies, training and education are all focused on determining the success or failure of an IO operation or mission.

These stated desires are unfortunately not being implemented across the United States government for a variety of reasons. The lack of adequate fiscal assets is a major factor, but organization inertia, disinterested leadership, competing operational issues, infighting and the general inability to achieve the overwhelming acceptance of this requirement. As noted by the participants, while the desire for an overall enterprise-wide IO capability in the federal bureaucracy is strong, the lack of coherent set of metrics, plans, strategy, standards, policies, procedures, methodologies, training and education courses, all lead to a disorganised and an un-coordinated function. In addition, even more troublesome for IO is that because it is comprised of multiple, often disparate warfare areas such as Electronic Warfare, Psychological Operations, Deception, etc, which are sometimes not necessarily viewed as cooperative operational areas.

Therefore this section is colour coded as shown below when comparing the conceptual issues of CM 1.6.1 through CM 1.6.6, to the reality of IO in use today by the United States government.

| 1.6.1 | 1.6.2 | 1.6.3 | 1.6.4 | 1.6.5 | 1.6.6 |

Table 8.9 – Analysing Effectiveness of CM 1.6

These rankings came from a variety of comments and observations of the thesis participants. In particular it was noted that while good work has been conducted on developing metrics that can utilised across United States government, as well as utilizing global media and United States government to measure IO plans and strategy, there was still a severe lack of a comprehensive and integrated set of measures of evaluate an IO Campaign. This inability to have the power to measure an IO campaign's success, combined with the fact that IO is not a new warfare area, and that these issues should have already been addressed, highlights even more, the current deficiencies with respect to the conduct of IO within the United States government.

8.3.7 Conceptual Model 2.1 - Accept any and all IO actions conducted for the United States government

This model is centred on the CATWOE Transformation element, data cells T10, T11 and T12 which focused on the differences between IO Goals of the federal bureaucracy as discussed in this chapter. Key points from that section included:

- CM 2.1.1   Use opinion polls to determine United States strategic goals
- CM 2.1.2   Compare IO actions to long-standing cultural values of United States
- CM 2.1.3   Develop a decentralised accounting mechanism such as a portal, where IO activities can be reported
- CM 2.1.4   Develop strategic goals from the IO actions conducted within the United States
- CM 2.1.5   Utilise polls and reports from the media to understand impact of IO activities
- CM 2.1.6   Utilise academics and media to analyse effectiveness of IO campaigns with respect to targets

This second set of Conceptual Models (2.1-2.6) were based on the interviewees, who felt that while an overarching federal capability to conduct IO was desired, in reality, the only way to truly conduct this warfare area, was to do so on a distributed, and decentralized manner. This approach was seen in this sub-model, in which any and all IO actions that are accepted, as part of the development of goals in the federal bureaucracy.

Key to this bottom-up methodology was the realization that control all aspects of a set of disparate organisations such as the White House, the State Department as well as the Department of Defense cannot be controlled. The thesis participants who advocated this methodology felt that the reliance on a wide-flung net of reports, polls, and other informational elements was the best strategy, and perhaps only mechanism for determining the effectiveness of an IO campaign. Part of this may have been cynicism on their part, a realisation that the federal bureaucracy would not at this time, construct a comprehensive and elaborate global reporting structure to measure IO goals as desired to be most effective. Over and over, in comments as part of the interviews, ideas were mentioned, that a more loose and collaborative environment was needed to foster the participatory need of these different agencies and their respective needs.

Therefore this section is colour coded as shown below, when comparing the conceptual issues of CM 2.1.1 through CM 2.1.6, to the reality of IO in use today by the United States government.

| 2.1.1 | 2.1.2 | 2.1.3 | 2.1.4 | 2.1.5 | 2.1.6 |

Table 8.10 – Analysing Effectiveness of CM 2.1

These rankings came from a variety of comments and observations of the thesis participants. In particular it was noted that very good results were obtained from the use of opinion polls to determine US strategic goals, and this helped to compare IO actions to long-standing American cultural values, but the other areas in this issue area were all lacking solid improvement. In particular, the inability to link these goals to IO actions, via the media or academia was of concern. Overall it was felt from the participants of this project that the attainment of IO goals was still in need of more and dedicated support, especially while trying to accept any and all actions as part of a broader IO effort in the United States.

8.3.8 Conceptual Model 2.2 - Develop a Decentralised Communications and Networking Procedures to Execute and Facilitate IO Activity

This model is centred on the CATWOE Owners element, data cells O1, O2, O6, O9, A13, E6, E7 and E15 which focused on the differences in the IO Structure of the United States government as discussed in Chapter Eight. Key points from that section included:

- CM 2.2.1   Advocate similar and common standards
- CM 2.2.2   Pursue a common Commercial off the Shelf functionality of systems for all
- CM 2.2.3   Attempt to foster a common set of procedures for reporting IO activities
- CM 2.2.4   Develop a network bridge or portal that can accept a variety of communications systems and networks
- CM 2.2.5   Utilise compatible software and hardware to communicate, operate and plan
- CM 2.2.6   Systems should provide metrics for analysis

This Conceptual Model follows a similar theme as part of a bottom-up approach to conducting IO in support of the United States government. The advocates who believed in these CATWOE elements, acknowledged that overarching communications and network systems while nice to have, would probably not be realised due to a variety of reasons and instead relied on a patchwork of existing platforms.

Key to this methodology is the belief that a set of common or central standards, procedures and metrics can overcome the use of disparate hardware and software for an enterprise structure. It was understood by many participants that this method was not perhaps optimal to manage the conduct of IO operations by the federal bureaucracy, but most of these interviewees with this weltanschauung, also expressed the opinion, that it may in fact be the only

choice. Resistance to a comprehensive arrangement, whether organisational or fiscal, has to date, not allowed the development of a common IO network or an extensive communications system, thereby forcing participants to rely on the existing mechanisms that exist today. Thus, it was agreed by many of the thesis interviewees, that the current structure of IO within the United States government, while flawed and not perfect, was probably the best composition and configuration that they could expect at this time to conduct IO types of missions.

Therefore this section is colour coded as shown below when comparing the conceptual issues of CM 2.2.1 through CM 2.2.6, to the reality of IO in use today by the United States government.

2.2.1	2.2.2	2.2.3	2.2.4	2.2.5	2.2.6

Table 8.11 – Analysing Effectiveness of CM 2.2

These rankings came from a variety of comments and observations of the thesis participants. In particular it was noted that the adoption and pursuit of common standards, systems and procedures was ongoing and improving, but the development of hardware, software, networks and systems to support the use of better IO structures is still needed. Overall this sub-conceptual model was seen as simply average among the 12 different views, which is interesting, because the IO Structure area of the CATWOE elements was cited many times (eight different data cells) and was considered important to the interviewees. The lack of significant improvement in this area is often attributed to the lack of a coherent focus by the federal bureaucracy on improving IO communications and network systems across the United States government as part of an enterprise or umbrella IO structure.

8.3.9 Conceptual Model 2.3 - Utilise a Wide Variety of IO Training Courses and Instruction

This model is centred on the CATWOE Environment element, data cells E2, E3, E13, A4, A14, T6, T9, W2 and O5 which focused on the need for integrated IO Training as discussed in Chapter Eight. Key points from that section included:

- CM 2.3.1   Analyse strategic goals of different groups
- CM 2.3.2   Develop a blended method of IO instruction that utilises a number of academic techniques
- CM 2.3.3   Develop tests to track level and competence of IO users
- CM 2.3.4   Attempt to develop an understanding of the many different users needs and desires

- CM 2.3.5   Ensure training is available in a number of different venues
- CM 2.3.6   Develop feedback mechanisms to evaluate training

The development of comprehensive and integrated training was mentioned and alluded to by many of the thesis participants. While a top-down approach was advocated in Conceptual Model One, a number of interviewees also advocated a more federated arrangement that understood the disparate needs of the different agencies and organisations. For example, it is commonly cited that in the United States Department of Defense, there are over 70 different training courses that touch on some portion of IO. Cries for consolidation and amalgamation of the curricula have been heard, but also generally ignored because of competing requirements and mandates by the respective diverse groups.

It was generally agreed by the interviewees that all IO training could help to improve the conduct of this warfare area for the federal bureaucracy and that the development of new and better themes would result, as more of the respective key government decision-makers understood IO better, due to more and diverse IO curricula. Thus while the interviewees agreed that an integrated and coordinated approach to total IO training would have been nice, in reality, these personnel also understood that competing and often conflicting directives, will often not allow for a total merger of these disparate classes. A consensus among a number of these research participants was that the development of broad standards, metrics, tests and processes to measure and track IO training and education, that is feasible and could accomplish many of the same goals as a more direct enterprise-wide, mandated curriculum.

Therefore this section is colour coded as shown below when comparing the conceptual issues of CM 2.3.1 through CM 2.3.6, to the reality of IO in use today by the United States government.

| 2.3.1 | 2.3.2 | 2.3.3 | 2.3.4 | 2.3.5 | 2.3.6 |

Table 8.12 – Analysing Effectiveness of CM 2.3

These rankings came from a variety of comments and observations of the thesis participants. In particular it was noted as a good point that a large number of opportunities to participate in IO training are available, that these classes took into account many different strategic goals, with a blended method of instruction utilising a number of academic techniques. However progress was still needed to insure that these instructional techniques were relevant and complete to meet the needs of the IO users. The most often cited way to do this was through the use of feedback

mechanisms that better understand the different user's requirements with regard to IO Training in the United States government.

8.3.10   Conceptual Model 2.4 - Develop an IO Policy and Strategy Broad Enough to Encompass all Key United States Values

This model is centred on the CATWOE Weltanschaaung element, data cells W5, W6, T13 and E11 which focused on the differences between ⋅y concepts as discussed in Chapter Eight. Key points from that section included:

- CM 2.4.1   Tie together disparate IO strategies and policy with doctrine that stresses key US values
- CM 2.4.2   Ensure that these broad themes are promulgated to all IO users
- CM 2.4.3   Make training opportunities available to all IO users
- CM 2.4.4   Develop an IO architecture broad enough to cover all United States strategic goals
- CM 2.4.5   Develop good horizontal communications among key IO policy makers
- CM 2.4.6   Enlist the academic community to evaluate IO efforts with respect to key US values

This sub-Conceptual Model is very interesting because it is diametrically opposed to those in the first set of procedures, where instead of advocating the development of a comprehensive IO policy, instead what these themes seem to suggest, is that the United States, should simply tie together what is already being conducted today. In essence this set of CATWOE elements abandons the concept of trying to control the development of IO policy and instead advocates, simply knowing what is being done, and trying to bring together the parts and pieces that are most useful, and match the best themes, goals and training needs of the federal bureaucracy.

The key to understanding this model is to view the American government for what it truly is, i.e. a diverse and incredibly complex organisation that no one can control, with competing interests and needs, that cannot in the end ever be totally controlled. In this pragmatic understanding of the situation, a solution can be obtained that perhaps works better by simply trying to coordinate a number of different agencies, by loosely tying their policies and strategies together, rather than mandating enterprise type actions. Likewise, the use of broad architectures, structures, standards and a loose consortium of academics and government decision-makers, working together to develop broad IO policy themes, was viewed by some interviewees as the best methodology to move ahead in the conduct of IO missions.

Therefore this section is colour coded as shown below when comparing the conceptual issues of CM 2.4.1 through CM 2.4.6, to the reality of IO in use today by the United States government.

2.4.1	2.4.2	2.4.3	2.4.4	2.4.5	2.4.6

Table 8.13 – Analysing Effectiveness of CM 2.4

These rankings came from a variety of comments and observations of the thesis participants. In particular it was noted that overall, the performance of the federal bureaucracy with regard to the development of a coherent set of IO policy was below average. There were no great efforts that were brought forward that the participants believed strongly supported or felt that were contributing greatly to this issue area. Overall it was suggested that much more work was needed across the board in the development of IO policy that was broad and coherent enough to encompass the key American values with regards to the United States government and federal bureaucracy.

8.3.11   Conceptual Model 2.5: Provide Resources and Adequate Funding to Foster Innovation in IO

This model is centred on the CATWOE Client element, data cells C1, C2, C3, C5 and C6 was focused on the differences between All Other Personnel as discussed in Chapter Eight. Key points from that section included:

- CM 2.5.1   Survey United States population towards attitudes on IO and key values
- CM 2.5.2   Foster a spirit of cooperation toward the funding of IO activities in the United States
- CM 2.5.3   Promulgate a series of articles and reports of how the art of warfare has changed
- CM 2.5.4   Develop a high level of understanding in the United States of the value of IO
- CM 2.5.5   Develop reporting and accounting mechanisms to keep track of disparate IO activities
- CM 2.5.6   Develop a set of goals that the various IO activities can strive for

Likewise the pragmatic approach can be seen in this sub-model, where if all IO actions cannot be controlled then, instead, the government should serve as an instrument to foster innovation. The ability to act as a catalyst was viewed as a crucial function to best support the development of a better set of IO personnel across the federal bureaucracy.

Key to the success of this methodology, was the understanding of what were the main values of the American population that should always be held as the core - namely the Declaration of Independence, Bill of Rights, Constitution, etc. Likewise, an education campaign was also seen as crucial to teach the disparate IO personnel on how best to protect and foster these core values across the United States government. Features such as articles, conferences, additional funding and a heightened awareness were all suggested as methods to support the spirit of innovation in personnel, around the world that are affiliated with or are conducting some aspect of IO. The most important facet to remember, and this was emphasised by a number of thesis participants, was that the points that the United States government must embrace and spread are exactly these key values cited above. It is these aspects of America that are so cherished around the world that should be instead emphasised by all personnel when conducting IO.

Therefore this section is colour coded as shown below when comparing the conceptual issues of CM 2.5.1 through CM 2.5.6, to the reality of IO in use today by the United States government.

| 2.5.1 | 2.5.2 | 2.5.3 | 2.5.4 | 2.5.5 | 2.5.6 |

Table 8.14 – Analysing Effectiveness of CM 2.5

These rankings came from a variety of comments and observations of the thesis participants. In particular it was noted that great emphasis had been placed on building awareness among the clients through articles and reports on the importance of IO with regard to the United States. These beliefs were also somewhat prevalent across the general American population, but that was as far as the efforts appeared to have been conducted per the project participants. Notably lacking was the ability to keep track of all of the disparate IO activities, as well as to gain additional funding or a coherent set of goals across the federal bureaucracy. All together, it appeared that the efforts to bring together the disparate personnel involved with IO, still needs additional focus and exertion.

8.3.12   Conceptual Model 2.6: Develop a Set of IO Standards that can be Understood and Utilised by all Organisations

This model is centred on the CATWOE Actor element, data cells A1, A3, A9, A10 and T5 which focused on the need for more and better IO Personnel as discussed in this chapter. Key points from that section included:

- ⊚ CM 2.6.1   Determine if there are metrics that can be utilised by all organisations
- ⊚ CM 2.6.2   Utilise global media and academia to measure IO plans and strategy
- ⊚ CM 2.6.3   Attempt to link IO standards to policy, doctrine and strategy used by the various IO activities in the United States
- ⊚ CM 2.6.4   A comprehensive and decentralised set of standards that can be utilised by all IO activities
- ⊚ CM 2.6.5   Strive to integrate the disparate methodologies for IO organisations through common processes
- ⊚ CM 2.6.6   Analyse IO training and IO standards for commonality

This was an interesting concept in that many of the interviewees believed that a more robust set of standards would facilitate the better development of IO personnel within the global sense. These participants felt that because the warfare areas of information warfare were so diverse, that a set of standards could do more than any action to unify the actors conducting these types of missions and the key to the successful development of these standards was to make them broad and encompassing of all different arenas of IO. This discussion by the participants was based on the widely perceived need for a coherent set of IO Standards that are recognised across the interagency and coalition organisations.

The problem is of course, that there are no recognised IO standards today, which are crucial to the recognition of any course, and standards as well standards give credence or relevance to a course. One of the reasons for this concern, and to understand why the need for standards are so important, is that it must be understood that there are a lot of different IO or IO related courses in existence today, of which most are unrelated and uncoordinated. Most of these courses are stove-pipe or standalone entities, which do not entitle the student to any commonly recognised qualification. The lack of standardisation in the IO training environment has hampered efforts to develop interagency and coalition support. The key will be to utilise a well-recognised standards development approach such as led by the National Security Agency through its National Information Assurance Training and Education Centre. The latter is well recognised throughout the United States government as a leader in standardisation efforts in the Information Assurance realm, and this expertise could be translated to the IO area to better support the development of IO personnel.

Therefore this section is colour coded as shown below when comparing the conceptual issues of CM 2.6.1 through CM 2.6.6, to the reality of IO in use today by the United States government.

2.6.1	2.6.2	2.6.3	2.6.4	2.6.5	2.6.6

Table 8.15 – Analysing Effectiveness of CM 2.6

These rankings came from a variety of comments and observations of the thesis participants. In particular it was noted that the only area where the federal bureaucracy appeared to be progressing with regards to the development of IO personnel in particular, was its disparate attempts to link IO policy, doctrine and strategy together. Otherwise, most of the participants had few good comments on this particular CATWOE element and in particular they felt that comprehensive and decentralised set of standards and methodologies or processes that can be utilised by all IO activities, was desperately needed. Of all of the 12 suh-conceptual models, this one involving the need for a common set of IO standards was cited most often as to requiring the greatest attention and need for improvement.

8.4   Bringing together the Disparate Conceptual Models with regard to the CATWOE Elements

There are many ways to do this, but one method is to analyse the changes in the Department of Defense organization with respect to perspective management, over the last decade. Specifically a good place to start is actually a low point with the dismantling of the United States Information Agency in 1999 by the State Department. For 40 years, the United States Information Agency has served as the primary public diplomacy advocate and strategic information within the United States government. Its task was to fight communism and to highlight the benefits of democracy around world. And in a nutshell, the United States Information Agency did its job very well, mayhe too well, because some analysts believe that it was these international information programs that played a major role in the demise of the Soviet Union. The end of the Cold War has rendered obsolete much of the raisin d'être for the United States Information Agency, specifically regarding their programs affecting propaganda against the Soviet Union. The United States Information Agency has always enjoyed an independent status within the United States government since its founding in 1953. This lack of accountability was a main theme found resonating in State Department personnel, and so it was

only natural that any reform effort would focus on a clear command and control structure. From a number of conversations with senior staffers from Senator Helm's office, it was in the end, the influence of the domestic political agenda by the Republicans that probably more than any other factor directly resulted in the Reform and Restructuring Act. It was felt from the data received during these interviews that the consolidation efforts at State were a direct result of elections of 1994, and the perceived need to reduce government bureaucracy.

8.4.1   A Comparison of Client CATWOE Elements

What this vignette shows is that the ability of the United States government to affect the attitude of people around the world through the use of public diplomacy, a form of perception management and IO has greatly diminished within the federal organisations and agencies over the last decade. As noted below in Table 8.16, the need to influence all other clients is extremely important as cited throughout this research in five different data cells and by over 90% of the interviewees. So here we have an expressed need for the ability of American bureaucracy to have a capability with IO that has instead been taken away due to overt use of domestic politics. This chart shows the key IO themes delineated earlier in Chapter Seven for the Clients CATWOE elements, specifically US Government personnel and All Other staff that are reflected in these changes expressed above.

Personnel
Integration
Training
Policy
Themes
Structure
IO is not New
Overall Goals
Decision Making
Tactical vs Strategic

Clients
All Others
US Government

C	A	T	W	O	E
5	3	3	3	4	5
1	3	3	1	2	3
	2	3	1	1	3
	2	2	1	1	1
	2	1		1	1
	1	1			1
					1

Table 8.16 – Clients: Concepts vs. Reality

8.4.2   A Comparison of Actors CATWOE Elements

Clients were not the only CATWOE element affected by this series of decisions. What the demise of the United States Information Agency did for the United States government was to drastically alter the overall perception management capabilities of the State Department, which in return, dramatically affected the principal actors conducting this type of IO. A key component

of the Reform and Restructuring Act was to maintain a credible public diplomacy capability during the reorganisation plan by keeping the majority of the Foreign Service Officers intact as a new "cone" within the overall State Department organization. It was recognised that public diplomacy functioned more like a functional organisation than a regional bureau; therefore much emphasis was placed on building a new bureau or department with the enlarged State Department (John Dwyer, interview, 15 June 2001). This new division, which in reality was a briefed up version of the pre-consolidated "I" branch, would now house key components of the former United States Information Agency, notably the Education and Cultural Affairs as well as the International Information Programs branches plus the public affairs section. Probably the most important feature of the consolidation effort in fact was development of this public diplomacy "cone". Supported by senior level management, this new section was eventually to be led by the new Under Secretary of State for Public Diplomacy and Public Affairs, whose main goal was to give a larger focus on public diplomacy within the State Department. Feedback from the interviewees repeatedly stated that these changes at the United States Information Agency were very detrimental to the overall capability of the United States actors involved in IO to conduct both public diplomacy and perception management. These actors noted themselves that they were affected both at the tactical and strategic level with regard to these changes in IO personnel. This chart shows the key IO themes delineated earlier in Chapter Seven for the Actors CATWOE elements, specifically IO Personnel and the Tactical vs Strategic options, that are reflected in these changes expressed above.

| Integration |
| Training |
| Policy |
| Themes |
| Structure |
| IO is not New |
| Overall Goals |
| Decision Making |
| All Others |
| US Government |

| Actors |
| Personnel |
| Tactical vs Strategic |

C	A	T	W	O	E
5	3	3	3	4	5
1	3	3	1	2	3
	2	3	1	1	3
	2	2	1	1	1
	2	1		1	1
	1	1			1
					1

Table 8.17 – Actors: Concepts vs. Reality

8.4.3 A Comparison of Transformation CATWOE Elements

As noted in Chapter Two, much of the early Department of Defense IO policy was in fact very broad, with Joint Publication 3-13 in particular, trying to encompass a large section of

warfare areas when it was originally published in 1998. For at once IO was everything, and perhaps nothing, which in the end, meant that military planners and operators had difficulty translating this somewhat academic theory into Department of Defense policy and operational funding. This early Department of Defense policy, was often more hyperbole or over the top in its concepts, than that which is typically cited today. Part of this was due to the different weltanschauung of the project participants. Statements such as an electronic Pearl Harbor, Cyber Warfare, hackers taking down the Department of Defense infrastructure, and others like this, were thrown about with random during this period of 1989 - 2001. At the same time, there tended to be more focus centred on the incredible advances in computer technology and anything related to Cyber Warfare – whether it was computer network attack, exploitation, defense or critical infrastructure protection, and there were a number of other areas of operations in this arena, that all tended to be amplified in this early era. This dichotomy has been resolved with more recent instructions and mandates such as the IO Road Map (IORM – 2003) and the new Joint Publication 3-13 (2003) which possesses a much more restricted focus. These changes in IO can be seen in the fact that current policy is more restricted and concentrated within the arenas that traditionally the Department of Defense could control, such as electronic warfare, deception, psychological operations, etc. These newest IO policies have not tried to be everything to everybody, but instead these more recent policies have concentrated on warfare areas that could be organized, trained and equipped for in a more typical military sense. This chart shows the key IO themes delineated earlier in Chapter Seven for the Transformation CATWOE elements, specifically the IO Overall Goals and IO Integration that are reflected in these changes expressed above.

Training		Transformation			C	A	T	W	O	E
Policy		Overall Goals			5	3	3	3	4	5
Themes		Integration			1	3	3	1	2	3
Structure						2	3	1	1	3
IO is not New						2	2	1	1	1
Decision Making						2	1		1	1
All Others						1	1			1
US Government										1
Personnel										
Tactical vs Strategic										

Table 8.18 – Transformation: Concepts vs. Reality

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8.4.4   A Comparison of Weltanschauung CATWOE Elements

The differences between the desired IO structure and policy within the United States government are in some cases significant as this research indicates. Key themes throughout the data gathering and analysis phases featured the fact that in particular, one area of IO, namely perception management, could have the potential to effect the changes to the United States government as desired by the participants in this research project. That is attributed to a somewhat general belief among these personnel, that perception management is different than other portions of IO, in that it may be harder to control, because as the effort is trying to affect the mind, vice a pure technology fix. Many interviewees thought that if utilised correctly, the potential of perception management as an element of IO was in fact, much greater than other more publicised areas of IO, such as computer network operations. However while this potential IO element is still a desirable feature, it is probably not a feasible change for the federal bureaucracy, because for much of the general public, there is still a reticence toward this subject, with images of Goebbels or mind control. As alluded to earlier, many of the participants in this project stated that they believe that perception management is now much more effective as an element of IO – one that can reach out and touch the millions of people around the world who do not have connectivity of the wired world. This chart shows the key IO themes delineated earlier in Chapter Seven for the Weltanschauung CATWOE elements, specifically IO Policy and IO Training that are reflected in these changes expressed above.

Table 8.19 – Weltanschauung: Concepts vs. Reality

8.4.5   A Comparison of Owners CATWOE Elements

Likewise from an organisational aspect, the differences between the conceptual models and real world have been interesting as well. Massive changes such as the establishment of the

Department of Homeland Security which were scoffed at prior to the events of 9/11, have in fact occurred, while other suggested changes for the Department of Defense– that is, a Cyber Command, have still not been fully realised. In reality, the organisational landscape of the federal government is altered radically from a pre-September 11[th], 2001 time frame with the stand-up and evolution of commands such as the Joint Task Force Global Network Operations, Joint Information Operations Warfare Command, Department of Homeland Security, as well as numerous others which have been transformed as the full effects of IO upon the federal government are realized. Areas such as computer network defense and critical infrastructure protection have grown as well because more integrated, institutionalising policies and procedures, were becoming more effective in a defensive role. In essence, the organisational emphasis before 9/11 concentrated on building awareness of the threats from IO, while afterward the emphasis tends to concentrate more on integration and training, with specificity around the use of standards. For what exists today in the United States is a series of federated organisations, that support each other, with the current structure of IO agencies and commands that while better than before, is still not fully evolved as the complete nature of the threat and capability evolve. This can be seen for example in the constant change of reporting chains for the different military computer emergency response teams or the services IO and information warfare centres. This chart shows the key IO themes delineated earlier in Chapter Seven for the Owners CATWOE elements, specifically IO Structure and IO Decision Making that are reflected in these changes expressed above.

Themes		Owners		C	A	T	W	O	E
IO is not New		Structure		5	3	3	3	4	5
All Others		Decision Making		1	3	3	1	2	3
US Government					2	3	1	1	3
Personnel					2	2	1	1	1
Tactical vs Strategic					2	1		1	1
Overall Goals					1	1			1
Integration									1
Policy									
Training									
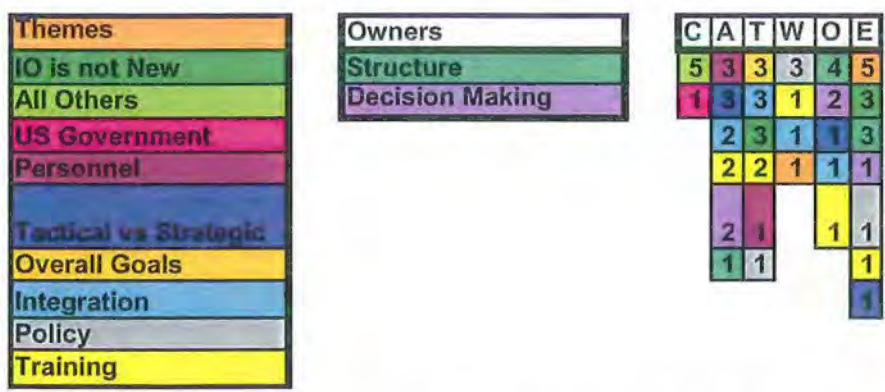
Table 8.20 - Owners: Concepts versus Reality

8.4.6　　　A Comparison of Environment CATWOE Elements

In reality, the actual ability of these cyber attacks to cripple the United States government and infrastructure is not as highly rated as originally envisioned. While these cyber assaults have undoubtedly hurt a variety of Department of Defense commands and federal agencies, they have not crippled the military and respective government organisations as predicted. A great example of this is the massive electrical grid failure of the north-eastern portion of the United States on 7 August 2003, which many people initially thought to be the result of a possible terrorist attack, was in fact this major critical infrastructure protection failure was simply that, an overwhelming loss of power in a single Canadian station, that cascaded throughout the power grid, until much of the United States were affected. It was not accomplished by any malignant worms or virus's, but instead by the over use of electricity on a hot summer day. The most interesting aspect from an IO perspective is that in fact, life still goes on, the world does not stop, and in this case, most people just adapted for a day or so until power was regained. It was not a failure of computer network defense or critical infrastructure protection, but instead a mechanical issue, one in which a greater emphasis on policy and training with respect to IO and the United States government may have helped to lessen the impact. This vignette points to another interesting fact about early IO theorists as compared to the current reality of IO policy within the United States government, that is, mainly that not many of these early theorists have survived the transformation of IO over the last 15 years. Some of these initial concepts were considered just too radical or revolutionary, where these early philosophers wanted to change everything. Unfortunately when change did not occur fast enough for them, a segment of this group left the academic area, yet if you examine IO closely, in reality change has indeed been very rapid, with less than 10 years having passed from the initial date when the seminal IO publication for the Department of Defense, namely Joint Publication 3-13 was issued (1998). The reality is in fact that change with respect to IO in the federal government has been steady and can be measured, how IO has altered the United States in this transformational environment. This chart shows the key IO themes delineated earlier in Chapter Seven for the Environment CATWOE elements, specifically IO Themes and the fact that IO is not New, that are reflected in these changes expressed above.

All Others
US Government
Personnel
Tactical vs Strategic
Overall Goals
Integration
Policy
Training
Structure
Decision Making

Environment
Themes
IO is not New

C	A	T	W	O	E
5	3	3	3	4	5
1	3	3	1	2	3
	2	3	1	1	3
	2	2	1	1	1
	2	1		1	1
	1	1			1
					1

Table 8.21 - Environment: Concepts versus Reality

The key to the synergy that was noted by the thesis participants was their willingness to tie together IO policy and organisation changes to big themes, to show success and changes, for what they wanted to happen and what really happened. These interviewees believed that perception management is the key, that there was a lack of progress because in essence the real issues is not involving zeros and ones but instead dealing with people's minds, which is always much more difficult to resolve. Perception management for future research therefore needs much work because it doesn't have the policy and organisational structure of the computer network defense and critical infrastructure protection portions of IO, because of the need for standards, which is a Department of Defense Instruction 8570 counterpart. Questions arise, such as where does perception management fit? Is it targeting, or effects-based operations? Or is it Public Affairs and Strategic Communications? Actually perception management issues could fit nearly anywhere, yet the lack of a sponsor or money, has stalled growth, for this IO area needs a home that is more interagency in nature, but where? Some academics acknowledged that computer network defense / critical infrastructure protection issues also cross multiple organisational boundaries, yet they seem to work well? Why is this - perhaps because they are defensive in nature. These same academics opined that perhaps perception management does not work so well across boundaries, maybe because it is different mediums, with different themes and goals, different views, missions and technologies, all of which are offensive and not defensive.

8.5 The Verification and Validation Process

The verification and validation process for the Conceptual Models was conducted in a two-part fashion. The first test was a series of follow-on questions that were sent to a smaller,

select group of the original project participants in February 2005. As mentioned earlier in this thesis, additional requests were forwarded to all 40 of the interviewees, in which the data was verified and validated, so that the author could ensure that he actually understood and correctly translated their viewpoints into the Root Definitions and Conceptual Models. This stage's ultimate goal was to most accurately ensure that the ideas or attributes that were part of the original representation or interviews would be adequately represented in this thesis. This effort was followed in July 2005, by a public verification and validation session at the 4th Annual European Conference on International Warfare at the University of Glamorgan in Wales. Using a third-party independent group of IO academics and professionals not associated with the original interviewees, additional analysis was conducted to also analyse the Conceptual Models. Together both of these verification and validation efforts were considered a very important part of the Soft System Methodology procedure, because not only does it ensure a direct link by the author to the theoretical construct, in addition, this approach also helped to ensure that the entire procedure is correct from a methodology aspect.

For as mentioned previously in Chapter Five, the author made a very conscious attempt to ensure the validity of the data throughout the interview process. Paper or electronic copies were kept and referred to throughout this project, and the information from those conversations ultimately found its way not only into the Root Definitions but to the Conceptual Models as well, as seen in the matching of CATWOE elements to Categories as shown in this Chapter. Dedicated efforts were made so that one could trace the data up and down the chain of evidence, and the reader can see multiple examples where the data in the Root Definitions and Conceptual Models can be traced directly to one or more thesis participants. Finally, it is in step six of the Soft System Methodology process, in the verification and validation phase of the methodology, where the data is reviewed a final time, where a series of recommendations were made that may ultimately begin to answer the research questions and hypothesis of this thesis. So it is obvious that the ability of this methodology to affect transformation depends of course on the accurate input from all participants in the process, which is where the need for the next section is derived in the form of constant feedback from the participants, to ensure the accuracy of the overall data.

8.5.1 Verification of the Original Data by the Project Interviewees

Of the 40 original interviewees, all received letters that were mailed out in the February 2005 timeframe. A sizeable number of the participants returned the additional survey forms, verifying and validating their comments. These IO subject matter experts reviewed the CATWOE data and agreed with the notes taken from the original interviews, that their comments had been correctly interpreted and translated it to a series of 63 independent CATWOE informational elements. Subsequent follow-up and attempts to obtain additional feedback resulted in more responses for a valid level of feedback from these respondents. In addition, on 13 July 2005, a two-hour discussion was lead by the author as part of the 4th Annual European Conference on Information Warfare at the University of Glamorgan, in Pontypridd, Wales. Co-hosted by Dr William Hutchinson of Edith Cowan University, a panel was seated which consisted of IO subject matter experts from three different countries. In addition, in the audience were over 40 delegates, speakers, conference leads and IO / IW specialists, from around the world, which generated a healthy debate as the two main Conceptual Models were displayed and reviewed. As part of the conference dialogue, a series of questions were posed from the chairman that then led a rather spirited discussion on the merits of these particular concepts. These questions were as follows:

- Which of these models includes your weltanschauung of the problem? Both, one or neither?
- Do the models portray feasible systems?
- Are the proposed systems desirable?
- Are the proposed systems viable?
- Do you think anything is missing or needs to be deleted?

Individual and detailed comments are included in this chapter, in the next few sections, as an overview of the conference validation process is conducted.

8.5.2 Conceptual Model 1.0

During this verification and validation phase, there was a lack of consensus on the validity of this model. Panellists thought that this model was in essence a top-down centralised approach, and many of the audience felt that the United States government is inherently fragmented, with little centralised control. Others felt the model was flawed because the United States IO should not be targeting the American population. For example, a question was asked on whether and how the domestic audience should be targeted. The United Kingdom central

department equivalent designs information campaigns that are sent throughout the government, yet in the United States, the Department of Defense is the only organisation that is officially authorised to conduct IO. Discussions ensued that alluded to the fact that more emphasis should be placed on a National Information Strategy to include centralised IO planning, which was a concern of this discussion, with questions arising as to where IO policy was coming from? Concerns over political or social engineering were raised, and the lack of feedback loops, either in the political or social realm was noted as well. Likewise, the fact that the major media is not considered a satisfactory feedback mechanism, led to calls for additional feedback loops to be added in addition to the mainstream media. A major discussion point in the first model revolved around the best approach, that is should this process be centralised or decentralised? Specifically, conference participants wondered which methodology could best be utilised as an objective to influence issues on a worldwide basis. From these talks at the IO conference, it appeared that a consensus arose from the panellists and audience that suggested the selection of both models, with an emphasis on planning for Model 1.0 and implementation for Model 2.0. In fact, one participant noted that you needed Model 2.0 to make sense of Model 1.0.

8.5.3 Conceptual Model 2.0

In this discussion, the methodology of centralised control and decentralised action was advocated. This approach is symptomatic of the approach of the military and was noted as a desirable blend of the two models, where implementation could be done by those at the frontlines. A desire for strengthening of the feedback was expressed, with a thought that perhaps a monitoring system could help. This group also recognised the need for a variety of worldviews, and in addition, they believed that the media needs to be from various sources and not just mainstream outlets.

A constant theme throughout the discussion at this conference was the need to emphasise key American values, which although somewhat viewed as a losing proposition to implement around the world, was still considered by many in the audience to be an action that should be implemented to support the conduct of IO. It was felt that these campaigns should be done where the people are, specifically that a narrow coordination system, needs a broader base and more inclusive system for strategic goals and objectives. While this was considered feasible, the comments from the symposium indicated that because of recent negative political input, that

maybe while initially desirable, a proposed system that had a broader economic base, with a long term view, was perhaps more viable. Likewise, the participants of the conference also suggested that the Rich Pictures should include allies and adversaries, and that these diagrams should have more political participants than the original IO models. Likewise, the seminar attendees recognised that the actions of the different United States organisations might be in conflict with one another, but overall they should attempt to encompass all US values. Problems with the Smith-Mundt Act indicated that these actions might be okay for internal American population but not perhaps for an external one. Heavy debate during the conference was also noted on the use of US values or perhaps UN values that may need to be replaced by human values instead. Overall, there was great discussion among the participants on these different Conceptual Models.

CM   1.1   Tactical vs Strategic
CM   1.2   Coordinating Systems between White House, DoD and DoS
CM   1.3   Investigate needs of stakeholders
CM   1.4   Set up an interagency IO campaign bureaucracy
CM   1.5   Execute IO campaigns
CM   1.6   Measure IO campaign's successes

                    CM 2.1
                    CM 2.2
          CM 2.5   CM 2.4
               CM 1.4
     CM 2.6
               CM 1.1   CM 1.3
               CM 1.2   CM 1.5
               CM 1.6   CM 2.3

CM   2.1   Accept any and all IO actions
CM   2.2   Develop a decentralised communications plan
CM   2.3   Utilise a wide variety of IO training courses
CM   2.4   Develop a broad IO policy and strategy
CM   2.5   Provide resources to foster innovation in IO

8.6   Key Themes from the Conceptual Models

In this next section, the data from the Rich Pictures, Root Definitions, Conceptual Models as well as the verification and validation sessions were all analysed to determine the key themes of this thesis. As noted earlier in this thesis, there were 40 different interviewees, who participated in a total of 54 sessions over a multi-year period. From these meetings, 63 CATWOE elements were identified, that were spread over the six different CATWOE categories, which were used to develop two Root Definitions and two Main Conceptual Models, with 12 sub-models as a result. All weltanschauungs and interests were recognised with very

divergent opinions expressed as part of the process, yet as part of this methodology, a number of key themes and interests emerged across the board as part of this process. Shown on the previous page is a t chart, which articulates where each of the 12 Sub-Conceptual Models fits in relation to each other, with respect to the interviewees, and their views on the progress across the United States government on the development of these particular areas of IO. As can be noticed, there were three models that were considered more developed, namely CM 1.3, 1.5 and 2.3 than the other nine. While these three models still need to progress further, by the direct questioning of the project participants, it was clear that in these areas, the state of IO within the United States government had progressed the most of any of the areas highlighted. Also, two models were noted as progressing at least with respect to the conduct of IO in the United States government. Specifically CM 2.6 and to a lesser extent CM 2.5 were the weakest issues that had yet to be resolved within the federal bureaucracy.

The data from the different sub-conceptual models can also be viewed as a coherent unit, when they are laid side by side together as shown below, in comparison with the CATWOE elements.

	1.1	1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3	2.4	2.5	2.6
C	green	yellow	blue	green	yellow	green	blue	green	green	yellow	yellow	yellow
A	green	yellow	green	green	green	green	green	green	green	yellow	yellow	yellow
T	yellow	green	green	green	yellow	green	green	green	green	yellow	blue	green
W	red	yellow	yellow	yellow	yellow	red	yellow	yellow	yellow	yellow	green	red
O	yellow	red	yellow	yellow	blue	yellow	yellow	yellow	blue	yellow	red	red
E	yellow	yellow	yellow	red	yellow	yellow	yellow	yellow	yellow	yellow	yellow	yellow

Table 8.22 – Comparing CM's to Reality

The horizontal axis depicts the 12 sub-Conceptual models, and the vertical axis shows the six CATWOE elements. In this analysis, it can be noticed there are five specific sub-issues (in blue) that were rated by the interviewees as far exceeding expectations for development within the United States government. Specifically these were:

- CM 1.3.1   Define key decision makers in the United States government
- CM 1.5.5   Execute IO campaigns 24/7 around the world
- CM 2.1.1   Use opinion polls to determine United States strategic goals
- CM 2.3.5   Ensure training is available in a number of different venues
- CM 2.5.3   Promulgate a series of articles and reports of how the art of warfare has changed

These data elements represent the five best areas of IO development that were by consensus of the interviewees conducting or in the process of being conducted at a superior level by the

federal bureaucracy. While there are no overriding linkages between these issues, it is interesting that the execution of IO campaigns, opinion polls and conducting IO training classes are all considered well in hand. These are often discrete tasks that do not require interagency coordination, funding, and can be conducted in relative isolation, which could be a reason that these issues tend to be more successful.

On the other hand, seven specific issues (as shown in red) , were cited as being significantly below expectations toward meeting the desires of the participants, as noted below:

- CM 1.1.4   Ensure strategic goals match interagency IO plans
- CM 1.2.5   Utilise same software and hardware to communicate, operate and plan
- CM 1.4.6   . Use IO standards recognised across United States government
- CM 1.6.4   A comprehensive and integrated set of measures of evaluate an IO Campaign
- CM 2.5.5   Develop reporting and accounting mechanisms to keep track of disparate IO activities
- CM 2.6.4   A comprehensive and decentralised set of standards that can be utilised by all IO activities
- CM 2.6.5   Analyse IO training and IO standards for commonality

When these seven issues are reviewed and analysed, a series of common themes can be noticed – namely the desire for standardisation, enterprise activities, integrated systems, similar hardware and software to conduct IO activities across all federal agencies. As expected, these tasks are going to be much harder to conduct successfully because they require interagency coordination and dedicated funding in addition to the political will in order to be successful.

Once the Conceptual Models were developed and analysed, the next step in the SSM was to compare and contrast them to the reality of how IO is conducted in the United States. For example, as continuously cited by the interviewees, the need for continued education and awareness efforts to key decision-makers in the United States government was required, to ensure that they understand the need for greater funding and integration of IO programs. The participants of this project also emphasised over and over again, the need for continuous training integrated with policy changes that are tied to the overall goals set out at the executive level. This focus on top-down, coordinated and centralised training process was also very prevalent among the interviewees. Likewise the data from virtually all of the participants also emphasised that across the spectrum, most participants and practitioners do not understand IO and that more training is needed. This near universal acknowledgement of the requirement for greater education in the IO field, was a very distinct thread, and it figured very prominently among the

participants in their responses. In addition, another common theme was the recognition that in order to change the way in which IO is conducted by the federal bureaucracy, that needed to affect or target the key decision-makers in the United States government.

Another key point from the analysis of the data, as pointed out by the participants was the need for greater integration among the government organisations. There was a very heavy emphasis on the need for a stronger State Department, with more trained officials in IO, as well as the increased integration of the White House into IO as part of a foreign policy. All of these themes come together to give a sense that while the Department of Defense may be playing a major role today with respect to the conduct of IO in the federal government, a large majority of the interviewees desire to bring back the capability to the State Department that was formerly resident in the United States Information Agency, and to integrate that more tightly via the interagency process with the White House. Finally, the interviewees also noted on a large number of occasions, that the current organisational structure for conducting IO in the United States was inadequate. Taken together, it can be seen that the key themes from the thesis participants concentrated a heavy emphasis on decision making skills, integration, the fact that IO is not new, an understanding of the environment, the importance of training and finally the need to develop coherent IO themes that are tied together. All of these deficiencies will be analysed in greater detail in this chapter as the changes in IO policy and organisational structure are compared across the United States with the specific recommendations suggested by the interviewees themselves in the next chapter.

8.7   Conclusion

In this section, a number of Conceptual Models were developed. These are considered as frameworks or reference points that the participants built into their recommendations depending on their particular weltanschauung, and while not based in reality, they do offer particular views on how in the interviewees minds, that these problems inherent with the conduct of IO in the United States can be mitigated. The two main Conceptual Models are widely divergent, offering very different solutions to solving these issues and it will be in the next chapter, utilising the verification and validation phase, where a comparison of these ideas with reality, will be conducted in order to understand how changes to the system could be utilised to enhance performance of this particular subject area.

Chapter 9 - Research Findings and Results: Applicability to Theory and Practice

In this section, a broad comparison will be conducted to evaluate the differences between rhetoric and reality, especially in the evaluation of the employment of IO across the federal government. The hypothesis in Chapter One stated that in the United States, a significant gap exists in regards to the conduct of IO. While this warfare area is a relative newly defined activity, it has the potential to transform the traditional uses of power as well as revolutionising the manner in which war, diplomacy, business and a number of other areas are conducted. All too often, hyperbole and unrealistic desires hamper actual progress of these concepts. The analysis of this gap between the proposed capabilities and the actual conduct of IO missions operations is the main thrust of the research. Specifically, as part of this thesis, a number of examples were surfaced during the interviews to validate the research hypothesis as well as to provide new information regarding the usefulness IO with respect to the United States government.

9.1   Introduction – Why does IO matter?

One of the key goals of this research is to evaluate the delta between stated goals and actual operations of IO across the United States federal government by using a qualitative interpretative approach through a systems process, specifically SSM. A total of 54 interviews were conducted over a five year period with 40 participants, to produce two very divergent Conceptual Models, which can be viewed as basically polar opposites of one another. This dichotomy was discussed in Chapter Eight, with one school of participants advocating a top-down enterprise wide approach as the best method to conduct IO. Many of the interviewees stridently disagreed, declaring that the only way to make any progress in this particular area was via a bottom-up or decentralised route. This latter idea became a key point of this research, primarily because a significant number of participants believed that they were simply echoing a more 'realistic' view (weltanschauung) or understanding of what makes the power of information so unique. For unlike the traditional loci of power (military, diplomacy and economic), all of whose instruments the government normally controls, with regard to the power

of information, this is simply not the case. Specifically the power of information lies with the individual, as do the controls and tools. This is an extremely radical and a salient feature of IO – namely that the government can no longer control information and instead this element of power has now been disseminated down to the masses. This inability to control this element of power, or to even understand that the government is no longer in control of information, is perhaps the most important point in this whole research. For it was repeatedly shown in the interviews responses that the enlightened government officials who understood this concept – namely that they could only influence the flow of information, and not dominate it - were the organisations in the federal bureaucracy that fared relatively well in this new environment. Also, it was demonstrated that those federal agencies and staff that refused to acknowledge the seismic shift that had occurred with regards to power and information – were ultimately the ones that repeatedly were unable to compete in this rapidly advancing field.

9.2   An Analysis of the Key Areas of Deficiencies from the Soft System Methodology CATWOE Elements, Root Definitions and Conceptual Models

It is these points, and their corollary functions, that are listed below, which will be discussed and analysed in great detail with respect to their impact on the federal bureaucracy, throughout this chapter. Specifically the fact that the power of information is distributed to the masses in a decentralised manner, which results in a loss of control to the central governmental organisations, combined with a much greater ease of entry and the great access to low cost IO tools, all of which have come together to radically change the power of information. Isolated as key areas in this thesis that were specifically derived from the SSM process, in addition there were seven specific Sub-Conceptual Model issues that were singled out in Chapter Eight as being particularly deficient in their current conduct of IO by the federal bureaucracy. In addition, a number of other areas of deficiency were noted, in both the Root Definitions (Chapter Seven) and Conceptual Models (Chapter Eight), specifically referring to areas where IO was not conducted as well as it could be the United States government. Taken together, all of these data points have been combined into four key themes as shown below, which are part of an overall analysis of the major deficiencies that succinctly articulate not only why the aforementioned delta in the performance of IO exists, but also what approaches could be useful in helping to formulate a way ahead for more successful efforts in the future. These issues are noted below,

and later in this chapter as well, where specific recommendations will be suggested, based on input from the interviewees, to improve the overall conduct of IO:

- Why is there no overall Strategic Theory in the United States for IO?
- Is IO really the best term to describe these activities?
- Why is Top-Down Approach to IO not working in the United States Government?
- Why is there no rhyme or reason to the IO training and education curricula?

These four critical areas will become the main focus of the final analysis of research in this chapter. For example, the first question, was derived from the deficiencies cited by the interviewees during this research process, who were concerned about the lack of overarching theoretical construct for IO. Some participants posited that if the Information Age is as truly as radical as many suggest, shouldn't there be a more vigorous academic debate with a number of theories vying for ascendancy in this new era. For to date, not one comprehensive theory on IO has fallen into general acceptance across the United States government, and while much strategic military IO policy and doctrine have been promulgated, it has mainly come from the Department of Defense, without corresponding similar policy being developed across the other interagency organisations. The second question arose from the same issue area, in that because the actual definition of IO is so broad and nebulous, as to be virtually all inclusive, in actuality it is still very much vague and barely understandable, with some research participants believing that harm is being imparted to IO as a concept by the broader academic, military and diplomatic community. Information is and always has been a somewhat a vague term, but in this new era it possesses a capability that is now considered crucial to the success of American national security, and so the proper definition and taxonomy are crucial to success. Another question came from that fact that in most cases, the actual conduct or approach of IO activities and campaigns, are normally performed at a more tactical level, or in a bottom-up fashion vice in a centralised or coordinated manner. However there are still many questions about the preferred method in which to most successfully utilise this element of power to the best extent by the United States government. Many of the interviewees noted this dichotomy in the fact that because IO crosses so many boundaries within the interagency processes, it is often very difficult to quantify exactly what constitutes an information campaign, and so success is often measured in different ways. Finally, the last question arose from the sheer number and diverse quality of IO training and education efforts across the federal bureaucracy which has led to much

inefficiency, which corresponds to the inability of the United States to maintain a profession corps of personnel. Specifically there is no coordination between these different schools of thought, no standards, certifications or linking mechanisms to show a synergy of effort. This lack of synchronisation across the different agencies, commands and organisations is severely hampering the overall ability of these groups to conduct IO. Thus to summarise, it is these four concepts, that when taken together, continue to highlight the delta between higher level strategy and operational reality as discussed in the hypothesis. The reasons for this gap have been examined in previous sections, and specific factors will be noted as to why the federal bureaucracy is unwilling or unable to make the transformational changes that are needed to best utilise information as an element of power. It is hoped that these conclusions and recommendations developed may be useful for future IO planners, as well as senior level decision makers in the United States government.

9.2.1 Why is there no overall Strategic Theory in the United States for IO?

The problem is that without a strategic theory or academic model to serve as a basis to explain the rise in power of information across the entire United States government that this lack of an overall theoretical construct ultimately endangers the overall stability of IO. Theory serves as a foundation - a basis on which to build a model of a complex subject such as IO so that it can be better understood. Yet with regard to this academic field, it appears that an overarching academic theoretical construct on the order of realism or international liberalism, which can explain IO with sufficient rigor, does not presently exist. That is not to say that there have not been influential academics that have set forth theories for discussion and review, such as *Soft Power* and *Noopolitik,* however to date, there has not been an overwhelming acceptance of either of these constructs (Nye, 2004; Arquilla and Ronfeldt, 1999). For example, as part of the literature review in Chapter Two, the arguments regarding *Soft Power* as set forth in the seminal book, *Power and Interdependence,* are described in detail (Keohane and Nye, 1989). These academics portray how the use of information is changing the idea of what is looked for in the power capabilities within the world political structure (Ibid, p. 23). Robert Nye also captured the excitement and the power inherent in information in other books as well such as *Bound to Lead,* and later amplified in other publications (Nye, 1990; Nye and Owens, 1996; Nye, 2004;

Nye, 2006). However none of these publications, set forth an overall academic theory that has been accepted for IO.

This research is really about is a focus power, and its transformation as the world enters the information age. It is in this chaotic early stage of a new era, when the disconnect between theory and reality is perhaps greatest, and in particular the inability to match a strategic theory to the changes in the power structure of the federal government are the most noticeable and very evident in the United States. So while *Soft Power* and *Noopolitik* may have struck a chord within the Department of Defense and a number of federal agencies at some point, to date, none of these attempts to develop an overall encompassing IO academic theory for what is happening with regard to information has been formally adopted across the United States as a whole. Even the authors of *Noopolitik* themselves - Arquilla and Ronfeldt (2007) note as much in a recap to their book *The Promise of Noopolitik*, published eight years after the original publication of their seminal book .Their initial enthusiasm for this theoretical construct has been dampened considerably not only be the events of 9/11, *Operation Enduring Freedom* and *Operation Iraqi Freedom*, but also by the way the Internet and the intellectual community have evolved in the last decade. The hopeful optimism of the 1990's with regard to the World Wide Web and the Internet, has instead turned in the last few years to the awful realisation that given the power of information, many individuals and groups have instead used this new technology to their advantage, whether for their political, financial or social gain (Ibid). Likewise Arquilla and Ronfeldt also admit in their postscript that the early promises of a global community are instead overwhelmed by the day-to-day events, which tend to mitigate the promise of revolutionary change. Although they still believe that *Noopolitik* is an idea for the future, and while they remain optimistic, they are also dismayed as well by a number of trends as shown below that have effectively mitigated much of the promised potential of this theoretical construct:

- Notions like *Noopolitik* are gaining credibility, but all too slowly
- *Soft Power* lies behind them all, but the concept needs further clarification
- Activist Non-Governmental Organizations representing global civil society are major practitioners of Noopolitik, but the most effective may be the global network of jihadist
- American public diplomacy would benefit from a course correction (Ibid)

So none of these concepts reviewed here can be properly considered a rigorous academic theory on IO, but instead more of a series of ideas around similar topics that are attempting to define this radical change in power. All of these arguments are very interesting, because as represented

in the interviewee data, changes are occurring slowly in the development of overall theoretical construct, definitions are not defined, and the federal government as a network is not that responsive as desired, specifically because the United States government public diplomacy efforts are considered insufficient. Perhaps an argument can be made that, in reality, a revolution in warfare is occurring with regard to IO, yet perhaps not at the rate initially desired - but instead at a more evolutionary pace.

In this vein, a thread has emerged from the participants' data that the reason that no overall IO theory has emerged, is because IO is a concept that supports so many different and disparate academic areas – which makes it difficult to unify a community around a single concept. The sheer diverseness of this transforming idea is easily seen at IO conferences where the hard and soft topics are instantly separated into separate streams and only rarely touching each other at the plenary sessions. Computer security, psychological operations, electronic warfare, public affairs and the other portions of IO by themselves are all incredibly complex areas, and to find a single comprehensive academic theory that can encompass the use of these warfare areas and the others that comprise IO, is incredibly difficult as can be imagined.

9.2.1.1 Does Military Doctrine equal IO Strategic Theory?

So while no overall academic theory has emerged to adequately explain the rising power of information, the same cannot be set for the avalanche of policy that has been promulgated by the Defense Department. Military doctrine is different than academic theory, but for the Department of Defense, it serves much the same purpose - mainly to ground the operational missions, in a series of overlapping policy and strategy. IO doctrine is no different, and was developed over a number of years as part of a maturation process of theory in the United States. The first of these policies, the Department of Defense Directive TS3600.1, was published in 1992, and kept at the Top Secret level throughout its use, due to the restrictive nature of its contents. So while this document was an attempt to start a dialogue on this new capability, namely Information Warfare within the Department of Defense, its security classification in general restrained a more rigorous doctrinal exchange. The need for a general theory or overall strategy to fit these revolutions in technology still existed, which prompted a new concept entitled Command and Control Warfare. Officially released as a Chairman of the Joint Chiefs of Staff Memorandum of Policy 30 *Command and Control Warfare* on 8 March 1993, this

document laid out for the first time in an unclassified format, the interaction of the previously mentioned disciplines such as electronic warfare, operations security, deception, and psychological operations, and was designed to give the American the war-fighters the advantage in this new information environment. Interestingly enough, Command and Control Warfare is a more restricted concept than Information Warfare, which means that the Department of Defense backed down from their initial broader strategy published in 1992 with regard to Information Warfare and instead issued a more constrained policy in 1993. This change centred on those core disciplines that the United States military were the most familiar with and had a greater history of use. This pattern was to be repeated again a decade later in 2003 with the publication of the *IO Road Map*.

IO doctrine also continued to be developed during this period, after the publication of the original Command and Control Warfare doctrine in 1993. There was a concerted push for declassification and better understanding of these concepts within the Defense Department, which resulted in the publication of Department of Defense Directive S3600.1, *Information Operations* on 9 December 1996. By downgrading this document to the Secret level, the Department of Defense opened IO to an even wider audience. In a related effort, the Defense Science Board also published its report on *Information Warfare - Defense* in November 1996. Together these documents attempted to clarify the differences between the older doctrine and introduced for the first time, the concept of computer network attack as an IO capability. There were still however questions regarding IO definitions and lexicon that would not be fully addressed until the release of the seminal publication, Joint Publication 3-13, *Joint Doctrine for Information Operations* on 9 October 1998. It is in this document, that for the first time, the military had released an unclassified document that widely disseminated the doctrinal principles involved in conducting IO. A key lesson learned from the release of this document was the realisation that both the White House and Department of Defense staff needed to understand that they needed better coordination. This is due to the fact that IO efforts are often conducted long before the traditional beginning of active hostilities, so the Pentagon may not always have the lead in every operation. This early and sustained interaction between federal agencies within the executive branch has also brought about a renewed emphasis on the IO organisational structure, and in fact an entire section of this thesis, in Chapter Two, is dedicated to the intricate and complicated relationships of the ever-evolving IO organisational structure.

In addition, following the release of Joint Publication 3-13 in 1998, new military doctrine continued to be published, with the *IO Road Map* released in a classified format in 2003. The publication of the Secretary of Defense's *IO Road Map* was five years after the release of the Joint Publication 3-13, and was considered a major step forward in the development of this warfare area within the Defense Department. This is because of the cumulative efforts during this period of 1998 – 2003 to update and change the military's strategy on IO based upon real-world operations and missions conducted by the services around the world. In doing so, the resulting document, the *IO Road Map,* concentrated more on the traditional aspects of IO including and in many regards was seen as a revalidation of the old concept of Command and Control Warfare. Subjects such as perception management, strategic communications, public diplomacy and influence campaigns were subsequently minimised in the *IO Road Map,* and instead this document developed a more tailored doctrine on IO. This latest policy in the form of the *IO Road Map* also chose to concentrate more on the 'traditional' aspects of IO including electronic warfare, psychological operations and computer network operations, and to not try to coordinate areas that the military did not control. This because the *IO Road Map* is an official Department of Defense publication, and it is now probably in most aspects, the best official document which broadly defines the American military strategic policy, since it concentrates much more of the 'traditional' aspects of IO. This document is also probably more representative of the manner in which the Department of Defense operates, thus in effect, the *IO Road Map* may have in fact, really 'narrowed' the gap, between strategic theory and tactical IO operations, by 'lowering' the expectations of higher level IO policy for the United States. Obviously this is a preliminary conclusion, but it will be interesting to see if over time, that the *IO Road Map* leads to a greater understanding by the United States government as a whole, about the overall power and capability of information as an element of power in this new era.

So while in one view, this new policy (the *IO Road Map*) could be considered a failure because its more narrow focus on the traditional areas of IO, it also once again highlights the huge mismatch between the strategic transformational promise of IO doctrine and the operational reality of how the Defense Department tactically conducts information activities and campaigns, for in reality the *IO Road Map* may very well be the best pragmatic solution for the conduct of IO by the United States military. The new Joint Doctrine for IO, Joint Publication 3-13, which was published in 2006, also built on the changes inherent in the *IO Road Map* and is another

major step forward, for it marked the growing comfort level with the embedded role of IO within basic military strategy and operations. The year 2006 may also come to be seen as the period when every aspect of IO in the national power structure moved forward. The information assurance community also saw the publication of the *National Infrastructure Protection Plan*, while the strategic communications arena saw the development of a long-awaited draft strategy, all of which when combined with the *IO Road Map* and the new Joint Publication 3-13, give the military approved doctrine on which to base future IO plans and operations. The real question of course is whether this growing set of policy and guidance documents and proliferation of IO related organizations, indicates a greater understanding by the United States government as a whole and its constituent elements about the power and capability of IO specifically and information in general as an element of power in this new era.

The end of 2006 also saw the emergence of additional pieces of strategic guidance and policy, one from the Department of Defense and one at the interagency level, which could show alignment with many of the major themes promulgated in this thesis. Specifically, in September 2006, the DoD released the *Quadrennial Defense Review Execution Roadmap for Strategic Communication*, which briefly summarised the problem facing the Defense Department in this operational area and laid out 55 tasks intended to remedy those problems. Strategic communication was defined earlier in the *IO Road Map* as "Focused US Government processes and efforts to understand and engage key audiences to create, strengthen or preserve conditions favourable to advance national interests and objectives through the use of coordinated information, themes, plans, programs, and actions synchronized with other elements of national power" (U.S. Department of Defense, 2003). This new approach and definition was significantly better than previous doctrine that emphasised the "transmission of themes and messages". The new view also recognised that if there is a hope to have any likelihood of positively influencing an audience, the first step must be listening to and understanding that audience, and thus hopefully avoiding the widespread (and sometimes accurate) global perception that the United States is so busy talking that it can't afford the time and effort to listen. Likewise the *IO Road Map* also stated that the United States military is not 'sufficiently organised, trained, or equipped' to engage in full-spectrum strategic communication and that 'changes in the global information environment' require a more coordinated and integrated effort. It emphasised the importance of 'credibility and trust', and noted that that all elements of the United States

Government share the responsibility for this (Ibid). For not only is effective strategic communications a government-wide responsibility, the Department of Defense is by no means the senior player in this effort, and in fact it must support the efforts of the State Department to integrate these efforts. Within the Department of Defense however, several key capabilities require improvement, most of which fall within the umbrella of IO in some way, including public affairs, psychological operations and defense support to public diplomacy. The Department of Defense also defined three key objectives in this *IO Road Map,* that if met would significantly improve its ability to conduct effective strategic communications. First, the Defense Department needed to institutionalise a process through which goals and objectives in this issue area which could be embedded within the development and execution of plans across all operational levels. Next, the doctrine needed to be developed to clearly define the roles, responsibilities and relationships for strategic communications and its constituent elements. Finally, and not surprisingly, all of this would not happen if not properly resourced, and the Military Departments (such as the Department of the Army, etc) and Combatant Commands (like the Central Command) must be provided the means to organise, train and equip capabilities for this (Quadrennial Defense Review, 25 September 2006).

9.2.1.2   Why is the State Department not issuing Strategic Guidance?

While the *Strategic Communications Roadmap* provided the Department of Defense with authoritative guidance with which to shape capabilities and operations, the interagency organisations had no such guidance, however there is hope, that eventually broader policy may eventually be adopted. In the second of the major IO federal policies that was released in 2006, the former Under Secretary of State for Public Diplomacy and Public Affairs, Karen Hughes, circulated for coordination a memo in October of that year entitled *U.S. National Strategy for Public Diplomacy and Strategic Communication,* under her hand as chair of the Presidential Coordinating Committee for Public Diplomacy and Strategic Communications. This was a much longer and more strategic document that set forth three strategic imperatives to guide American public diplomacy and strategic communications programs. The first of these initiatives was stressing the importance of presenting a positive vision of hope and opportunity, which would be rooted in basic American values. Next was the need to isolate and undermine violent extremists, while the final imperative was to nurture common interests and values while emphasising those

that cross cultures, borders, and creeds. The draft strategy then went on to identify critical influencers who are able to reach 'strategic audiences' and 'vulnerable populations'. The plan also emphasised the need for interagency coordination, because every arm of the United States Government has an urgent mission in this arena. Its 'action plan' was based on these three strategic imperatives, and nearly 40% of the entire document was devoted to specific and detailed plans and proposals. Finally, the draft strategy also examined several critical elements of communication, such as broadcasting or public opinion analysis, that would be necessary supports for a successful strategy, and it emphasised the need to be accountable for operations and to gauge whether any specific plan or program was being successful (*U.S. National Strategy for Public Diplomacy and Strategic Communication*, 18 October 2006).

This plan was broad and inclusive, a major step forward that went well beyond anything that had existed previously. One major improvement over earlier efforts was that the Presidential Coordinating Committee charged with developing this strategy was not 'co-chaired' as in previous incarnations and thus did not suffer from divided leadership. Instead this interagency group was instead led by only one person - indeed the Presidential Coordinating Committee was led by one of the most influential members of the Bush Administration, namely Karen Hughes. Her unique power stemmed from her key relationship with the President and her position as one of his key advisors, so that her guidance always had an *'ex cathedra'* aspect to it. It was thought at the time, that this initiative provided a unique 'window of opportunity' in which perhaps real progress could be made before the pressures of the pending 2008 elections and an administration changeover in 2009, regardless of which party was victorious, and would bring efforts back from full speed. There were however weaknesses in the plan, and the first of these were its insistent focus on the Moslem/Islamic world. While that was quite normal in one regard, especially in its connection to the 'Global War on Terror', in other ways that emphasis was unfortunate, because there were other areas of the world, Latin America, Asia, sub-Saharan Africa, to name just three, in which America needs to be fully engaged in support of vital national interests. Another area in which the plan was even more inadequate was the almost perfunctory section on resources. Instead of a powerful and compelling call for greatly increased resources with which to wage the 'war of ideas', and a detailed explanation of how those resources would enable the United States to advance its interests, the strategy instead only provided a weak one-liner about the need for "increased support". This is a fatal flaw, especially

in a fiscal environment in which every dollar has several worthwhile programs calling for it. Such a weak request has virtually no chance of actually gaining the needed resources, which to date has unfortunately spelled a quick demise for this noble effort.

To summarise, there are many reasons why there is no strategic academic theory on IO that has been developed over the last 15 years, all of which can probably be categorised into that fact that most of the intellectual thinking on this topic area has resided within the Department of Defense. While there have been books written and articles published from the academic community, in general this issue area has not fully matured into its own discipline, which has precluded intense focus on IO as a theoretical construct.

9.2.2 Is Information Operations the best term?

Not really. Information Operations is only the latest in a series of Department of Defense names for this concept which has existed for over 30 years, and it is too limiting because it tends to be only associated with the military vice the entire United States government. Variously called Information Operations, Information Warfare, Command and Control Warfare, Public Diplomacy, International Public Information, Psychological Operations, Perception Management, Net Centric Warfare, NetWar, Soft Power, Noopolitik and Strategic Communications, all of these terms are inadequate to explain the true breadth and depth of transformation of power across the international community. The capabilities such as deception, psychological operations and electronic warfare, which can all shape and influence the information environment, have all existed as part of the military repertoire for a long time, but the umbrella term of IO is a relatively recent doctrinal definition, with much of the critical thinking beginning in the mid-1970s. The first known use of the term 'Information Warfare' was in a brief delivered by Dr Tom Rona, an analyst at Boeing Aircraft Corporation, for Andrew Marshall, a senior Defense Department official in May 1976. Much of this concern came from United States military analysts and planners who were looking at intelligence estimates of the size of the former Soviet Union's military. From 1975-85, the former Union of Soviet Socialist's Republic often outnumbered United States conventional forces 3:1, and, while the United States may have had a qualitative advantage, there are still times when only sheer numbers count. In the Pentagon, military strategists were looking for methods to cut down on the former Soviet Union's advantage by attempting to counter traditional strengths with

asymmetric non-nuclear attacks. In addition, these analysts noted that the former Soviet Union relied heavily on electronic warfare or *radioelectrionyaborba* (Radio Electronic Combat) in much of its doctrine, and there was a feeling that the United States must combat this threat as well (Munro, 1991). It was also in this era, that some of the early ideas about IO and effects-based planning began to evolve. Likewise, the demise of the Soviet threat to the United States in 1989 and the shift from bipolar to multi-polar political scenarios also seriously affected American force structure and military doctrine. This combined with the huge technological changes that have evolved over the last 20 years in computers, software, telecommunications, networks, etc. have all revolutionised the way the United States conducts military operations, and there has been a marked concentration on understanding the role of information in conflict. It was becoming increasing clear during the late 1980s and early 1990s to the war-fighters and policy makers in the Pentagon that the side that controlled and retained the ability to conduct information campaigns accurately as well as to manipulate, use and disseminate information was going to be victorious. Strategic planners at the Joint Chiefs of Staff began to think and write new strategy, most of which was highly classified, that would utilise information as a war-fighting tool. The evolution of these different IO terms is laid out in the next few sections.

9.2.2.1 Problems with the use of IO as a term

To begin with, the very term of IO was a compromise from Information Warfare. The military understood Information Warfare to an extent, but just as quickly as that term started gaining acceptance over Command and Control Warfare in the armed forces during the 1990s, a newer term in the form of IO was foisted on the Department of Defense in 1998. The reason for this was of course to broaden acceptance of this new form of warfare across the federal government, where many agencies were anaemic to the term 'warfare' itself, and so new language was needed which would 'soften' and allow this warfare area to be utilised across the different federal interagency organisations. And so IO was adopted as a neutral label, one that could be used by all government agencies in the United States involved in these types of activities. The term IO ran into trouble right away, because it included the older Command and Control Warfare areas such as operations security, psychological operations and electronic warfare with corollary functions such as civil and public affairs. It is widely known that the psychological operations and public affairs communities are very separate and distinct areas,

with disparate missions, which could make it unethical in many personnel's mind of working together. Huge discussions and debates were conducted on how to separate these two activities in an IO cell, and options including 'fire-walling' the respective groups, etc. No matter what was suggested, the idea that any public affairs official would ever be involved in any operations that conduct psychological operations, influence operations or perception management type activities is anti-ethical to their whole mission which in many cases spelled disaster from the beginning. A great example of this was mentioned earlier in this thesis with the demise of the Office of Strategic Influence in February 2002, after the senior Department of Defense Public Affairs officer, Tori Clarke torpedoed the entire concept of this new organisation. It is exactly this area of IO, namely perception management or the newest term of strategic communications, which promises the most changes with regard to the power of information. The ability to use the latest technology to influence people around the world is the form and articulation of power and informational capabilities that grabs the attention of many proponents of IO. So the correct label is very important, as this new set of tools is the crux of the potential power of IO.

However that is not always possible. Many military theorists contend that information warfare is what you do when IO fails. That is one difference, but there are also subtleties between these two warfare areas as well. The main distinction between these two doctrinal terms is that information warfare contains six elements and is mostly involved with the conduct of operations during actual combat, while IO on the other hand, includes these six capabilities and two sometimes integrated or related activities (*Joint Publication 3-13*, 1998, p. I-9). Therefore IO is much broader and comprehensive than information warfare, and is intended to be conducted as a strategic campaign throughout the full spectrum of conflict from peace to war and back to peace. It is in only IO that the full integration across government agencies and with private industry can occur. Thus a common complaint about IO is that because its definition is so broad, at once it is everything and also nothing. The elements, capabilities and related activities of information warfare and IO are separate and discrete warfare elements. Most have very old traditions and long-standing histories that do not necessarily mean that every action conducted in these areas is always associated with IO. A Swedish information warfare academic -relates, "While the activities gathered under the umbrella concept of IO are not new in themselves, the attempt to coordinate and integrate them into an overall strategy which utilizes the rapid advances in information and communications technology…" (Riegert, 2002, p. 79).

For example, there are elements of destruction that are not part of an IO campaign, likewise not every public affairs activity has to be tied to information operations. In reality, if done correctly, all elements and their components of national power can be integrated into a satisfactorily planned, designed and executed strategy to allow the United States to attain its national security goals in the new millennium.

9.2.2.2 The Need for Taxonomy

Labels are incredibly important. Portions of IO such as psychological operations and electronic warfare are distinctly military terms, yet functions very similar to these tasks such diplomatic information activities or worldwide communications efforts such as Radio SAWA are conducted routinely by other agencies in the United States. Thus we see the difficulties in determining what exactly IO means and why changing labels have occurred so much in these areas over the last two decades. For example, the term Command and Control Warfare, was routinely accepted by the Department of Defense in the late 1980s and early 1990s. The focus was on nodes and connections, with an emphasis on physical items such as network operations centres, transformers, etc. This was a primary mission that the Department of Defense could and did excel in this warfare era; witness the triumph of the First Gulf War and the informational components. The evolution to a warfare area beyond the limitations of the command and control warfare label continues to vex the United States 15 years after the publication of the original Department of Defense 3600 series in 1993. That is because, the moment you move the military beyond the traditional areas of operations security, electronic warfare, psychological operations, etc and move to terms or mission areas that include components such as influence operations or perception management – that is when the Defense Department begins to have difficulties with the theoretical aspects of IO. The broadening of Command and Control Warfare to Information Warfare was the next logical step in the mid-1990s as the Revolution in Military Affairs was the rage, and policy was formulated which ultimately resulted in the seminal doctrinal statement of Joint Publication 3-13, *Information Operations*, in October 1998. This was supposed to be the pre-eminent manual on how to conduct missions in this new era, where information reigned supreme. The problem was that this publication was not a 'how to' manual, but instead an attempt to redefine how the military conducted operations, a reach for a 'new' way of warfare. And with all things revolutionary, it was a bridge too far, for not only did the various military

services have trouble trying to implement this new military strategy, but also of organising, training and equipping to it as well. Funding was also crucial, because it was very hard to fund these nebulous concepts. All of these issues led to a realisation that the original Joint Publication 3-13 was an over reach in terms of military theory, and since that time, there has been a concerted effort by the Department of Defense to 'reign' in IO policy and doctrine to mission areas that are more traditionally focused on the respective armed services. Combine these ideas, with the lack of a proper definition and taxonomy for IO, one's that centre more around the information warfare concepts that are executable by the respective federal agencies, and runs into problems implementing IO across the United States government, and the realisation by many interviewees, that the future of this transformational capability may never be fully realised. Therefore what is truly needed is a comprehensive set of taxonomies, with an accompanying ontology that is recognised by all practitioners of IO.

9.2.3   Why is Top-Down Approach to IO not working in the United States Government?

For while these incredible changes in technology are drastically changing the role of information with respect to power, and many parts of the military and business communities have embraced these changes, it still appears based on the interviews and literature reviews that within the United States the executive branches and the State Department are still very slow to understand the power inherent in information. The lack of a set of coherent theories or overarching doctrine is creating a gap between the new changes that are occurring with the tactical agencies, while there is still a need for a basic understanding at a more strategic level. The fundamental fact is that the growth of information technology has accelerated the process of transferring power down and away from a centralised authority, and into the lower levels of an organisation. This decentralisation of power, command and control as well as decision-making authority can be seen in many instances in new Department of Defense weapon systems such as Future Combat System, where every Army infantryman will have more information at their disposal than could have been fathomed a mere decade or two ago. The same can be seen in the economic globalisation efforts, where the market is truly worldwide, and no longer is a business confined to a local geographic area. The internet and World Wide Web have forever broken

down these barriers to communication and information transfer, bringing the power to groups that formerly did not have access to these capabilities.

9.2.3.1 Is the Revolution in Military Affairs / Revolution in Diplomatic Affairs an answer?

Is the Revolution in Military Affairs still a viable concept? How about the Revolution in Diplomatic Affairs? Is the United States government really ready to radical change its organisational structure to conduct operations in the Information Age? The answer to all of these questions is probably not, for while everyone understands that nation-state to nation-state communication will never be limited as in previous eras to pin-striped diplomats, cables, message traffic or official communiqués, it is not apparent from the data gained in this research that the radical leap needed to transform the Department of Defense or State Department is happening very quickly, especially in the area of strategic communications or perception management. Unfortunately it appears that the United States has been very slow to take advantages of this new technology and instead is relying on the tried and true communication apparatus that has been the backbone of public diplomacy for the last 60 years. The demise of the United States Information Agency and the incredible slowness of the States Department to properly absorb the public diplomacy community, has also contributed immensely to this incredible gap in the strategic capability of the American government to adequately project its message as well attempt to influence people around the world. The Clinton and second Bush Administration are to blame for this gap, because while they have repeatedly 'talked' the talk, about the need for a 'beefed up' public diplomacy capability for the United States, their actions (or inactions in the case of lack of funding), have contributed significantly to the drastic decline in the ability for the State Department to 'project' its message. In this gap, the National Security Council has 'tried' to do public diplomacy or strategic communications, and has finally given up after the retirement of their main proponent in 2005, and in fact are quoted as stating that is no longer a capability of that office anymore (Waller, 2007a, p. 389).

The diplomatic corps is also greatly at fault as well. It was a resentment by the traditional segment of this federal agency toward the independence of the United States Information Agency that allowed it to be 'absorbed' in 1999, and while there is 'lip-service' to the development of a public diplomacy core in the 'I' group, in reality in discussions with a number

of Department of Defense professionals, it rapidly becomes apparent, that public diplomacy is not considered a fast-track to promotion. This apathetic attitude or indifference is telling in the staffing of public diplomacy positions, the funding of public diplomacy initiatives, and even in the leadership of public diplomacy within the State Department. The inability of the National Security Council and Department of State to jointly lead a Presidential Coordinating Committee in this very area since 9/11 is also very telling of the importance that these organisations put into this capability. In addition, the protracted search for a leader of public diplomacy in the State Department, in the form of the Under Secretary of Public Diplomacy and Public Affairs is also very telling as well. First it was Charlotte Beers, a Texas advertising executive, who lasted less than 18 months, followed by rumours of Margaret Tutweiller, a Bush Administration speech writer, followed by a gap of two years with an acting official until the long heralded Karen Hughes, a President Bush confidante and campaign manager took over the position in 2005 amid much fanfare and hype. However only two years later she had left Washington for good, with some changes made, but no continuity in the role. It is the belief of many of the interviewees in this thesis, that the lack of a long term, dedicated IO professional to coordinate this very important role has damaged the ability of the federal government immensely in this area.

9.2.3.2 Why is the State Department failing in its Public Diplomacy Role?

This is mainly because the public diplomacy community is still embracing antiquated tools to transmit their message. Little effort is made comparatively to understand and use new avenues such as blogs, websites, internet chat rooms, or instant messaging to pass information to all segments of society. There are a variety of reasons for this, but one could be the loss of control. The State Department has traditional preferred to centralise the 'message' that it promulgates to other nations, and thus the use of media that are under their centralised control, such as radio, TV shows, embassy visits, etc. The problem of course is that these methods while laudable are not enough in today's technically savvy world. Adversaries and enemies of America are filling these other mediums with hatred, lies and distortions of the truth that only serve to hurt the United States. A vacuum is abhorrent to nature and once discovered will be filled. That is exactly what is happening today with the effort by the American federal agencies to 'spread' the word. Because the federal agencies are fighting the fight with one hand tied behind their back due to the unwillingness to use the latest technological assets and archaic laws

(the Smith-Mundt Act for example), the United States is losing in this war of ideas. And it is a war, as stated by many IO experts (Waller, 2007b). Our enemies understand that they cannot defeat the United States on a militarily or economic basis, but they can hobble this superpower with a well-run information campaign. It was done before in Vietnam, and many of these same tactics are being utilised again, albeit this time with newer technology and communication paths.

Of course, it must be asked why is it that the Department of Defense can trust the latest technology with its youngest recruits by the United States government and yet in particular the State Department, is unwilling to trust the citizens of this great nation into spreading the words and ideas of freedom and democracy. The awareness level of the intended recipients of these messages from the American sources are often more savvy than assumed and nuances be better understood than thought. That is the key to success in this war of words and the United States must use all sources at its disposal to promulgate the message about freedom and democracy, about the core values that make up America, and it is then and only then, that the tide will turn in this battle, which currently it appears that the coalition is losing. We talk about a Revolution in Military Affairs and a Revolution in Diplomatic Affairs – which are really the use of information to transform these traditional forms of power - we talk about globalisation, which is really the use of information to transform economic power, and yet there is no talk about Revolution in Information Affairs, which of course asks the question - why not? Perhaps it is because information is still not viewed as a source of power but instead only as an enabler – that is, it is technology, specifically information technology that is seen as driving the Revolution in Military Affairs, the Revolution in Diplomatic Affairs and the globalisation transformations. Yet is it also not information and the flow of information as well?

9.2.4 Why is there no rhyme or reason to the IO Training and Education curricula?

When evaluating the sheer multitude of IO courses by the United States government, it must be realised that the major problem is that none of these courses have any standards or common learning objectives upon which to base their curriculum. These different classes are normally based on different theories (service and agency), different skill levels of users (beginners to advanced), different ranks or grades of the audience (enlisted to flag/general officer), as well as different foci (strategic, operational and tactical). So it should not be

surprising that there are over 70 IO courses in existence today, taught by a variety of United States government organisations and commands, all of which have little to no interaction or integration. For example, IO training cannot be obtained in one service and then serve in a joint organisation without needing additional specialised training. Additionally, there are no common denominators or goals that translate well across the American armed forces with regard to IO training and educational requirements. These and other standardisation issues have thwarted the United States government and academia in moving toward the development of curricula emphasising the power of information in general and IO in particular.

9.2.4.1 Can Lessons be learned from the Information Assurance Community?

The participants of this project have noted this dichotomy between the Information Assurance and IO communities, and have presented this subject a number of times in conferences around the world as well published their findings in a number of scholarly articles. One good example of this was a sponsored collaborative discussion session among British, American and Australian academics and military officers at the 2nd Annual IO Conference hosted in London (July 2003). During this daylong session, a tremendous amount of energy and analysis was devoted towards finding a solution to help develop better access to IO training and education capabilities across the three nations. The figure below, is a synopsis of those efforts, and reiterates what the participants of this project have been advocating for a long time, mainly that any curriculum developed must be based on open and accessible standards and that a web or internet based set of courseware was the best answer to deliver content globally.

IO Education and Training Goals	Means
Delivery of training must be cheap and fast	Internet
Access must be worldwide and standard	Portal
Clear, concise, authoritative and readable	Textbook
Information Battlespace	COP
Planning Tool/Checklist	Excell App
Study Real World Operations	Case Studies
Common IO Definition/Language	Taxonomy
Change Perceptions and generate interest	Exercises
Parallel Play/Multiple Courses	Interfaces
Worldwide IO Game	Everquest?
Standard IO Training Material	CD-ROMs
Training must be standardized	Qualifications
Red Teaming must be incorporated	VA Teams

Table 9.1 – Options for Improving IO Training and Education Goals

While this matrix is not the sole answer to the problem, the authors believe that it may help to act as a checklist or guide to focus the attention on possible solutions to these IO education and training goals. However, there is still a gap between the large number of military oriented IO courses and the study of this academic concentration by civilian universities.

9.2.4.2   Issues that still exist with developing commonality with respect to the IO Training and Education Situation

The dichotomy between increased emphasis by the American military on the conduct of IO and the lack of corresponding academic programs within academia is not unprecedented. Early work at National Information Assurance Training and Education Centre to develop a set of standards, led to several industry professional standards, National Institute of Standards publication 800-16 and the Committee for National Security Systems series of publications. These standards, developed by the National Security Agency, are now widely recognised throughout the Department of Defense and interagency as the de facto baseline of tasks for Information Assurance across the federal bureaucracy. In addition, the Committee for National Security Systems series has become widely used in academia, through National Security Agency sponsored Information Assurance programs and curriculum. Together these groups are a hub of Information Assurance activity in which a tremendous amount of activity has occurred in the last decade. An entire cadre of Information Assurance professionals has been trained and now occupy key and influential positions within the federal government as a result of the education that they received from these programs. The key component of this success has proven to be the development of the Committee for National Security Systems standards, which are grouped into six categories (4011 to 4016). Updated on a regular basis, these serve as a baseline for all the certifications and academic programs sponsored by the National Security Agency and National Information Assurance Training and Education Program as well as the Information Assurance academic community in general.

If the problem of developing academic interest in IO is to be solved, several steps are required. They can be modelled on the steps originally recommended for the Information Assurance discipline, over a decade ago. The first is to build personnel capacity, for if IO is to become a civilian academic field, there must be sufficient faculty. The main problem as noted in this research is that are very few college professors are trained in IO in the United States.

Currently, the computer science, information assurance, or information systems programs in the United States are able to adequately respond to the increased demand for IO courses. For the long-term it will be necessary to increase faculty in all areas of information technology, not just Information Assurance and IO. Current IO practitioners should be encouraged to enter the professoriate by creating academic positions for professionally qualified individuals. In the United States - and this is key - there are currently no comprehensive IO curricula or graduate programs in academia. Nascent master's curricula are underway at the National Defense University as well as Norwich University, but more institutes and programs are needed to help close this gap, if significant progress is to be made. Likewise, the role of industry also cannot be overlooked in making faculty retention and development easier for the IO initiative. It is also imperative to attract quality students to programs producing IO specialists. As demonstrated in various information assurance initiatives, an undergraduate scholarship program has the largest potential influence to solve the short-term problem. In the absence of some form of graduate stipend program, there will probably still continued to be a dearth of individuals to become the next generation professoriate and to fill governmental and industrial needs. Production of master's and doctoral students is also essential. Finally traditional undergraduate and graduate programs alone cannot meet the need for information operations professionals, and any comprehensive solution must include ongoing professional education for the existing workforce.

9.3   Key Findings of this Thesis

Information has always been an element of power, but is often seen as an enabler or supporting component, and not as the decisive factor in conducting operations. The very nature of modern day operations, with its persuasive and never ending 24 / 7 global media coverage, has shown over and over the need to utilise all the tools or elements of power at one's disposal. Information is a key component of any sort of influence type of operations, and its effectiveness has been demonstrated repeatedly, especially over the last two decades, with the rise in technological capabilities. However the very factors that make information useful as an element of power, are also adding to the difficulties for nation-states and in this case, America, to conduct information campaigns, or IO, on a successful basis. The shifting of power away from a centralised authority, the loss of control from the federal bureaucracy and the low cost as well as ease of entry, into this domain, all have combined together to signal a revolutionary and radical

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shift in the manner that information is utilised around the world. Therefore it is not surprising that non-governmental organisations, non-state actors, corporations, terrorists and individuals have all benefited from this shift in power, due to the advent of new information technology capabilities.

It is also not surprising that the federal bureaucracy of the United States is struggling to come to grips with the ramification of these changes. Specifically the flow, content and communication paths of information, as well as the loss of control have all radically altered the method in which the administration and other branches of the federal government interact with their counterparts around the world. Combined with the heightened expectations of the increased capabilities inherent in IO, the lack of a coherent theoretical construct, definition or taxonomy, and a virtual smorgasbord of training classes, with varying curriculum and content, none of which are integrated or coordinated, have all combined together to spell disaster for the success of IO in the United States. Too much is expected, and too much has been promised, and with no radical changes in funding across the federal agencies, progress has overall been disappointing. Many of the same organisations that were doing Command and Control Warfare over 15 years ago, are still the key agencies conducting IO, just renamed and slightly expanded, but with no true increase in scope and capability. Therefore it is not surprising that in many aspects, the Defense Department is moving backwards with regard to strategy, capabilities and scope. The inability of the military forces to organise, train and equip to the nebulous original Joint Publication 3-13 directive of 1998, have instead pushed the Defense Department to revert back to an instruction, in the form of the *IO Road Map* in 2003, that more closely resembles the original Command and Control Warfare doctrine of 10 years earlier. This was because it is precisely these latter capabilities incorporated in electronic warfare, deception, operations security, psychological operations and physical destruction, are all ones that the military has total control over, as opposed to more nebulous related IO warfare areas such as perception management, strategic communications, etc. This 'boxing' in of the Department of Defense, is actually a sound strategy, because it concentrates success on these issues, and to what units and personnel are under its control. Taken together then, the specific key findings that align with this assessment include the following areas:

- IO needs to be limited in its scope to be effective – a lessening of expectations
- Only the Department of Defense will continue to have IO Policy and Doctrine

- IO Training / Education are useless unless tied to taxonomy and standards
- IO Metrics are key to future success and acceptance

All of these issues will be addressed below, as part of an overall plan to provide a way forward with regard to the more efficient conduct of IO by the United States government.

9.4 Suggestions for Improvement Based on the Soft System Methodology and Literature Review

From this analysis, a number of specific recommendations were made that were both feasible and desirable from the data collected. These suggestions are listed over the next few pages and represent the collection of several years of interviews, conferences and workshops, in an attempt to ensure that the specific recommendations of this research met all of the criteria of the participants. For as many academics have tried to articulate, this new emphasis on the use of information, is an attempt by the United States to develop a strategy to better control all of its power capabilities, in order to affect the many issues that it must deal with in the post Cold War era. Federal officials in the United States have come to the realisation that militarily, the government could not solve all of its problems through kinetic means. IO is therefore an attempt to bring these different facets of power to bear on an adversary, whether it is a nation-state, terrorist group or individual. Thus, the real key to making the management of information effective is to ensure that the horizontal integration and coordination of the interagency organisations are conducted early on, that is in the peacetime environment vice waiting until hostilities start. As mentioned earlier, IO can be a very effective tool for shaping the environment in the pre-hostilities phase, so that the actual need for hostilities may actually be avoided or minimised. So while the publication of Joint Publication 3-13 was lauded in the late 1990s with its attempt to define everything as IO, in fact it's very overstretch could actually be responsible for the lack of understanding and the eventual withdrawal of this strategy into a more manageable set of IO doctrine five years later with the promulgation of the *IO Road Map*.

This latter argument is a key point of this thesis – namely that in trying to be everything for everybody, IO as defined in the original Joint Publication 3-13, has in effect became nothing. Over and over, participants emphasised that in order to be successful, IO needs to be more strictly defined and standardised, with a series of overarching policy, taxonomy, certification and methodologies that are recognised and understood by all practitioners. In order to do this, many

interviews recommended that a limiting of the IO definition must occur, one in which a more realistic view must occur, in which goals and capabilities are attainable. It was stated repeatedly by the participants in this research project, that a nebulous set of policies and the desire to include all warfare areas into IO, have actually hobbled the ability of the United States government to organise, train and equip its forces in a practical manner to conduct these operations.

9.4.1   Suggestions and a Plan to Develop an Overarching IO Theory

IO is not a part of the liberalism or realism theoretical academic theories. It is something that is in between, as noted in Chapter Two, because it is much more oriented around power. It has its own language such as virus's or worms, that is somewhat medical in nature. It also can be very technical, especially when concerned with information assurance or cyber security issues. This dichotomy of needs and requirements has hampered the ability to develop an overarching IO theoretical construct, and yet many comments from this research project interviewees, centred on the desire for more progress to occur, especially in the areas of IO standards, training, and integration. The use of IO policy and themes are very different across United States government, particularly in the perception management arena, while computer network defense and critical infrastructure protection are considered more uniform in nature. Concerns were raised in this thesis about why is IO so easy to visualise and so hard to accomplish? It is the 'softer areas' of IO, as referenced by the participants, mainly the concepts that involved efforts to affect the mind, in the form of perception management and strategic communications, that the United States was having the most difficulty in conducting operations. These skill sets are considered an art, with many of the interviewees believing that the long view needs top be taken for success in this area, and yet these same participants also noted that in the United States, federal organisations often wanted to rely on technology to answer the questions, to overwhelm the adversary quickly. These interviewees commented often sadly, that in reality, the fast results are not successful, and instead history should be explored to understand that quick answers are not the norm and instead understanding of how the military actors in the past have really succeeded should be obtained. For example, was the bombing really effective in Kosovo in 1999, or was the North Atlantic Treaty Organisation coalition just making rubble bounce, and not really understanding how to really affect the hearts and minds of a populace? For many of

the research interviewees, IO is not that radical, and in fact, some that instead it should just really be entitled as "Operations in the Information Age". But that idea doesn't solve the need for an overarching construct, and developing new academic theory often hinges on radical concepts such as those espoused in the *Third Wave* or *Noopolitik* (Toffler, 1984; Arquilla and Rand, 1999). These concepts along with *Soft Power* are perhaps the best examples of academics that have successfully crossed the theoretical construct boundary into Department of Defense policy (Nye, 1990).

So in this aspect, there is a huge dichotomy in the goals of these two policy attempts at developing strategic IO academic theory, with the more pragmatic Department of Defense *(The IO Road Map)* and the State Department *(Defense Science Board Report on Strategic Communications)*, documents. But in another view, these mandates are also entirely representative of the way in which IO is conducted today throughout the federal bureaucracy. Because the *IO Road Map* has a much narrower focus than the mandate from the Defense Science Board, it tends to highlight the huge mismatch between the strategic transformational promise of IO doctrine, with the operational reality of how the Defense Department tactically conducts information activities and campaigns. So in reality, the *IO Road Map* may very well be just the pragmatic solution needed to solve the difficulties in trying to conduct these types of information campaigns on a day-to-day basis. This as opposed to the lofty and somewhat more ambitious goals of the Defense Science Board report, which while utterly correct from a perception management perspective, may in fact never occur due to political and fiscal reality.

The *IO Road Map* and to a lesser extent the new Joint Publication 3-13 (2006) are not the only way ahead for the federal bureaucracy with respect to the future of IO, within the United States. In September 2004, a new Defense Science Board Task Force of the *Report on Strategic Communications* was released, as a follow-on effort to an earlier study by the Defense Science Board in October 2001. Many critics felt the first study was overshadowed by the tragic events of September 11[th], 2001 and the opening campaign of Operation Enduring Freedom in Afghanistan. So a primary duty of this new *Report on Strategic Communications*, was to not only look at the changes that had failed to occur since the original report, but also to reflect on the prior publication to see if its recommendations were still valid. While the author could paraphrase the document, the opening statement is so crystal clear, that it is worth repeating for verbatim, so as to not lose any of its effectiveness.

This Task Force concludes that U.S. strategic communication must be transformed. America's negative image in world opinion and diminished ability to persuade are consequences of factors other than failure to implement communications strategies. Interests collide. Leadership counts. Policies matter. Mistakes dismay our friends and provide enemies with unintentional assistance. Strategic communication is not the problem, but it is a problem (Defense Science Board Task Force of the Report on Strategic Communications, 2004, p.1).

The report went on to cite seven key factors for success with regards to strategic communications by the United States. All of these areas were important, but without an Administration and federal bureaucracy that understands the problem, leads by example and encourages a strong Government-Private Sector partnership, this Defense Science Board report saw little chance of success for strategic communications, notwithstanding its recommendations which are laid out below:

- Issue a National Policy Security Directive on Strategic Communications from the National Security Council
- Establish a permanent strategic communication structure within the National Security Council to include a Deputy National Security Advisor and a Strategic Communication Committee
- The creation of an independent, non-profit and non-partisan Centre for Strategic Communication to support the National Security Council
- Redefine the role and responsibility of the Under Secretary of State for Public Diplomacy and Public Affairs to be both policy advisor and manager for public diplomacy
- The public diplomacy office directors in the Department of State should be at the level of deputy assistant secretary or senior advisor to the Assistant Secretary
- The Under Secretary of Defense for Policy should act as the Department of Defense focal point for strategic communication
- The Under Secretary of Defense for Policy and the Joint Command Staff ensure that all military plans and operations have appropriate strategic communication components (Ibid, p.10)

What is very interesting from an academic standpoint is that many of the personnel interviewed for this Defense Science Board project, also participated in this thesis research, and many of the recommendations of this report, in this author's opinion mirror the overall tone of this dissertation. In addition, all the key interviewees of the Defense Science Board worked at one time or are still associated with the public diplomacy, strategic communications or international public information community, which in many aspects validated their findings. Therefore in a manner, this Defense Science Board also serves as a verification of sorts with respect to the

research conducted as part of this thesis, to confirm that the assumptions are on track with regards to the needs and deficiencies of IO within the United States government.

Thus, the way ahead with regard to developing a strategic IO theory will have to involve the academic community, yet unfortunately as mentioned earlier, there are very few American university professors who expressed interest or expertise in IO, so the ability to house this effort solely in a United States based academic venue is probably not going to happen. However an academic IO theory does not have to be developed by an American, to be useful. A tremendous amount of talented and innovative research on IO is being conducted outside of the United States and so a collaborative approach is suggested, where the three main IO and information warfare academic conferences are utilised as the backbone for this effort. Entitled the European Conference on Information Warfare (ECIW), the Australian Information Warfare Conference (AIWC) and the International Conference on Information Warfare (ICIW), these three gatherings are held annually. Typically, they have many of the same participates attend from around the world, which supports a good atmosphere to allow a vigorous debate, in which a number of aspects and options to developing a strategic IO theoretical construct are analysed with sufficient academic rigor.

9.4.2   A Model to Establish a Taxonomy and set of Definitions for IO

Ultimately the lack of a standardised nomenclature or taxonomy also hurts the ability to conduct IO by the United States government. Basic questions are raised, including those of a semantic nature, such as why could not other United States government agencies agree on a common taxonomy, or a set of terms, such as information warfare? Was it too warlike, hence the switch to IO? Maybe so, but even the latter term is still not routinely adopted across the federal bureaucracy, and there are no common terms in other organizations for IO, or its different sub-themes like perception management, international public information, public affairs, strategic communications, etc.

So it is suggested as part of this thesis that a set of definitive definitions and taxonomy needs to be developed to support the entire federal bureaucracy with regard to IO. A top-down approach has been suggested as part of the interviewee process as well as shown in section 9.4.2, specifically that the use of the three main IO and information warfare academic conferences could offer a way forward in solving this issue. Specifically, at these latter venues, streams

should be set up to develop an ontology, taxonomy and a knowledge base of IO, based on the author's role on the editorial staff of these conference committees. Ontology is a hierarchy of what you know and understand about a subject. A knowledge base is a web of relationships among the items in the ontology. This web of items and how they are related defines this knowledge base. As part of this effort, it is also suggested from interviewees that a portal should be developed or at the least, a web service, that academics can use to access this knowledge base, ontology and taxonomy. It is proposed that the following items will also need to be addressed at these academic conferences, and then be included in this web application as it is developed:

- A clear definition of what IO is and how it works
- A glossary of IO, Information Assurance, Information Warfare and other terms, by the user
- A mind map of important things of all sorts related to IO and how they are related is multiple ways. – discuss these relationships connections in the mind map indicate a variety of relationships among the items on the mind map.
- A components list (that is part of and is contained by) breakdown of IO things, (that is, methods, processes, who uses them, what they are, how they relate to action states-offense, defense, and collaboration).
- A mental model of how IO is used, by whom, where appropriate, all players, info, data and knowledge common among them

9.4.3 An Analysis of which Approaches and Processes work best to support IO

What all these policy developments and organisational changes have recommended and attempted to explain is a much greater emphasis on the use of the information environment across the spectrum of national security activities, from perception management capabilities by the federal bureaucracy to engage in strategic operations in the Global War on Terrorism to securing critical information infrastructures against terrorist attack to military employment of the full range of IO's core competencies. The participants were also very vocal and adamant in their desires for changes to be made in the conduct of IO by the United States government, of which most of these changes can be grouped into the offensive IO category. Questions were asked repeatedly such as – 'Can offensive IO succeed'? 'Should we try to do offensive IO'? 'Does offensive perception management work better when done naturally'? These questions and other suggestions were noted as part of this research so much so that the interviewees believed that there might be methods to allow IO to become more of a useful weapon for the United States. In addition, some participants also noted, that more emphasis should be placed on the publicising of key American documents such as the Declaration of Independence, the Constitution, the Bill of

Rights, etc, all of which should be emphasised more in these type of IO missions. The key to success in offensive perception management as opined by a number of participants was to keep it simple, to use a small number of common themes and goals, that recap the lessons learned over and over, and to do it across all the federal government organisations in a consistent manner. In order to succeed, these same participants also noted, top level buy in was needed and then to go out and preach as well teach at all levels, with freedom and democracy as constant themes. Success in this kind of approach was considered more of a long term approach, not something that can be considered an overnight success. A good example of this kind of methodology as mentioned earlier was the United States Information Agency, which at its peak, concentrated on the economy, social and diplomatic areas in their effort to combat communism, instead of the military missions. These efforts were considered as huge successes with regard to perception management, where the federal government let other organisations lead the effort, vice the Department of Defense.

This research was conducted over a long time period, with preliminary research beginning before the horrific events of 9/11, and continued throughout the Operation Enduring Freedom and Operation Iraqi Freedom campaigns. Early on the research focused more on computer network attack, computer network defense and critical infrastructure protection, all of which are more computer centric issues that were considered key to success in the conduct of IO, because of the enormous changes that were foreseen with the rise of the Internet at that time. As the research continued however, it became clear that while the information assurance, computer network defense and critical infrastructure protection issues are still very important and vital areas to conduct research, they are all to an extent in the federal government, under some sort of control. There are organisations in the United States government, around which IO policy and personnel are in place to handle or coordinate many of these defensive issues, and while these areas may not be totally solved, at least to some extent there are a series of standard operating procedures, methodologies and processes at work. The same cannot be said for IO issue areas such as perception management, strategic communications, etc. Therefore the thrust of this research is also to examine the different methods that work well for different parts of IO - namely that a top down approach on defensive options in the computer network defense and critical infrastructure protection areas may work better, as opposed to a more bottom up approach that centres around perception management and strategic communications. Overall,

the participants also agreed that one methodology is not the best for all areas of IO. There were many reasons for this, but perhaps the easiest to explain is that because IO is such a complex operational area, combining multiple diverse and time honoured warfare areas such as electronic warfare, psychological operations, deception, etc with new and complex capabilities such as computer network defense, critical infrastructure protection, computer network attack, etc., all of which have their own traditions and histories. Into this mix, IO is laid as an umbrella type concept and it is no wonder that one single approach to conduct will not succeed and instead, and that a more varied methodology is probably required. Therefore in order to continue moving ahead with respect to IO in the United States government, it is suggested per the interviewee data that a combination of techniques, methodologies and processes must be utilised by the federal bureaucracy.

If the new *Joint Publication 3-13* and the *IO Road Map* published in 2006 and 2003 are now considered the pre-eminent Department of Defense policies on the power of information, it has to be wondered if they really are the ultimate solution to the problems affecting the federal government with regard to the operational capabilities of IO. Or are they as some interviewees have suggested instead, a series of compromises by the military services and an attempt to publish a more 'realistic' answer to 'operationalising' IO across the Department of Defense? This 'narrowing' of the IO policy is in opposition to what many of the interviewees recommended, for as noted throughout this section per the interviewee data as well as in a large number of documents in the literature review, a much greater emphasis on the use of perception management capabilities by the federal bureaucracy was suggested to engage in strategic operations in the global war on terrorism. For example, the *IO Road Map* which was promulgated by the Department of Defense in 2003, does not appear to follow these recommendations as suggested by the participants, and instead appears to 'consolidate' IO into more 'discrete' military warfare areas, more aligned to the older command and control warfare policy. Thus the recommendation for this key theme of this research is to fund and promote understanding of where the true changes in IO will probably come in a decentralised manner, or as one interviewee stated, "that change occurs best at the edges" (Rendon, 2003). Opportunities to evolve policy, organisations, training and tools, in small but significant areas, should be viewed as a good approach to follow for the conduct of IO across the federal bureaucracy, with

the understanding that they offer the most hope in the near term, to eventually produce the revolutionary effects, that were envisioned from IO nearly 15 years ago.

9.4.4 Establish an International Standards Effort with respect to IO Training and Education

Based on the interviewee data, a suggestion has arisen that involves the establishment of an international based IO Standards Working Group to conduct the following activities:

- Creation of the IO Standards Working Group manifesto
- Creation of relationships with the Police, the Military, professional bodies, other defence agencies, and the corporate world, in the participating countries
- Coordination of a series of International Information Operations Standards for Information Operations workshops
- Development and publication of Information Operations standards for Information Operations

Specifically after a recent International Conference on Information Warfare that was held in the Naval Post-Graduate School in Monterey, California (March 2007), the following deficiencies in IO were identified:

- Information Operations is a field that has no current standards.
- After the recent technological developments, the stakeholders of the Information Operations are not just nation states and military groups any more, but commercial and governmental organisations that are members of the Critical National Infrastructure of a nation.
- Information Operations is a cross disciplinary discipline that brings together specialists in computer science, sociology, psychology, communications international relations and military science.
- There is a need for the aforementioned parties to be able to cooperate and collaborate for producing standards and defining the science of IO.

The first step to mitigate these issues is proposed the creation of a virtual community, bringing together the members of the working group for identifying and producing a course of action. It is suggested that this steering group will utilise a web site, creating a series of mailing lists, and the use of existing scientific conferences for disseminating results. The steering committee of the Information Operations Working Group will be expected to promote the principles of Information Operations in their respective countries and identify and establish relationships with stakeholders: the academia, professional bodies, the corporate world, the military forces, other defence agencies, and law enforcement. This involves organising a series of meetings, organising

workshops and disseminating results following traditional publication approaches. At this stage it is considered that one annual workshop will be adequate.

The second milestone is the development of the group's manifesto. Once the steering committee of the Information Operations Standards Working Group is established it will produce a manifesto, and the future actions of the Group will be dictated by it. The group will develop a collaborative set of Information Operations standards that will be disseminated via journal papers, conferences, workshops and press-releases. The third milestone is the creation of relationships with the European Network & Information Security Agency, the United States Department of Defense, the United Kingdom and Finnish Ministry of Defence, and the Research Network for a Secure Australia. Ultimately, the main outcome will be the creation of international Information Operations standards that will be released, possibly two sets, one for military operations and one for the public. It is hoped that the establishment of this IO Standards Working Group will greatly improve the capabilities of a set of IO standards, especially across the United States and its federal bureaucracy.

Developing standards alone will not meet all of the needs for IO training, and there is no fast and simple solution. By encouraging and increasing the capacity of current programs, there will be an immediate, increase in flow created by accelerating the progress of students currently in the programs. Currently the production of IO graduates of training and education courses has been increased to a few hundred a year. Experience with the IA scholarship program indicates that de novo programs take as long as 4 - 5 years to produce the first individuals with baccalaureate degrees focusing on information operations. To produce individuals at the masters level takes an additional year and a half and yet an additional 2 - 3 years to produce a PhD. The foregoing discussion provides investment solutions that initiate and rapidly build an IO educational infrastructure for the long term national interest. It involves:

- Investing in undergraduate and graduate students to encourage them to enter the profession
- Investing in current faculty to keep them in academia
- Investing in converting faculty to support information operations initiatives
- Investing in research to maintain the state of the art and advance the profession
- Aiding in the development of information operations as a recognized discipline in conjunction with information assurance
- Aiding faculty in professional development and publication of research results

The following nine-point program would establish an integrated academic infrastructure dedicated to providing the education and training required to support the using IO to protect of elements of the critical national information infrastructure. Specific actions proposed include:

- Creation of a scholarship program to encourage both undergraduate and graduate students to enter the profession
- Creation of distinguished professorships and associated stipends to encourage faculty both to join and to remain in the academic ranks
- Creation of joint research opportunities with government
- Creation of mechanisms to maintain currency of teaching and research facilities
- Encouragement of government, industry and academic personnel interchanges
- Encouragement of joint academic - industry research consortia to address current needs
- Creation of an information operations training program to increase the number of faculty teaching and researching in the area
- Creation of joint education and training programs to keep current practitioners current
- Encouragement of the creation of innovative research outlets for faculty

The emphasis of this push to upgrade the IO training and education curricula is to help support the attraction of qualified personnel and students to the profession, with the development of a sufficiently large and well-informed faculty to guide education, training, and research programs for these personnel and students. In addition improved infrastructure is needed to support such programs, as well as strengthening ties between industry, government, and academia through joint education, training, and research initiatives and opportunities. Finally as has been emphasised in Estonia in 2007 and Georgia in 2008, the use of Cyber Warfare tactics are becoming more prevalent. Training and education in IA and IO capabilities, with the development of appropriate standards could also help to alleviate some of these risks and vulnerabilities.

9.5   Areas for Future Research

All of the areas addressed above are considered as key findings, and if extended, could also be logical areas to conduct additional research in the future, with specific focus areas to include the following suggested topics:

- The reasons why the Department of Defense limited its IO policy
- The reasons for the lack of a strategic academic IO theory
- Research attempts to link IO Training and Education to taxonomy and standards
- The use and success of metrics in IO missions

In addition, since this research was primarily conducted in the United States, opportunities exist to research similar test cases outside of America. Likewise, this paper also emphasised the fact that no longer will it require a large organisations to execute this element of power, but instead it will be the nimble and smaller activities and agencies that will succeed in this new era. Future research could also be conducted on the optimal size of an agency or group that is best in this new informational environment. Likewise other academic issues that are available for research could revolve around which organisational structure can be used to best maximise their capabilities in the information age, whether it is at the strategic, operational or tactical level. Or additional research could be conducted in the key features that were mentioned in the first chapter section, namely wide open communication links, little censorship, truthfulness of information and whether strengthening networks will decide the future of the world's political structure. Finally in this thesis, definitions and models were developed that articulate not only why this divide between strategic theory and tactical operational missions exists, but also specific strategies for utilising IO in a manner that best optimises the inherent capabilities of this element of power. Taken together, all of these areas mentioned above could be lucrative source for research by academics in the future, because of the incredible change that is occurring within this issue area.

9.6   Summary of IO Changes with Desired Recommendations of Participants

In conclusion, what all of the interviewees emphasise and acknowledge, which is also alluded in the books, articles, conferences and reports that make up this thesis, is that in essence a drastic change in the conduct and use of power has occurred during the Information Age. In this research project, these changes in the evolution of power were discussed with a large number of personnel as part of this research, and focussed not only on the changing nature of power with respect to information, but also on the growing power of information itself. In addition, analysis of how these recommendations gathered from the data gathered compares to the actual development of IO by the United States government was also attempted. Likewise, this research also compared the changes recommended in the Conceptual Models, to other literature on this subject, to analyse if other authors agreed with the research participants as the way ahead to further the progress of IO, as compared to those that did not. With regard to the literature itself,

some of these books and articles were prescient and seminal, while others were less useful and have quickly faded into obscurity. There are many reasons for this, but as the author's hypothesis suggests, IO policy often does not readily translate into the tactical operations. Therefore what the literature review in Chapter Two and its analysis in that section have attempted to do, is to reiterate and show the gaps in literature between strategic doctrine and the day-to-day reality of this new warfare area, and how this research intends to fill that void. Finally, an attempt of this research, was to show the gap in knowledge that exists today, not only from a literature analysis prospective, but also by comparing it to the requirements for the continuing development of IO, with an extensive series of interviews over a multi-year period.

In conclusion, what all of these texts as well as the interviewees recognise is that there is a new role for information as an element of power. It is understood that it is the fungibility of information which makes it so truly useful, and this dissertation has attempted to emphasise that the ability to transform information, to move it or display its capability, all relates directly to its power. This is the concept of strategic IO that quickly captures the minds of so many because of its great potential. Many of these texts also point to a more realistic appraisal of the current capabilities of the United States government, and often suggest a more pragmatic approach of continuation and maturation of the IO process within the federal bureaucracy as the best way forward. The challenge of this research therefore has been an attempt to analyse the delta between the strategic concepts of the power of information envisioned by the United States and how IO is actually conducted by the government, to help formulate a plan to lessen the gap based on the suggestions of the interviewees.

Appendix A – Interview Schedule

The primary methodology of this research has been active interviews combined with Soft System Methodology. 100 interviews were conducted since 1999 in which the researcher repeatedly met with a variety of government officials to discuss the role and evolution of IO within the United States government. Of these interviews, 40 key participants were selected for the final analysis of this study, due to their positional and institutional knowledge, breadth of information and willingness to undergo repeated interviews.

#	First Interview	Second Interview	Third Interview	Affiliation
1	19-Feb-03			NPGS
2	19-Feb-03			NPGS
3	14-Apr-03	26-Apr-04		Aerobureau Corp
4	15-Apr-03			DoD
5	16-Apr-03			CFR
6	16-Apr-03			Highlands Forum
7	16-Apr-03	24-Nov-03	26-Mar-04	State Department
8	17-Apr-03	25-Mar-04		Consultant
9	17-Apr-03	25-Mar-04		Consultant
10	18-Apr-03	1-Apr-04		The Rendon Group
11	21-Apr-03			RAND Institute
12	21-Apr-03			Ctr Naval Analysis
13	21-Apr-03			Consultant
14	22-Apr-03			NDU
15	22-Apr-03			RAND Institute
16	22-Apr-03	31-Mar-04		State Department
17	23-Apr-03	1-Apr-04		DoD
18	23-Apr-03			GWU
19	24-Apr-03			OGC
20	25-Apr-03			RAND Institute
21	13-May-03			RAND Institute
22	10-Jun-03			DoD
23	10-Jun-03	1-Apr-04		State Department
24	10-Jun-03			DoD
25	10-Jun-03			DoD
26	10-Jun-03			GWU
27	2-Jul-03			TRC
28	2-Jul-03			FCO
29	3-Jul-03			University of Leeds
30	3-Jul-03			Consultant
31	3-Jul-03			SNDC
32	4-Jul-03			ADF
33	4-Jul-03			Deacon University
34	4-Jul-03			Kings College
35	4-Jul-03	1-Apr-04		NDU
36	6-Aug-03			Monash University
37	7-Aug-03			JFSC
38	12-Aug-03	19-Nov-03	23-Apr-04	C4ISR
39	13-Aug-03	1-Apr-04		NSC
40	13-Aug-03	24-Mar-04		State Department

Appendix B – Rich Pictures

W1 - Government

What must the United States federal bureaucracy accomplish from a policy, personnel and organizational effort, to better utilize information as an element of power to meet the threats of the future?

W2 - Academic

W3 - Public

Rich Picture #1

US Politicians Official USG

US Opinion?

Other

US

Citizens

Hollywood Academic

Media

World Opinion & Events?

Media

Academia Government

Religious Leaders
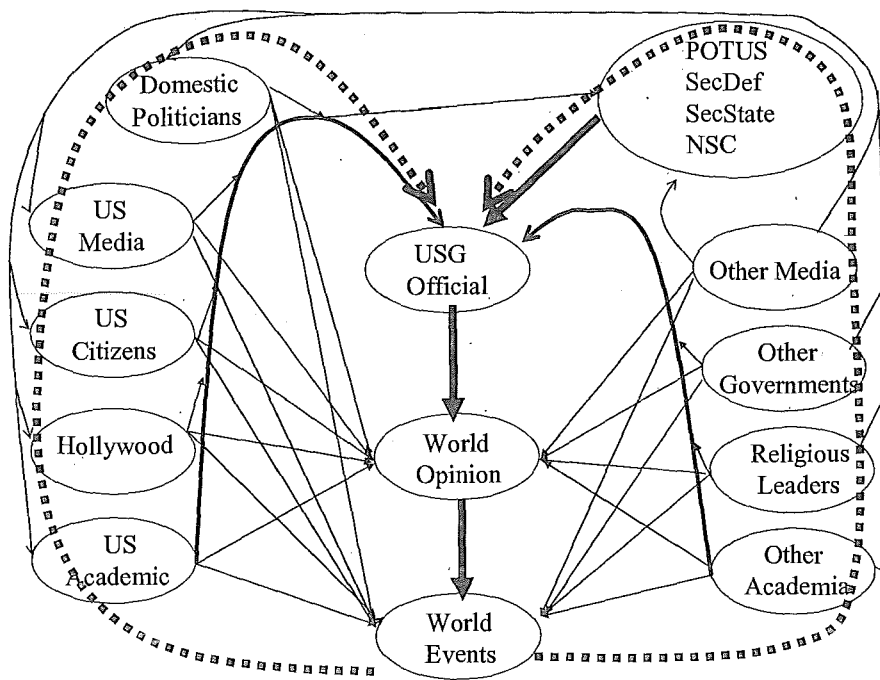
Rich Picture #2

Rich Picture #3

Appendix C – CATWOE Elements

	Clients			World View
C1	Foreign Audiences		W1	Political, military, USG, engineers, IR professors
C2	Key decision makers (foreign and domestic)		W2	Many practitioners do not understand IO
C3	US Citizens (general public)		W3	IORM almost reverting back to C2W - why?
C4	US Government including military		W4	Is their difference between IO and PD lane?
C5	Academia (foreign and domestic)		W5	Do we need a National Information Policy?
C6	Media including Hollywood		W6	Or should we just update the NSS?
	Actors			**Owners**
A1	Media/Hollywood - reservists or liasion personnel needed?		O1	Interagency to include the Dos, DoD, NSC and WH - need more coord?
A2	Planners and operators need to work together		O2	Two PCCs are redundant
A3	TRG and consultants - volunteers aka like civil defense?		O3	Is their trust in the PM efforts of these organizations? USIA?
A4	How many actors have been trained in IO?		O4	In the OSD, oversight of IO is everywhere
A5	Standalone IO cells - have they worked well?		O5	How many have been trained in IO?
A6	Old USIA types/ State Department, are they integrated?		O6	DoD is building PD capability because it believes State is not doing enough
A7	DoS PCC and NSC PCC - no decision making authority		O7	WH is good at political domestic message and spin but often reacts to foreign events
A8	4th POG - too tactical , to low on CoC		O8	Need to quickly get decisions on PD from on high
A9	International IO Operators - corporate IO		O9	State needs a bigger role - bring back
A10	Clearances and language skills are essential			**Environment**
A11	NSC OGC and WH/DoD - relate to a National Information Council?		E1	Time is crucial, computers have increased change but products should be checked
A12	Information Czar? What about an IO Corps or a CinC IO/Standing JHQ?		E2	Key US values - freedom, DoI, Constitution, a nation of immigrants
A13	Do we need a surge capability?		E3	Information is like terrain, cannot leave unoccupied
A14	Senior level USG training & awareness is needed		E4	Money and resources drive capabilities
A15	Alistair Campbell or Karen Huges type of influence is desired		E5	US DOS IIP has no directive voice for PD - spread PD officers everywhere?
	Transformation		E6	Interagency bureaucracies - will org change work?
T1	Strategic Information Campaign, ie strategic PSYOP, integrating strategy which is coherent is very important		E7	Need a 24/7 capability? Modeled on a campaign headquarters? Around the world (US/UK/AU) ie follow the sun
T2	Innovation occurs at the margins		E8	US PD must be faster, more reactive
T3	Flatten the process - integrate - dynamic		E9	Truth is essential but being first is better
T4	Structure is bad - disorganized		E10	IO is not new
T5	Hiring practives for military civilians dates from industrial era		E11	IW and Psyop are not good terms for interagency, IO and SC are much better but EBO may be the best?
T6	We need continuous training and education		E12	Eat your own dog food (US)
T7	Effects based operations (EBO)		E13	Training or lack of is badly needed for PD
T8	Target analysis		E14	Themes need to be tied together
T9	IORM - major recommendations for training		E15	Top to bottom or bottom to top?
T10	Acccess to top leadership - overall guidance		E16	What are we trying to protect?
T11	What are the overall goals?			
T12	Set out top-level nodes and missions - goals and objectives			
T13	Cyber Security and PD related?			

Appendix D - Root Definitions

1. Information Operations in the United States government is coordinated by the planners and operators under the centralised control of three key organisations (White House, State Department and the Department of Defense), to achieve a strategic Information Operations campaign to key decision makers in both foreign and domestic populations, including the global media, which promulgates the United States political/military weltanschauung within the constraints of real-time, 24/7 operations.

System - Information Operations in the United States government

- Client   key decision makers in both foreign and domestic populations, Including the global media
- Actors   planners and operators
- Transformation   strategic Information Operations campaigns
- Worldview   political/military
- Owners   three key organizations (White House, State Department and the Department of Defense)
- Environment   real-time, 24/7 operations

2. Information Operations in the United States government is achieved in an ad-hoc fashion by a variety of operators, both international and corporate planners, as well as the global media, for the American public, to facilitate a bottom-up IO campaign to target to key decision makers in both foreign and domestic populations, which promulgates the United States academic/civilian weltanschauung within the constraints of resources and key American values.

System – Information Operations in the United States government

- Client   Target audiences include both foreign and domestic populations
- Actors   International and Corporate operators, including the global media
- Transformation   bottom up Information Operations campaigns
- Worldview   academic/civilian
- Owners   American public
- Environment   resource constraints and key American values

Final Root Definitions

The two final Root Definitions are shown below. The same format will be followed for each of the draft Root definitions, with each of the CATWOE elements utilized as part of an attempt to develop a coherent statement of the data derived from the interviewees.

Information Operations in the United States government needs to be differentiated between the tactical and strategic operations by key decision makers of the United States government for better integration and more IO training across the interagency spectrum, in an understanding that IO is not a new phenomenon.

System	Information Operations in the United States government
Client	United States government
Actors	Tactical versus Strategic
Transformation	Better Integration
Worldview	More IO Training
Owners	Key decision makers
Environment	IO is not New

The second final Root Definition is shown below:

Information Operations in the United States government needs personnel and a better organisational infrastructure, to reach overall IO goals, focused at coordinated themes towards its targeted audience with coherent IO policy.

System	Information Operations in the United States government
Client	All Others
Actors	Personnel
Transformation	Overall Goals
Worldview	IO Policy
Owners	Better IO structure needed
Environment	IO Themes

Appendix E – Conceptual Models

Information Operations in the United States government is derived from the perspective of the overall IO themes to produce better integration implemented and run by tactical versus strategic IO personnel for the benefit of the USG and under the control of key decision makers within the constraints of the fact that IO is not a new warfare area.

Clients	United States Government
Actors	Tactical vs Strategic
Transformation	IO Integration

Weltanschauung	IO Themes
Owners	Decision Makers
Environment	IO is not New

Conceptual Model 1.0 - IO in the United States government: A Top Down (Centralised) View

Tactical vs Strategic

Ensure strategic goals match interagency IO plans

Develop a centralised series of committees and groups to monitor and adjust plans as needed

Analyse agencies plans wrt IO

Develop similar type of IO plans and goals in each USG agency

Ensure that these IO plans are synchronised across the organisations

Match agency plans to strategic IO goals for USG

Goals: Ensures a top-down, centrally executed plan that is integrated across the USG

Targets: Improving understanding of objectives by key DM

Monitoring system needs links through-out interagency

Conceptual Model 1.1: Tactical vs. Strategic Goals for US government IO Systems

Better Integration of IO Actions

Develop a coherent and integrated set of coordinating systems between all three organisations

Need buy-in, resources and commitment from top leadership

Ensure coordinating systems utilise similar standards

Operations should be 24/7 – constant and continuous

Utilise same SW and HW to communicate, operate and plan

Systems should provide metrics for analysis

Goals: Real-time integrated IO systems that are coordinated both vertically and horizontally across the interagency

Targets: Instill a belief in effectiveness of USG IO plans, systems and operations

Monitoring system that can transfer data seamlessly across all levels of USG

Conceptual Model 1.2: Coordinating systems between White House, Department of State and Department of Defense

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Ensure that key USG agencies understand users needs and desires

Develop overall guidance for key USG organisations

Define key decision makers in the USG

Develop system to understand stakeholders needs and desires

Execute system on a consistent and repeatable basis

Measure the needs of stakeholders

Goals:
Ensure Stakeholders needs are met

Targets:
Users defined as USG personnel and key decision makers

Monitoring system feedback through interagency bureaucracy

Conceptual Model 1.3: Investigate Needs of Stakeholders

United States Government

Ensure that IO architecture is consistent, to execute a top-down system

Ensure adequate training of personnel across USG to man this bureaucracy

Develop consistent IO policy across the USG organisations

Develop IO planning system for all of the USG

Execute strategic IO plans from single system

Use IO standards recognised across USG

Goals:
Ensure all USG personnel are well trained and know the policy and system developed to conduct strategic IO.

Targets:
The staffs of the three key agencies plus other key USG decision makers

Monitoring system uses recognised IO standards and systems

Conceptual Model 1.4: Set up an Interagency IO Campaign Bureaucracy

IO Themes

Execute standard IO plans and operations 24/7 across the USG

Ensure USG bureaucracy is capable of executing IO plans and operations

Ensure compatibility of interagency IO processes

Incorporate IO into DoD, NSC and DoS's, normal operational capability

Execute IO campaigns 24/7 around the world

Develop feedback mechanisms for IO campaigns

Goals: A well-run and timely series of IO campaigns

Targets: Key decision makers and audiences in USG

Monitoring system through USG sources

Conceptual Model 1.5: Execute IO Campaigns

IO is not New

A comprehensive and integrated set of measures of evaluate an IO Campaign

Ensure IO standards, policies and procedures are developed and adhered to by the three key USG agencies

Develop metrics that can utilised across USG

Utilise global media and USG to measure IO plans and strategy

Develop standard methodology to measure success of an IO campaign

Incorporate IO training, resources, planning and operations into one set of metrics for USG

Goals: Match strategic IO plans to resources and capabilities

Targets: Key USG decision makers and organisations

Monitoring system a comprehensive system using feedback from a multitude of sources

Conceptual Model 1.6: Measure IO Campaign's Success

301

Information Operations in the United States government from the perspective of the development of IO Policy to produce overall IO goals implemented and run by IO Personnel for the benefit of all other personnel that are affected by IO under the need for a better IO structure within the constraints of the overall IO training available.

Clients	All Others
Actors	IO Personnel
Transformation	IO Goals

Weltanschauung	IO Policy
Owners	IO Structure
Environment	IO Training

Conceptual Model 2.0: IO in the United States Government, A Bottom Up View

IO Goals

Develop strategic goals from the IO actions conducted w/I the United States

Develop a decentralised accounting mechanism such as a portal, where IO activities can be reported

Goals:
Attempts to tie together in a bottom-up fashion the plethora of IO activities conducted by the United States

Use opinion polls to determine US strategic goals

Compare IO actions to long-standing cultural values of US

Utilise polls and reports from the media to undestand impact of IO activities

Targets:
A large variety of foreign and domestic populations

Utilise academics and media to analyse effectiveness of IO campaigns wrt to targets

Monitoring system is simply done by self reporting and the media

Conceptual Model 2.1: Accept any and all IO actions conducted for the United States government

IO Structure

Develop a network bridge or portal that can accept a variety of communications systems and networks

Attempt to foster a common set of procedures for reporting IO activities

Goals:
Real-time integrated IO systems that are coordinated both vertically and horizontally across the interagency

Advocate similar and common standards

Pursue a common COTs functionality of systems for all

Utilise compatible SW and HW to communicate, operate and plan

Targets:
Instill a belief of the accuracy of the data no matter what the source

Systems should provide metrics for analysis

Monitoring system that can transfer data seamlessly across all organisations

Conceptual Model 2.2: Develop a Decentralised Communications and Networking Procedures to Execute and Facilitate IO Activity

303

IO Training

- Attempt to develop an understanding of the many different users needs and desires
- Develop tests to track level and competence of IO users
- Analyse strategic goals of different groups
- Develop a blended method of IO instruction that utilises a number of academic techniques
- Ensure training is available in a number of different venues
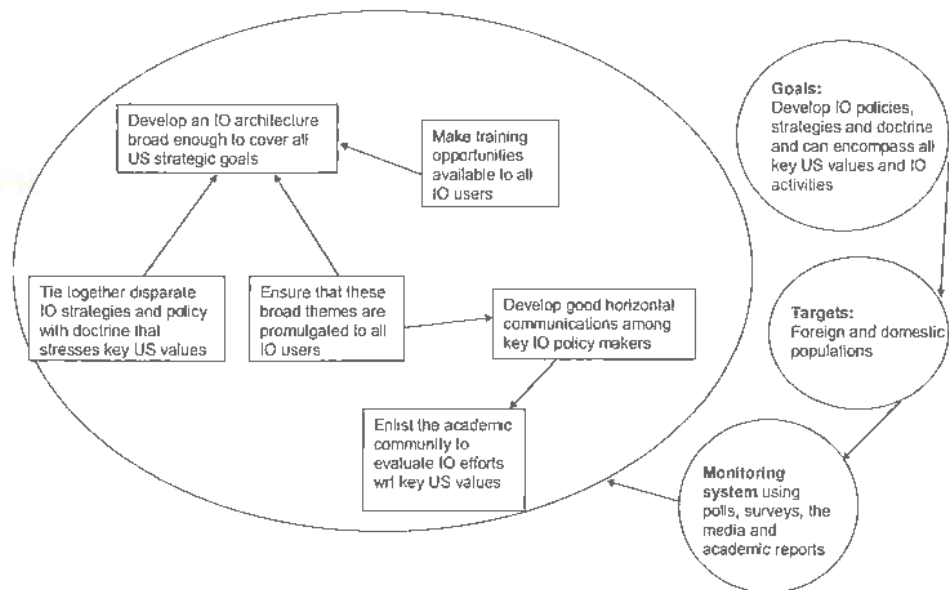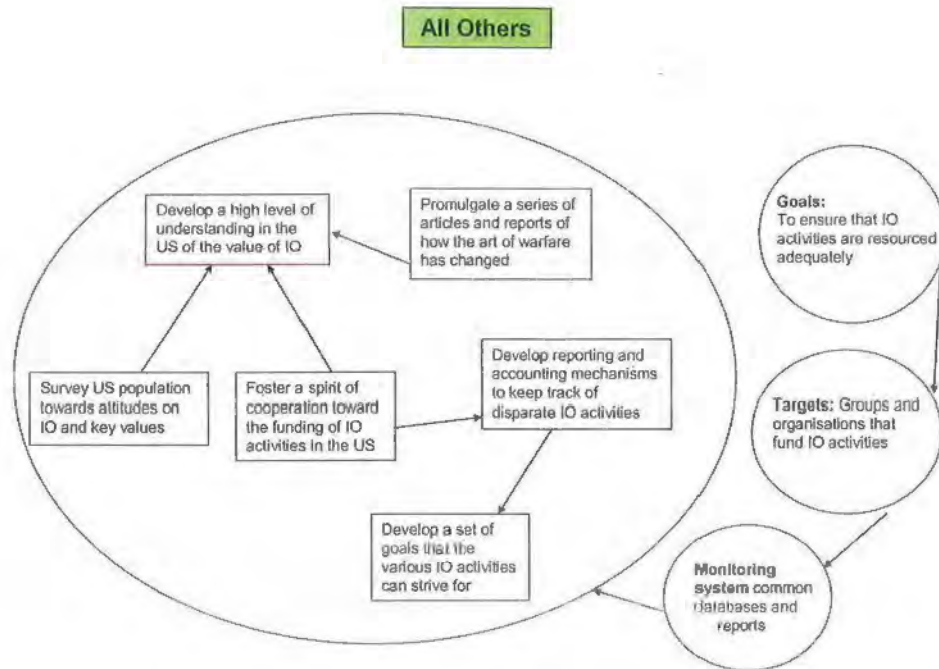- Develop feedback mechanisms to evaluate training

Goals:
Ensure users training needs are met

Targets:
Users who need to conduct IO activities

Monitoring system feedback through students and anecdotal evidence

Conceptual Model 2.3: Utilise a Wide Variety of IO Training Courses and Instruction

IO Policy

- Develop an IO architecture broad enough to cover all US strategic goals
- Make training opportunities available to all IO users
- Tie together disparate IO strategies and policy with doctrine that stresses key US values
- Ensure that these broad themes are promulgated to all IO users
- Develop good horizontal communications among key IO policy makers
- Enlist the academic community to evaluate IO efforts wrt key US values

Goals:
Develop IO policies, strategies and doctrine and can encompass all key US values and IO activities

Targets:
Foreign and domestic populations

Monitoring system using polls, surveys, the media and academic reports
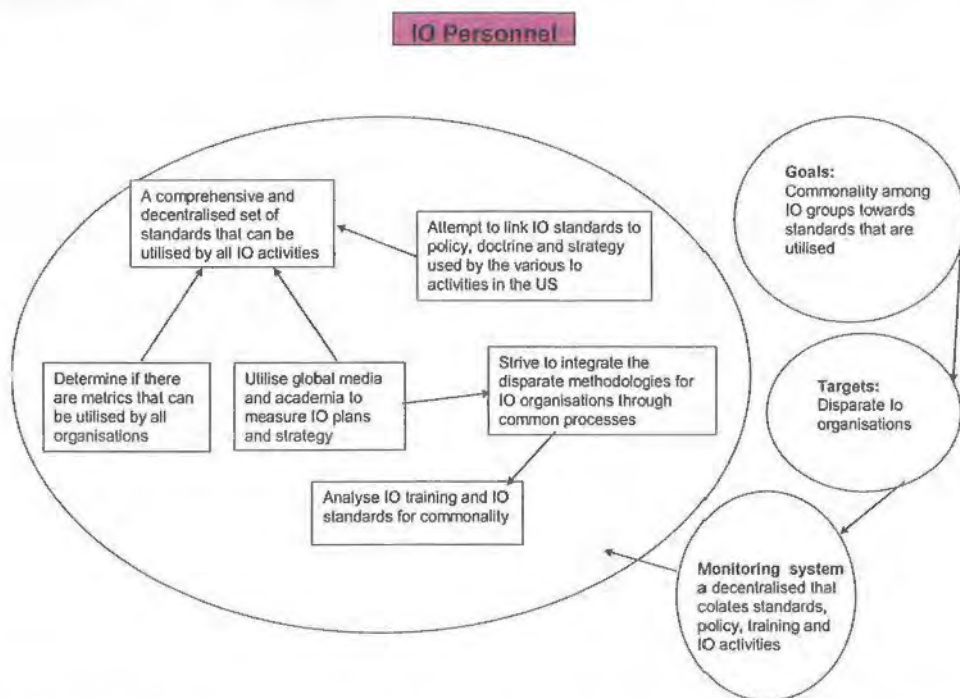
Conceptual Model 2.4: Develop an IO Policy and Strategy Broad Enough to Encompass all Key United States Values

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Develop a high level of understanding in the US of the value of IO

Promulgate a series of articles and reports of how the art of warfare has changed

Goals:
To ensure that IO activities are resourced adequately

Survey US population towards attitudes on IO and key values

Foster a spirit of cooperation toward the funding of IO activities in the US

Develop reporting and accounting mechanisms to keep track of disparate IO activities

Targets: Groups and organisations that fund IO activities

Develop a set of goals that the various IO activities can strive for

Monitoring system common databases and reports

Conceptual Model 2.5: Provide Resources and Adequate Funding to Foster Innovation in IO

A comprehensive and decentralised set of standards that can be utilised by all IO activities

Attempt to link IO standards to policy, doctrine and strategy used by the various Io activities in the US

Goals:
Commonality among IO groups towards standards that are utilised

Determine if there are metrics that can be utilised by all organisations

Utilise global media and academia to measure IO plans and strategy

Strive to integrate the disparate methodologies for IO organisations through common processes

Targets:
Disparate Io organisations

Analyse IO training and IO standards for commonality

Monitoring system a decentralised that colates standards, policy, training and IO activities

Conceptual Model 2.6: Develop a Set of IO Standards that can be Understood and Utilised by all Organisations

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