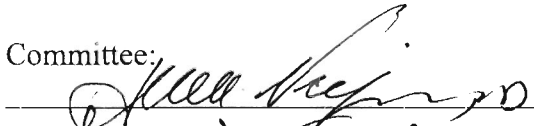
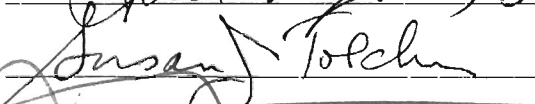

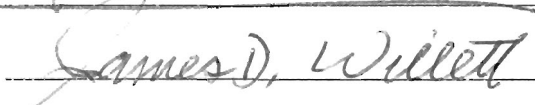




AN ANALYSIS OF THE POTENTIAL DIRECT OR INDIRECT INFLUENCE
EXERTED BY AN AL QAEDA SOCIAL NETWORK ACTOR ON FUTURE
BIOLOGICAL WEAPON MISSION PLANNING

by

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A Dissertation
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Network Actor on Future Biological Weapon Mission Planning

A dissertation submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy at George Mason University

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DEDICATION

This is dedicated to my family in recognition of their understanding and support.

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I would like to thank Drs. Arnauld Nicogossian, Maksim Tsvetovat and Susan Tolchin for their invaluable mentoring and guidance. I would also like to extend my appreciation to Dr. Maricela Medina for her constant counsel and encouragement. In addition I would like to thank the many friends, family, coworkers, and supporters who assisted me. My son and daughter, Richard and Christian, aided studying and test preparation. My husband, Tim, provided opportunity for focused dissertation preparation. My sister Carrie Jasper offered sustenance. And a tremendous thank you to the Center for Innovative Technology for providing an extremely supportive environment and work from home capability.

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ABSTRACT

AN ANALYSIS OF THE POTENTIAL DIRECT OR INDIRECT INFLUENCE EXERTED BY AN AL QAEDA SOCIAL NETWORK ACTOR ON FUTURE BIOLOGICAL WEAPON MISSION PLANNING

Denise N. Baken, Ph.D

George Mason University, 2007

Dissertation Director: Dr. Arnauld Nicogossian

The current conflict known as the “War on Terror” pits several sovereign states (United States and its Allies) against a non-state entity. This entity, al Qaeda, is a global social network with religious doctrine adherence as its declared locus. Terror experts agree that the economic and psychological damage al Qaeda inflicted on 9/11 is miniscule compared to the potential damage by a biological weapon. This dissertation is an analysis of the potential direct or indirect ability of al Qaeda members to select and use a biological weapon.

1. Introduction

When Osama bin Laden issued his August 23, 1996 *Declaration of Jihad Against the United States and its Allies* (Appendix A), he alleged that US/Western secular influences were detrimental to all Muslims and therefore a threat to Islam itself.¹ While he made other points, including a need to create Muslim states governed by Islamic values and principles, his major thrust was to declare war on the West and its way of life.²

At the time bin Laden declared Jihad, the US did not consider him or his organization, al Qaeda, a significant threat to its homeland or security; consequently the US did not aggressively respond to the religious declaration of war.³ Since then bin Laden's al Qaeda has evolved into an international entity capable of inflicting significant harm on the world's only superpower.⁴ How did he do this? Terror experts have suggested that one cause of his success may be his innovation of incorporating strong business management into the business of terror.⁵ Introducing this innovation into the terrorism field has changed the marketing of terror goods and services, realigned funding strategies and performance trajectories and redefined the value proposition offered to the industry's investor(s). This has permitted terrorism investors to expect more than a political message platform as the return on financial or personal investment. Current or

prospective investors anticipate significant economic disruption with any subsequent major al Qaeda attack.⁶

Bin Laden's declared jihad has produced a strong terrorism growth rate and provided the impetus for a robust emerging market that is conducive to small entrants who want to participate in the terrorism boon.⁷ Implementing his Strategic Plan 2020, bin Laden is poised to expand al Qaeda's current terrorism leader position and increase his market share. He has also been instrumental in terrorism's emergence into a profession.⁸

These changes have modified the tenor of the business of terrorism to the extent that it is now analyzed using al Qaeda as the performance comparability scale. Other terror organizations are now judged on their al Qaeda position correlation.⁹

Hypothesis and Questions

Aware of the al Qaeda approach to the business of terror, this dissertation hypothesizes that, over the years, Osama bin Laden has consistently employed business principles in his approach to al Qaeda management and uses those principles to plan and execute mission activities. It further contends that he will employ this same approach to selecting and executing a weapon of mass destruction attack on the United States.

Hypothesis: Al Qaeda does incorporate a business approach to selecting, planning and executing mission activities.

Questions: 1) Does al Qaeda execute organizational functions using a business management approach to mission planning and execution activities?

2) Is business management the deciding factor that afforded al Qaeda the additional impetus needed to frame an organization capable of evolving from a minor player into an international leader in terrorism?

3) Regardless of the business impetus, is there a link between al Qaeda's organizational focus of religious doctrine and its success?

4) Is business management and/or religious doctrine a determinant in mission selection?

5) Will business management or religious doctrine determine which biological weapon is selected for use in an attack on a Western nation?

This study uses three basic methods to answer these questions: literature reviews, terrorism experts' opinion (surveys), and social network analysis of selected al Qaeda members. Established social network analysis/social relationships are examined in the context of their influence on network activities. Islam is included in the consideration of factors that influence network relationships. Its inclusion does not assume each decision will flow from the teachings of the Holy Qur'an. It only acknowledges the influence and impact of a non-quantitative value like religion can have on the end result.

Dissertation Structure

Chapter 2 provides background to the terrorism industry using the historical and political experiences of the Muslim Brotherhood, Hamas, Hezbollah, and the Palestinian Liberation Organization. It also provides general background for al Qaeda, and presents an overview of Islamic Economics, its tenets and influence on decisions made by followers of Islam.

Chapter 3 presents an overview of the methodological approach used to investigate the research hypothesis. It catalogues the literature procedures, software selection process and management survey administration. The method is structured in a manner to minimize the introduction of bias toward one position or another. It concludes with general statistics on the process.

Chapter 4 presents the Literature examined to identify the current thinking in business management and social network analysis.; shares the results of the al Qaeda business management investigation; and summaries the social network study results and offers examples of network social activity through select network visualizations. Finally it presents the results achieved from the review and analyses. It identifies the experts' opinions from the management survey conducted and assesses the social network relationships as they affect organization functions based on previous mission execution.

Chapter 5 discusses the results and hypothetical attack approaches. It offers suggested agents and decision making processes. In addition, it offers a look at the effect of business and Islam on al Qaeda's mission planning process.

Chapter 6 concludes the study with an assessment of al Qaeda's weapon of mass destruction potential. It also offers US policy response suggestions. It closes with suggested areas of continued study and opportunities to expand this area of investigation.

Definition of Terrorist

The term "terrorist" is used in the Western connotation of equating the acts of terror/violence executed against a country's inhabitants, with the perpetrators of those

acts. It is understood that the term freedom fighters has been used as a descriptor for these individuals by supporters of their organizations.¹⁰

¹ Ibid.

² Ibid.

³ Gunaratna, R. (2003) *Inside Al Qaeda: Global Network of Terror*, Berkley Publishing Group, New York NY

⁴ Kean, Thomas H. et al, (2004) *National Commission on Terrorist Attacks Upon the United States*, Washington, DC

⁵ Hoffman, Bruce, (2003) *The Atlantic online* **291**:26-27.

⁶ Lawrence, B. *Messages to the World: Statements of Osama bin laden*, Verso, New York, NY

⁷ Hoffman, B. (2006) *Inside Terrorism*, Columbia University Press, New York, NY.

⁸ Warner, E (1998) in "Voice of America", United States.

⁹ Jenkins, B.M. (2005) in "RAND News & Events".

¹⁰ Staff. Jihad Unspun. <http://www.jihadunspun.com/home.php>

2. Background

This chapter provides background to the terrorism industry by presenting the major groups that dominated the Middle East terrorism market during the period al Qaeda began its journey to global terrorism leader. It presents each of the groups from an historical and organizational perspective, and offers each organization's religious focus and position on Jihad. While Jihad is, by definition, a struggle (Appendix B), within the context of this discussion it is a declared religious war against a perceived enemy.

2.1 Past Declarations of Jihad

Osama bin Laden is not the first to declare religious war on a value system purportedly challenging the Islamic way of life.¹ Twentieth century attempts to reclaim the governments of Middle East countries for Islam were recorded as early as 1928 when Hassan al-Banna started the Egyptian Muslim Brotherhood.² Hassan wanted to reduce the secular influences that proliferated in Egypt after the fall of the Ottoman Empire.³ He felt Islam was the appropriate counter to this European polity.⁴

To al Banna, Islam was complete and did not need the additional influences of Western mores.⁵ On its own Islam brought all aspects of the individual together: political, cultural, religious and national.⁶ The Islamic moral code of God, the Holy

Qur'an and the Prophet Mohammad were an appropriate counter to the European influence.⁷

2.1.1 Muslim Brotherhood

To inculcate his message into Egyptian society, al Banna started schools that taught the principles of Islam to the youth of Egypt.⁸ The Brotherhood then created charitable organizations and social clubs to reach all those who influence these youth.⁹ From these initiatives al Banna quickly moved to developing factories and building mosques to disseminate his message. It is in this latter organization, the mosques, that al Banna and the Brotherhood had their greatest success.¹⁰ Through the mosques, the Brotherhood influenced a cross-section of the population without interference from the state because the mosques were deemed sanctuaries.¹¹

The Brotherhood taught a personal moral code of Islamic values. Through their teachings the Brotherhood sought to change the nation by changing the people.

Organization

The Brotherhood had a federated structure with branch offices reporting to a central headquarters.¹² Within this spoke organization was a three tier membership: the first level was designated the assistant or member. At this level members carried a membership card and paid dues. This level had the least demands made upon it. The second level, called the related, declared obedience to the organization's principles and demonstrated knowledge of those principles. These members also had to learn the Holy Qur'an, observe Islam obligations and devote their lives to the society. The third level or the active members devoted their entire existence to the Brotherhood and Islamic

training.¹³ Through this structure the Brotherhood reached a variety of groups in vastly different regions across Egypt. Leaders of local chapters focused on the interest and needs of their constituents. But they remained in communication with the Brotherhood's other organizational leaders, in the event aid was needed elsewhere.¹⁴ It was this communication that sustained the Brotherhood during the Egyptian government crackdowns - crackdowns that virtually eliminated other groups.

Growth

By 1940 the Brotherhood had over 500 branches. Given this size and growth rate, the organizational leadership soon realized it could flex the Brotherhood's grassroots muscles to achieve its political goals. One of the first issues the Brotherhood sought to influence was British occupation.

Al Banna was so opposed to British presence that he sought support from Adolph Hitler and Benito Mussolini to remove this secular influence. He even sought their aid in eliminating the Egyptian sovereignty; a regime he felt had betrayed the Islamic values and the Islamic people within its protection.¹⁵ He instead espoused the establishment of an Islamic government in its stead.¹⁶

Through all of these events, al Banna insisted that the Brotherhood remain nonviolent at its core.¹⁷ This position became a point of contention for some within the organization and by 1973 sufficient discord existed that change became imminent.¹⁸

2.1.2 Hamas

In 1973 one of the Muslim Brotherhood's charismatic preachers, Shaykh Ahmad Yasin, founded The Islamic Center for central location of the Brotherhood's political

activities.¹⁹ As the Center flourished, it began to control several of the religious organizations affiliated with the Brotherhood.²⁰

During this same period the Palestinian resistance observed the successful Iranian Revolution. These Palestinian resistance members began to seek avenues that would achieve an Islamic government for their Islamic people, as well. The successful Iranian revolution provided the impetus for a broader consideration of violent means to achieve the goal of an Islamic government for Muslim peoples.²¹

By 1987 Palestinian inhabitants and sympathizers harbored sufficient anger against their conditions in the Gaza region that leaders had concern of a violent eruption.²² On December 8 of that year that fear became a reality. A traffic accident involving Israeli vehicles resulted in the deaths of several Palestinian workers.²³ The rioting that followed surprised even the Brotherhood.²⁴ Shaykh Yasin used the violent fallout from that event as an opportunity to oppose the Israeli occupation. In January 1988 Shaykh Yasin and his fellow organizers formalized their resistance against this occupation by issuing leaflets under the Hamas signature.²⁵ Hamas then actively participated in the Intifada. This participation legitimized Hamas to those who believed in armed struggle.²⁶ By August of that same year, Hamas issued its formal charter, identifying goals and objectives that included the disestablishment of the State of Israel and the use of jihad to solve the problem of Palestine.

A Palestinian Sunni network, Hamas functioned mainly around the Gaza Strip. Until the charter's (manifesto's) issuance the Palestinian Liberation Organization was the acknowledged leader of the Palestinian resistance.²⁷ In its charter Hamas acknowledged

the PLO's contributions to the mission of a Palestinian state, but Hamas strongly opposed the secular approach PLO took to achieve this state.²⁸

As Hamas grew, it specialized in attacks on the Israelis. In the course of these attacks, Hamas developed a reputation for extreme violence.²⁹ By 1994 Hamas had commenced its suicide bomb missions. At its height these missions killed 47 Israelis in a 30 day period. Since that time Hamas munitions have exploded in discos, restaurants, hotels and buses.³⁰

Organization

As an organization, Hamas is interwoven into the structure of the Muslim Brotherhood. The initial leadership of Yasin and his founding members soon gave way to a committee structure that manages areas such as politics, security, military operations and the media.³¹ Organization guidance is provided by the Majilis Shura, a consulting council. The high profile violence has resulted in periods where the leadership suffered significant losses. Often these losses were due to deportations or imprisonment.³² Its association with the Brotherhood provides continued link to infrastructure entities such as schools, libraries, clubs and mosques.³³

Growth

Hamas' political arm has grown to such popularity that it won the January 2006 Palestinian parliamentary election over the PLO. This political upset moved Hamas to the forefront of officially representing the Palestinian people and the Palestine National interests. The PLO refused to relinquish power and Hamas forcibly took control in June 2007.³⁴

2.1.3 Palestine Liberation Organization

The more secular Palestinian Liberation Organization is an umbrella organization dedicated to the establishment of a Palestinian state within the borders of Israel. Most notable of the organizations under the PLO umbrella are al-Fatah, as-Saiqa and the Popular Front for the Liberation of Palestine.³⁵

Al-Fatah

Al-Fatah was established in 1957 by Yasser Arafat while he was exiled in Kuwait. A member of the Muslim Brotherhood since 1952, Arafat chartered al-Fatah to obtain full Palestinian independence.³⁶ To achieve this goal, members employed armed conflict. Al-Fatah gained full control of the PLO in 1967 and remained so until Arafat's death in 2004.³⁷

As-Saiqa

As-Saiqa is a Syrian based Palestinian Liberation faction that was formed in 1966 by Baa'th Party members as an alternate to Arafat's al-Fatah. The Syrian government is believed to have aided the force as it has become an important military unit to Syria. As-Saiqa was ousted from the PLO after supported several Syrian campaigns against that organization.³⁸

The Popular Front for the Liberation of Palestine

Another of the PLO's umbrella organizations is The Popular Front for the Liberation of Palestine. The PFLP is a communist leaning group founded in 1967 by PLO member George Habash, after the Arab-Israeli War.³⁹ The PFLP is internationally

focused, adamant in its opposition to peace negotiations with Israel. Because of its communist infrastructure, the PFLP is also anti-Islamist regime.⁴⁰⁴¹

Organization

The PLO uses three governing bodies: an Executive Committee, a Central Committee and a National Council. The Executive Committee is actually derived from the National Committee. Created in 1973 by the National Committee, the Executive Committee is actually a subset of the National Committee. Its 18 members remain in permanent session with the objective of implementing the plans, programs and policies of the National Committee.⁴² The Central Committee was created in 1970 to manage emergency conditions with Jordan. It consists of the Executive Committee, the chair of the National Committee and a representative of its each of the PLOs subordinate organizations.⁴³ The Palestine National Council is the PLO's supreme authority. This 21 member body devices policy, represents the organization internationally and examines the organization's effectiveness through review of the Executive Committee's assessment reports.⁴⁴

Growth

Estimates are provided for some subordinate organizations, but current membership numbers for the PLO are unknown.⁴⁵

2.1.4 Hezbollah¹

Often referred to as the Islamic Jihad or Party of God, Hezbollah is an umbrella organization composed chiefly of Shiite groups.⁴⁶ Like the other organizations,

¹ Hezbollah is also referred to as Hizbollah, Hizbu'llah or Party of God (Allah)

Hezbollah seeks the removal of Israel from the Middle East region and the establishment of an Islamic state. In addition, Hezbollah demands removal of all Westerners from Lebanon.

Hezbollah began in 1982 under the leadership of followers of Sheikh Khomeini and members of the Islamic Revolutionary Guards. It was a response to the Israeli attacks on Lebanon and several missions were initiated against Israel before the members declared their manifesto in February 1985.⁴⁷⁴⁸ Since then Hezbollah has focused on the Middle East region where one of its most renowned simultaneous bombings was the concurrent 1996 attacks on the US Marine and French soldier barracks.⁴⁹ It has also specialized in kidnappings of Westerners.⁵⁰ Hezbollah's training camps have been used by several terrorist organizations.⁵¹

Organization

Hezbollah uses a pyramid organization. Its base membership is individuals who have adopted the goals set forth in the manifesto.⁵² They must pass a personal behavior and religious beliefs review before membership is actually conferred.⁵³ Members of this base rise in the ranks as they prove adherence to the Party.⁵⁴ The leadership consists of several Boards or Assemblies and the al-Shura or Council.⁵⁵ The Boards include a Jihad Assembly, the Political Assembly, the Executive Assembly, the Parliamentary Assembly and the Judicial Assembly.⁵⁶

The Jihad Assembly plans and executes fighting missions.⁵⁷ Because of this they are responsible for all actions related to recruiting, training, equipping and protecting.⁵⁸ The Political Assembly provides the Council with the information needed to interact with

the political aspects of Hezbollah's goals.⁵⁹ This area has, at times, included working with national political efforts.⁶⁰ The Executive Assembly administers a wide variety of activities including education, social and professional. It also controls actions governed by a Board of Directors subset.⁶¹ The Parliamentary Assembly monitors and supervises legislative responsibilities ensuring that the position of the Party is adhered to.⁶² The Judicial Assembly offers members decisions when disagreements arise.⁶³

The Shura has purview over all assemblies and issues the policies and goals the others implement. A Secretary General presides over all the other leadership members, administering and managing the groups.⁶⁴

Growth

Hezbollah originally operated in Lebanon but has expanded to North and South America, Asia and Europe.⁶⁵ The actual membership number is uncertain; but it is estimated in the thousands.⁶⁶ Hezbollah inter-organizational reach is vast, extending to several groups including al Qaeda.⁶⁷ It is reported that as the leader of an abecedarian organization, bin Laden sought the help of Hezbollah.⁶⁸ Over the years members of the two groups have collaborated, demonstrating an ability to focus on promoting Islam and removing Israel rather than their Shiite-Sunni differences.⁶⁹

2.1.5 Al Qaeda

The Sunni group Al Qaeda was initially created by Abdullah Azzam.⁷⁰ Abdullah Azzam was a member of the Muslim Brotherhood who had fought the Israeli forces on the West Bank and the Jordan. When the fighting ceased Azzam turned to education and completed his PhD in Islamic law.⁷¹ He then began to teach and write; one of his books

The Defense of Muslim Lands is still used today to train terrorists.⁷² In this treatise Azzam interpreted the definition of jihad to mean all Muslims had a duty to support, by whatever avenue possible, the defense of Islam.⁷³ He issued his religious decree; and through that decree influenced many to support the struggle against Israel and the Soviets.⁷⁴

During this time he lectured at King Aziz University where Osama bin Laden heard Azzam's position on jihad and the defense of Islamic honor.⁷⁵

After the Soviets invaded Afghanistan, Azzam journeyed to that country to help.⁷⁶ Once there he recognized that the fighters needed to better manage their circumstances. He created the Maktab al-Khidmata lil Mujahideen (MAK) to provide this management service to the fighters.⁷⁷ When Osama bin Laden arrived to support the fight, Azzam recognized bin Laden's management skills and convinced him that he could better serve the struggle against the Soviet Union by applying his strong management background and financial resources to the movement. Bin Laden did this and as the movement grew, he and Azzam learned to focus on their individual areas of expertise.⁷⁸ Azzam recruited and interacted with organizations and individuals needed to ensure widespread dissemination of the call for recruits to fight the Soviet invasion of Afghanistan.⁷⁹ Bin Laden focused on the administrative, reverting to his King Abdul Aziz University training in management and control.⁸⁰

Bin Laden went on to create the House of Allies (Bait al-Ansar) to provide information and aid to families concerned about loved ones fighting the Soviets.⁸¹ He

started training camps and ensured a constant flow of funds to support the effort.⁸² The rebels won their battle against the Soviets, with the help of the United States.⁸³

Afterward both Azzam and bin Laden wanted to retain the capability they had honed in their rebel force. They differed on the future focus of this force.⁸⁴ The disagreement became moot with Azzam's untimely death in a car bomb explosion.⁸⁵

After Azzam's death, bin Laden assumed control of the nascent group, focusing on the broader mission of defending Islam from outside influences.⁸⁶ He initiated the transition to his new organization by instituting efforts to improve member relations, compared to those that existed with the MAK.⁸⁷

To do this Bin Laden met with members to learn how they felt about the organization's functioning.⁸⁸ He used the information these members provided to establish the workings of his al Qaeda.⁸⁹ This new force took their new mission of fighting for Islam and disseminated it to their comrades when they returned to their homelands..⁹⁰ They soon began to implement this mission focus.

Between 1991 and 1996 his forces were credited with terrorist events in Yemen, Somalia, Egypt and New York City.⁹¹ They are also said to have perpetrated the Khobar Tower barracks raids (Saudi Arabia) of 1995.⁹² Bin Laden's communiqués and messages increased in anti-American rhetoric.⁹³ Al Qaeda activities returned to the US with the events of September 11, 2001.

Organization

Documents recovered from captured al Qaeda members identify a formal and informal organizational structure for al Qaeda.⁹⁴ The formal architecture presents an

Emir, Deputy Emir, Secretary, Command Council and committee structure that manages military, political, administrative and financial affairs for the organization.⁹⁵⁹⁶ The Command Council is also a Shura, or Consultative Council, as prescribed by the Holy Qur'an.⁹⁷

The Emir offers overall guidance for the organization and represents it when needed. He works to achieve the goals set by the Council and approves and disapproves several plans like the Annual Plan and Finance Plan. In addition, the Emir provides legal rulings through the issuance of fatwas.⁹⁸

Members of the Command Council are selected by the Emir. They act as a consulting body for his operations decisions.⁹⁹ Only the Emir and the Deputy Emir are higher in authority.¹⁰⁰ The Council discusses policy and can amend the bylaws for the Emir's approval.¹⁰¹ It may even create or dissolve commissions or committees.¹⁰²

The Committees deliver day to day development of organizational support. For instance the Military Committee ensures appropriate recruiting, training and Jihad skill development. This Committee has a President and several sections, one of which is a Nuclear Weapons Section.¹⁰³

The Political Committee disseminates information to the members and Islamic countries al Qaeda seeks to influence.¹⁰⁴ It ensures the reports and documents are produced that support al Qaeda's positions and it trains members to execute the political agenda of al Qaeda.¹⁰⁵

The Administrative and Financial Committee executes operational and financial requirements.¹⁰⁶

Al Qaeda also has an informal structure that consists of portfolio managers who manage activities in a particular region, financiers who pair funding to activities, and communications experts who enable protected internet information flow.¹⁰⁷ ¹⁰⁸ ¹⁰⁹ The funding is crucial to al Qaeda network functions.¹¹⁰

These regional personnel work through local cells that are reiterative in nature, This redundancy is hidden, at times, to ensure success.¹¹¹ The actual fighting personnel, their families and the couriers used for direct communication are this group's peers.¹¹²

Growth

Al Qaeda's presence has expanded significantly since 1989. The actual number of al Qaeda members is uncertain. Experts have agreed that al Qaeda is globally represented. Cells are known to exist in Germany, France, the United Kingdom, and the United States.¹¹³

2.2. The Changing Face of Terrorism

Bin Laden began introducing a business perspective into terrorism during a period when al Qaeda recruited personnel the industry leaders did not market.¹¹⁴ Industry leaders centered their efforts on obtaining a homeland for the Palestinians and removing Israel as a presence in the Middle East, not removing secular influences from Islam.

2.2.1 Bin Laden's Business Perspective

Bin Laden developed a business perspective from his University studies and his family construction firm experience. He studied at the King Abdul Aziz University's Management and Economics School occurred during a period when Islamic economics and jihadist theory flourished on Middle East university campuses.^{115,116,117}

Academic programs emphasized Islamic values, proposed incorporating Shari'a into economic institutions of the land, and promoted adherence to the Holy Qur'an when conducting local, national and international business. Many of the courses were taught by professors recently returned from exile in Syria, Egypt or Jordan. A few of these scholars were also members of the Muslim Brotherhood.¹¹⁸

2.2.2 Islamic Economics Definition

These adherents of Islamic economics ensured that market and management principles requiring an understanding of business markets, their functions and demographics were included in the curriculum.^{119, 120}

Bin Laden and His Market

Bin Laden demonstrates an extensive understanding of these demographics and most effectively utilizes this understanding when addressing his internal constituent groups. With each address he, articulates the Islamic requirements of: unity, a good work ethic, and equitable distribution of the world's bounty.¹²¹

2.2.3 Islamic Economics

This in no way infers that Islamic economics is a proponent of terrorism. Rather it is an observation that an adherent of terrorism may have employed Islamic economics to achieve his business goals.

However, a short review of Islamic economic principles and practices may provide an understanding of this discipline's blend of Shari'a law, market tactics and management procedures.

Islamic Economics Principles

Under Islamic economics the tenets of Islam, and their values, are the scope through which all actions are viewed.

Islamic economic theory approaches business management and the optimal allocation of resources through Shari'a law. By incorporating the principles of Islam into transactions, this economics system applies the general principles of Western economics to a social science perspective.¹²²

Tenets of Islamic Economics

There are three primary principles of Islamic economics: Unity, Work and Productivity and Distributional Equity.

Unity (Tawheed)

The principle of unity, or Tawheed, refers to the ideal approach men should take when interacting with each other prescribed by the Holy Qur'an.¹²³ Sometimes termed Brotherhood, this principle is considered the most important of the three principles because it proposes a fundamental structure of social justice as the basis for allocating resources, maximizing utility and maximizing profit.¹²⁴ This social justice allocation of resources has the intent of fostering actions that incorporate the postulate that all belongs to God and that men must therefore distribute God's resources as God would.¹²⁵

Work and Productivity

The second principle is the concept of appropriateness of wages distributed for work performed.¹²⁶ The principle advocates rewarding work with an appropriate level of remuneration. The premise is to prevent transgressing through excess.¹²⁷ No one is permitted to benefit from an input or resource to which he (she) has not contributed

directly.¹²⁸ Therefore a man could rent his land to someone for the purpose of growing produce.¹²⁹ But all the produce cultivated belongs to the renter.¹³⁰ The land owner cannot extract an additional benefit of the land by receiving any of the produce without fairly remunerating the grower.¹³¹

Distributional Equity

The third principle, distributional equity, reiterates the right of the people to receive support payments from redistributed Tawheed funds.¹³² Therefore a wealth tax, or charitable contribution is seen as an avenue to benefit widows, orphans or the aged.¹³³

Implementing the Tenets

Ideally, implementation of these tenets supports a national economic system that translates into a viable real world process for everyday macro and microeconomics procedures.¹³⁴ Each principle encourages positive social behavior while discouraging negative.¹³⁵ For instance, Tawheed is purported to encourage balance in ownership in order to eliminate exploitation of the worker.¹³⁶ The Principle of Work and Productivity is established to encourage cooperation, fairness and profit sharing.¹³⁷ Its intent is to discourage distorted competitiveness and unfairness.¹³⁸ Distribution equity requires the state to ensure that God's resources are enjoyed equally by all inhabitants under that state's protection.¹³⁹

Most policy developed by followers of Islamic economics focus on eliminating interest on capital, instituting a system of shared profit and loss on economic endeavors, eliminating wasteful consumption and organized distribution of resources obtained from

taxed wealth.¹⁴⁰ The overall premise is to increase the utility derived from pleasing God through motives and actions steeped in social justice and fairness.¹⁴¹

2.2.4 Al Qaeda and Islamic Economics

Prior to al Qaeda, terrorism management practices focused on the terror event not the organization.¹⁴² In 1989 al Qaeda started its transition from a rebel force to international terrorist organization. This occurred during a period when the international community overlooked al Qaeda, offering the fledging organization time to flourish. During that time bin Laden offered his small targeted audience several incentives to remain with al Qaeda, even though the Afghanistan struggle had ended.¹⁴³

Most of those incentives were enveloped in business devices used to construct a firm.¹⁴⁴ He developed by-laws that centered on expressing Islam through the activities of the organization.¹⁴⁵ He provided an employment contract that offers incentives for a “fair work for fair pay” fulfillment of “work and productivity” obligation.¹⁴⁶ He also provided written goals and structure that extend the outreach of al Qaeda to the families and members of al Qaeda who need assistance and support.¹⁴⁷

Al Qaeda Market

Bin Laden, aware of the importance of orthodoxy to his core market, takes every opportunity to demonstrate Shari’a fulfillment to these internal and external audiences.

(Table.1)

Table 1. Al Qaeda Internal/External Audiences

INTERNAL AUDIENCES	EXTERNAL AUDIENCES
Trainees	Prospective Members
Network Cell Members	Suppliers
Network Supervisors	Alliance Members
Planners	Investors/Prospective Investors
Leadership	Opponents
	General Muslim Population
	Retirees/Former Members
	Muslim Media
	Western Media
	Muslim Governments
	Western Governments
	General Western Populations
	Members' Families

To accommodate these audiences, bin Laden may incorporate the tenets of Shari'a into each of his messages weaving the basic tenets of Islamic economics as well. These tenets: 1) distributional equity, 2) tawhid/brotherhood, (i.e., the oneness concept that all is from the Creator) 3) work and productivity act as a common ground to connect to all other followers of Islam to each other and al Qaeda. His communiqués ensure that all followers of Islam are reminded of their duty to be: first, social and religious and second, ready to balance their desire to fulfill any wants with the fair and equitable distribution of

available wealth. Bin Laden also makes it clear a true follower of Islam must integrate Islam into all economic choices.¹⁴⁸ These messages and concepts serve bin Laden in good stead when jihad obligation is touted and fund raising efforts are exerted.¹⁴⁹

The format of each communiqué emulates a format successfully used by the respected 14th century Islamic sociologist/economist Ibn Khaldun.¹⁵⁰ Ibn Khaldun first framed his argument historically; he then offered reasons for the situation, presented the problem and finally suggested a detailed solution.¹⁵¹ Bin Laden has appropriated this approach to accommodate his audience.¹⁵² His historical references place his declared jihad in context; his reasoning positions the West as the target to revile; his delineation of the problem contrasts the vulgarity of the secular West to the virtuous principles of Islam; and then his presentation of his concept and its results always ensures Islam is the only logical choice.^{153,154}

Central to each message is the social nature of man and the relationships he must navigate. Bin Laden adapts the science of Islamic economics to his brand of terrorist networking, retaining the requirement for the individual to fulfill his obligations to the members of his/her social network.

Al Qaeda's Leadership Position

Bin Laden has skillfully guided al Qaeda to the stature and efficiency of an international Fortune 500 Corporation. He approaches al Qaeda as a business of trust and relationships. Terrorism is the industry in which his business functions.¹⁵⁵

In an interview very soon after the attacks of September 11, 2001 Osama bin Laden framed the effects of that attack economically when he boasted that the US stock market

loss reached a record \$640 billion.¹⁵⁶ And, he continued, this loss was achieved with an attack that lasted only one hour.¹⁵⁷ In subsequent interviews he compared that US loss to the al Qaeda investment of \$500,000.¹⁵⁸

Framing the results in a business perspective permitted bin Laden a platform to address all of his constituent groups. He could assure his investors that their confidence was well placed, motivate his followers by showing them that the effort was worth it, and inspire pride in the general Muslim population with his ability to launch a raid and economically seize the upper hand within the infidel's own land. Through the attacks al Qaeda and its leader found a global line of communication to announce its world stage leadership position. To get to that position, al Qaeda had survived for more than 10 years as an innovator in the field of terrorism.

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3. Methodology

The methodology² for the social network analysis of al Qaeda's communication/influence consisted of a literature review, a management survey and an analysis of the al Qaeda social network relationships. The results of the analysis served as input for:

- 1) creation of an evidence based annotated bibliography
- 2) identification of new research and/or continued inquiry directions
- 3) modeling efforts
- 4) development of policy suggestions
- 5) publication and collaboration opportunities

3.1 Literature Review

The initial literature review identified and selected sources of information by search terms and phrases. The initial data identification began with Internet searches using browsers such as Alta Vista, Lycos, Google, Mozilla, Infoseek and Excite. I also accessed the online catalogues of George Mason University and George Washington University, identifying sources from their stack and online collections. These university collections provided access to online Library of Congress and other Government agency

² This research study utilizes the Western spelling of terror organization names for ease of the intended audience.

collections, including the General Accounting Office and the Defense Technical Information Center. Government specific agency sites included Homeland Security Watch, CIADirect, and Interpol.

One of the unique qualities of Biodefense is its rapid change. Because of this, I accessed current news sources outside of peer reviewed journals and scientific books. Among those sources were online news services like World News Connection, online Middle East news outlets (English), and online television outlets. Chief among these news services were LINKTV/Mosaic, Public Broadcasting Service, and al Jazeera – English. Evaluation of the data resulted in a ranking system: very relevant, relevant, minimally relevant, and not relevant.

Terrorism data collection centers accessed included the International Institute for Counter Terrorism, West Point's Combating Terrorism Center, the Air Force Counter Proliferation Center, and the University of Michigan's Library Document Center.

The Global Research in International Affairs (GLORIA), the Council for Foreign Relations, the Hudson Institute and the Center, the International Institute for Counterterrorism provided interdisciplinary research information. Online magazines like Kvali, and Islam Online offered additional perspective. The internet library Internet Archive offered limited access to al Qaeda videos, speeches and publications. It also provided access to significant historical Islamic texts. Additional sources of information were provided by referrals from individuals familiar with my research topic. One referral introduced me to the Mid-East Realities and Allaahuakbar.net.

Social network specific data was acquired through interviews, online investigation and publications. Techniques were acquired through workshop attendance, business faculty discussions, and social network analysis

Islamic doctrine, publications and internet sites provided assistance in understanding the significant role Islam plays in Muslim business and social interactions. included the International Institute for Islamic Thought and Al Islam, the website of the Ahmadiyya Muslim Community in the United Kingdom were just a few of these outlets. Islamic doctrine texts included the Qur'an, the Sunnah and many treatises on Islamic jurisprudence.

After review of approximately 1200 sources, 469 articles, books, speeches and videos met the criteria for inclusion in the bibliography. The following diagrams and flow charts are a graphic summary of the information search.

Key Words	
Terrorism	Al Qaeda
Chemical	Osama bin Laden
Nuclear	Abdullah Azzam
Radiological	Muslim Brotherhood
Incendiary	Management
Explosive	Social Network
Biological	Affiliates
Business Management	
Innovation	Business
Religious Doctrine	Innovation
Organizations	Management
Jihad	Transaction Cost Economics
Islam	Social Network
History	History
Tenets/Principles	Organization
Islamic Economics	relationships
Jihad	Analysis
	Software/tools

Figure 1. Example of Key Word Identifiers Used in the Literature Search

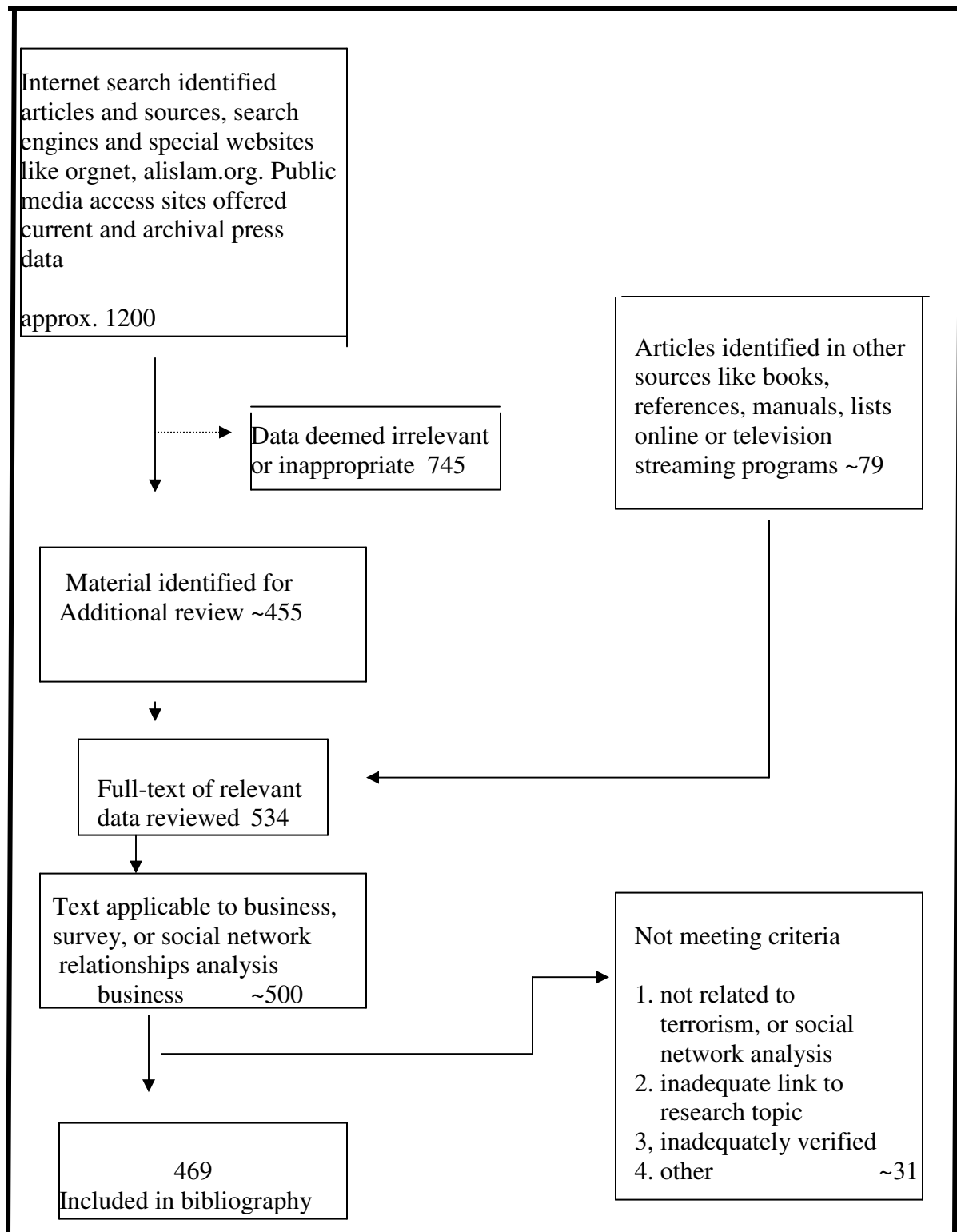


Figure 2. Flowchart of Relevant Data Selection and Bibliography Development

3.2 Survey- External Evaluations

The survey was disseminated to 26 experts; eight questionnaires were completed and returned. The literature review aided identification of criteria for definition of term “expert”. Criteria included authoring books, articles in peer reviewed publications or editing terrorism databases. The information published had to include a position or information on al Qaeda as a business organization. Individuals who met the criteria were invited to participate in the survey. Standard methodology for administration and review of the management survey was executed. Standard statistics were applied to the respondents’ returned survey results.

The survey is presented at Appendix F. It was designed to obtain a better understanding of terrorist organization business practices through the terror experts’ perceptions of al Qaeda’s management. Divided into three sections, the survey’s first section captured limited demographics from the experts. The second section sought the experts’ opinions on al Qaeda’s business and operational practices and the third section asked their view of al Qaeda’s strengths, weaknesses, opportunities and threats. Once the results were gathered, several quantitative analysis measures were applied on the results, including Likert, Chi Square, and some Descriptive Statistics. The survey was reviewed and approved by the GMU HSRB (Human Subjects Research Board).

3.3 Social Network Analysis

The social network analysis utilized matrices constructed after assessing source material on 22 events attributed to al Qaeda. These matrices acted as input to the

computational model social network software, Organization Risk Analyzer. Statistics resident within the software were applied to the matrix data. In addition an author generated index, the Communication-Influence Index, was applied to specific derived social network matrices.

Computational Modeling

Computational models provide researchers with an avenue to characterize organizations by their dynamic and/or adaptive natures.⁷⁰ By simulating an organization's multilevel nature, the researcher can objectively represent its cultural and social attributes in order to identify future behavior indicators. Simulation also permits researchers to determine primary organizational attributes.⁷¹

For example, homogeneity may be important in some organizations, while diversity may be important in others. Using known information to populate the model, the researcher can uncover those phenomena that offer significant perspectives on the nature of the organization and the transactions it effects. Among the aspects of an organization that the models seek to capture is the concept of enculturation. Enculturation is the ability of the organization to communicate its culture and norms to new or guest members and the ability of the new organization member to accept the culture, and make it his/her own.⁷²

Social network analysis is a computational tool that maps and measures the relationships and information flows between people, groups, and organizations that constitute an information or knowledge processing system. Social network methods provide both visual and mathematical analysis of human relationships. Visualized as a

graphical network of nodes, this analysis tool illustrates connections through which individuals and groups operate in order to achieve their goals. Social network analysis merges aspects of sociology, anthropology and social psychology into organizational theory. The shape of the network can offer indications of the network's usefulness to individual members. Smaller networks may not have the same opportunities available to larger, more loosely connected networks. These "more open networks" may offer avenues to new ideas and concepts. While these more open networks may not have a strong a connection, their "weak ties" can provide the social connections to innovation and knowledge that closed networks with redundant ties do not. These weak ties may also act as bridges between two networks that are not directly linked. Each network may have a capability-need that the other could fulfill. Once these needs are fulfilled, each has shored a social hole and created a means to further joint venture activity.

Social Network Measurements

Social network analysis considers the ties that link organizational actors, be they familial, friendship, business, or physical and establishes a linkage in order to the detect and interpret any patterns of social ties among those same actors. There are several measures used to describe such ties, including centrality betweenness, closeness and eigenvector.

Centrality is one of the oldest concepts in network analysis. Most social networks contain people or organizations that are central. Because of their position, these entities have better access to information, and better opportunity to spread information. This is known as the ego-centered-approach to centrality. The network is centralized from socio-

centered perspective. The notion of centrality refers to the positions of individual vertices within the network, while centralization is used to characterize an entire network. A network is highly centralized if there is a clear boundary between the center and the periphery. In a highly centralized network, information spreads easily, but the center is indispensable for the transmission of information.

Centrality betweenness offers a means to capture the importance of a vertex to the circulation of information. In effect, betweenness tells us how central a person is to other people and/or information in the network. The higher the betweenness centrality the more significant an intermediary we have in the information and communication network. Information chains are represented by geodesics and the betweenness centrality of a vertex is simply the proportion of geodesics between other pairs of vertices that include the vertex. The centralization of a network is higher if it contains very central vertices as well as very peripheral vertices.

Centrality closeness is a measure that considers the direct and indirect ties of an actor. It estimates the productiveness of any information communication between actors by looking at the distance between and the location of those actors to each other.⁷³ The basis for this view is the idea that the closer the actors are to each other the less they need to rely on others within the network to relay information.⁷⁴ Using this measure, an actor may not have the most number of connections, but that actor might have the shortest distances to everyone else. This would indicate a high closeness rating.

Eigenvector closeness measures the importance of the node. With this measurement a researcher has an indication of the “connectiveness” of an actor. That is

an actor who is connected to other actors, who are well connected, would have a higher score than an actor who is connected to actors who are less well connected.⁷⁵

4. Results

Together the literature review, business assessment, and social network modeling evince the impact of business management tools on the terrorism industry and potential weapon or mission selection.

4.1 Literature Review

4.1.1 Business Literature

The definition of a business has been deemed synonymous with that of a firm. As initially defined by Coase, a firm is an entity enjoying a specific relationship with its markets and allocating resources to provide that market with products or services.¹ This definition was later refined by Knight and Williamson with the concept of assets and agents incorporated to accommodate as incentives and worker concern for each other.² Current thought suggests representing the influence of worker interactions to capture the unofficial functioning within company groups and cliques. This informal functioning can sometimes represent a more realistic view of the information and organizational flow than the official chart suggests.³

4.1.2 Innovation Literature

Innovation in Western culture is usually defined from a technological perspective. Christensen uses this technology prism as well when he proposes that innovation is a disruptive technology that causes a shift in a market's value equation, after a product is

introduced.⁷ He explains that this shift results in a wave within the industry, a wave that industry leaders are not always ready to ride. For example, when the initial personal computers were marketed they had little storage and required knowledge of coding to function. The more technologically oriented segment of the computer market was thrilled with the product because of the control it offered. But these same technicians were a small percentage of the total market. According to Christensen, this fringe segment was willing to accept the difficulties of coding on the initial equipment in order to achieve more control over their work. This fringe market was not the market of the industry leaders.

The market for the personal computer began to grow. Once the personal computer achieved a foothold it supplanted the lead product, mainframes, and achieved a wider market segment than the initial industry leaders anticipated. It also led to the failure of many of those leaders.

Christensen also suggests that some changes qualify as innovations because they alter/disrupt the norm and frustrate the industry leaders. Using this same disruption definition for the industries that service terrorism similarities became evident to that the changes resulting from bin Laden's introduction of business management to the field of terrorism.

Bin Laden initiated industry changes during a period when al Qaeda was a fringe organization, unfettered by the influences of larger organizations or external major investor concerns. Its members represented a fringe minority that wanted to continue the struggle/resistance against foreign influence. Initially it was against the Soviet Union,

but afterward the West as a whole was the target. Friendships developed; relationships forged; even some weak but important bonds were created. These emergent affiliations effected a change that attracted a minority following. Al Qaeda, a relatively unknown entity at the time, did not represent a threat to the West and was ignored. During this crucial period al Qaeda organized and improved its operations, ultimately deciding on the best business approach to take to its market and its stakeholders. In a very real sense al Qaeda has achieved the success of the personal computer. It has overtaken the established terrorism industry leaders and is now the brand name by which terrorism is defined.

Analyzed from a national perspective, innovation in the United States, particularly innovation in war, is important from an economic growth and productivity standpoint. However, the current conflict moves beyond the purely economic in that it demonstrates the innovation of relationships and their effect on operations. It also reveals the influence of culture and religion on those relationships.

A similar approach was taken by Meeusen when he framed it by Freeman's definition.¹¹ Freeman defined national innovation as a process that encompassed the network of actors who develop, modify or implement new products, new processes or new organizations. Meeusen reasoned that this approach reached beyond the physical borders of a nation to encompass all the global economic areas touched by the products or processes of the nation's actor network.¹² The network relationships permit information sharing, problem solving, and ultimately, security protection.¹³ The information sharing and problem solving are demonstrated in the ability of these

relationships to facilitate actor interaction.¹⁴ Security protection is demonstrated by the continued inability of Western law enforcement agencies to infiltrate al Qaeda.¹⁵

4.1.3 Network Literature

As early as the 1960s social network analysis linked network relationships to the disciplines of economics, marketing and industrial engineering.³ This research also provided the foundation for understanding the importance of trust and social relationships in religious doctrine focused organizations. Understanding the effect of trust and social interaction permitted better appreciation of the variations in relationship ties: that is the strong ties versus the weak one and the weak versus the informal. This organizational trust and its associated ties are particularly important to facilitating an organization functioning and coordinating economic activities.

Network Trust and Relationships

According to Greif, using trust and relationships to forge an economic network has precedent in organizations like the 11th century Maghribi traders during the Islamic influence on Northern Africa trade.¹⁶

Greif discusses network effectiveness from a coethnicity perspective, examining coethnicity's role in the establishment of social and economic relationships. These relationships were often fabricated on social ties rather than formal contracts.

Greif uses a secular argument to demonstrate that the relationship can be the backbone of viable economic practices, religious or not. Greif suggests it actually has

³ This information references, Coulon, Fabrice, "The use of Social Network Analysis in Innovation Research: A Literature Review", page 1, Lund University, Sweden, Division of Innovation, January 17, 2005.

been the backbone of such relationships since the Maghribi traders relied on trust to motivate and enforce contracts and trade.

These economic activities were independent and competitive, with associates acting as agents in other geographic locations.¹⁷ Greif shows that reputation and trust governed the transactions and costs were kept to a minimum through the use of shared risk.¹⁸ Traders shared the risk by operating through a coalition. This network of flexible relationships permitted an absent trader representation for a lucrative transaction, a poor trader the benefit of support from a wealthier trader's knowledge and a sedentary trader access to wares available through the more well traveled routes.¹⁹ The group, per Greif, did not associate with Jews who cooperated with Christians and the traders established their own communication/influence avenues.²⁰

Rauch builds on Greif by taking the concept of international business and social networks that function from a coethnic perspective and looking at the "moral community" this network has created.²¹ However, while Greif believes the system repressed innovation, Rauch contends that the network offered ample avenues to communicate potentially profitable possibilities.²² Rauch looks at the network as the business group that can effect positive network import and/or export associations, and the commodity is an entity whose movement between these associations is determined by the network's needs and knowledge base.²³

Coethnicity Versus Coreligiousness

Bin Laden alters the coethnicity-business success equation by substituting the coreligiousness of al Qaeda members. The effectiveness of coreligiousness is demonstrated

by Zahab and Roy in their discussions of the jihadist movement in Pakistan and Central Asia.²⁴ The demand to return to a strict Islamic ideology devoid of local conventions permits a religiously homogenous growth across previously contentious geographic arenas.

Zahab and Roy assert this extends even to groups that had varied ideological beginnings. These groups form a unit that enjoys the benefit of oneness of purpose through Islam.

Functioning from within this “oneness” unit, bin Laden’s al Qaeda uses the concept to buttress his communiqués, ensuring each transmission employs an Islamic perspective to its economic use of any resources.²⁵ The homogeneity of religion is the crucial element leading to the establishment of cross geographical relationships formed during training sessions, living arrangements, or mission assignments.²⁶

El-Ashker declares that relationships between individuals must remain the highest concern when implementing Islamic principles in an economic relationship.²⁸

Terror Network Modeling Literature

According to terrorism expert Brad McAllister the innovative relationships forged by al Qaeda may be the means to inhibit the progress al Qaeda has reputedly achieved in acquiring a weapon of mass destruction.²⁹ McAllister believes al Qaeda’s innovation network is vulnerable, and that, with the appropriate strategy we could administer a serious blow to its operations.³⁰

Some of that hope rests in terror networking. This growing field offers new ways to peer into terror network operations. Carley suggests modeling a multi-agent

environment as a means to a more appropriate representation of the terror network and permits us to learn more about the entities and ties that encompass a terror organization.³¹

Dynamic Social Network Modeling and Analyses, which is a collection of articles on the subject, offers much insight into this evolving approach to terror organization examination.³² Carley demonstrates how dynamic network analysis connects what could appear to be disparate events by mining the vast information available and matching agent characteristics to determine primary network procedures.³³

In another work co-authored by Tsvetovat and entitled, “Structural Knowledge and Success of Anti-Terrorist Activity: The Downside of Structural Equivalence,”³⁴ Carley suggests that terror network simulation is difficult but possible. Their efforts focused on network destabilization strategies and the limited results achieved indicate reliance on eliminating individuals is not an appropriate method of destabilizing al Qaeda.³⁵ Limited intelligence and the ability of the terror network to heal itself when individuals are removed from physical functioning force us to acknowledge the network’s efficient self-repair and members continued ability to influence “in absentia”.³⁶ In a second work, Carley looks at the relationship of terrorism users and terrorism tasks in an effort to establish a valid multi-agent simulation models.³⁷

Table 2. Network Meta-Matrix³⁸

	Individuals	Information/Capability	Assets	Assignment
Individuals	Ties between agents; network information; chain of command information	Who knows what information and who has what capability	Who has what asset available for mission	Who is assigned what duty to accomplish mission
Information/Capability		Capabilities Matching	Training to use assets appropriately	Training to use assets appropriately
Asset			What assets complement each other	Assets needed to accomplish mission
Assignment				Order and priority of missions

In the work, they propose a “meta-matrix” to describe the attributes, groups and concepts we could include in order to more accurately reflect terror network activities. They conclude that these types of models permit us to speculate even when we are hampered by the imperfections of limited and uncertain information. They also proffer suggested attributes for a successful simulation model and test one example to illustrate their theory.

One demonstrated success using this method was the computer assessment that accurately identified the successor to Hamas leader Sheik Ahmed Yassin, prior to his assassination in 2004. Using DyNet, a scenario driven program, Carley identified links between terrorists and their associates.³⁹ She looked at the resources available to Hamas,

the events that took place and the locations of many of those events and meetings. Her analysis then looked at the flow of information to focus on previously undetected connections. According to Carley, removing Osama bin Laden is not the answer. Terror networks are decentralized organizations.

Removal of even the most clearly identifiable leader may temporarily weaken the organization, but it does not permanently impair..

Novikova notes that networks emphasize collaboration and promote an independent social structure.⁴⁰ She offers their social structure as the reason networks are more conducive to innovation than firms. Burt seconds this opinion. But, Burt takes the structure farther by arguing that social capital is created when the connections that could exist between network agents is marketable.⁴¹ These connections are opportunities for information development and transfer. Both of which are key to network structure and a network's effectiveness.

Cohesion and range are also important and they are the subject of studies conducted by Reagans and McEvily. To Reagans and McEvily, a network's cohesion and range offer the most significant interest because of the relationship ties and complexity that is needed for effective information dissemination.⁴² This effectiveness is demonstrated in the network ties' ease of information transferred, source of information moving and the paths through which the information moves. Reagans and McEvily allege that a network's density (third party ties) provides the means for imparting new information to the network. In addition, per Reagans and McEvily, this density and the

network's iterative process give it patterns that permit network agents to convey even the most complex ideas.

Al Qaeda Network

For the terrorism community, bin Laden's management becomes an innovation, especially management of this international conglomerate of individual cells called al Qaeda. According to Lawrence, it is this decentralized collaborative network that reflects bin Laden's best innovation: organizing terrorists' actions thousands of miles from the actual event.

Sequist supports this premise when he reiterates the organizational network potential bin Laden's best innovation.⁴³ Pierce acknowledges this al Qaeda innovation capability as well when he refers to the actions of 9/11. It was to these terrorist actions that he applied the term "disruptive innovation."⁴⁴

This disruptive innovation capability takes an added dimension when we consider al Qaeda's attempts to acquire biological weapons. Several biological agents and pathogens are readily available, throughout the world. M-CAM's Annual Global Technology Assessments identify the worldwide availability of toxin, nanocrystals, and biometrics.⁴⁵ The Center for Nonproliferation Studies' also has a vast library of bioterrorism material and documentation that discusses terrorist groups' attempts to acquire chemical, biological, radiological or nuclear agents.

Included in this material is a comprehensive "Chart: Al-Qa'ida's WMD Activities" listing that describes al Qaeda actions to secure, produce and distribute chemical, biological and nuclear weapons.⁴⁶ One listing describes the discovery of al

Qaeda computers containing plans to launch a biological weapons program. The chart also cites a report that indicates bin Laden purchased three chemical biological warfare factories in Yugoslavia. Bin Laden may have also made overtures to scientists from the former Soviet Union, asking them to work for him and his cause.⁴⁷ If these reported attempts succeed and he produces and disseminates a biological weapon, 9/11 will pale in comparison. Countering this capability is paramount.

4.2 Business Management Study Results

Prior to al Qaeda, terrorism management practices were primarily focused on the terror event not the organization.⁴⁸ In 1989, as al Qaeda transitioned from rebel force to international terrorist organization, the world generally assumed that terrorists focused on political issues.⁴⁹ The world's attentions, therefore, centered on organizations like the PLO or Hezbollah.⁵⁰

Bin Laden changed this when he enveloped incentives into business devices. He constructed a firm. Bin Laden provided written goals and structure, defined by-laws and detailed employment contracts.⁵³ He also ensured that the universal force of Islam connected his targeted audience by incorporating it into the business' mission statement.⁵⁴ Focusing on Islam, bin Laden unified his unique target audience and created an avenue to introduce the concept of jihad to a wider base. Identifying jihad with Islam and making it the center piece of the organization's mission statement creates justification for requests for resources and subsequent allocation of those resources.

Bin Laden's continued emphasis on Islam when the by-laws (Appendix C) he developed specified organizational functions designed to reflect the Holy Qur'an and

Jihad. These same by-laws designated senior positions that were to be filled by individuals who demonstrate sufficient (as defined by al Qaeda) knowledge of Islamic teachings, particularly as they apply to the Jihad.⁵⁶ Examining captured document translations, several areas indicate the emphasis on a business approach to terrorism. One such area is that which defined the duties of the Emir. According to these sources, the Emir must develop and approve an annual plan, and an annual budget. He must review the Financial Plan and prepare periodic reports.⁵⁷ These periodic reports determine progress of projects and subordinates and capture observations of individuals under his supervision in order to develop these individuals and promote them when appropriate.⁵⁸ In this regard the Emir is required to “treat his followers gently, check on their conditions and solve their problems.”⁵⁹

The goals and structure (Appendix D) designed for al Qaeda, detailed the military, political, information, administrative and financial committees who were to institute an effective management process for identifying, recruiting, training and deploying a proficient group of experts in jihad missions.⁶⁰ The committee structure is based on the requirements of Islamic economics and the wording within the Goals and Structure document ensures that this adherence is evident.⁶¹

The al Qaeda employment contract (Appendix E) identified holidays, vacation, pay, financial assistance and conditions for paid vacation travel. In addition, the contract provided a structure for rewards and punishment and offered general counsel on behavior and religious duties. The contract’s final stipulation specified that recruits understand

that signing the contract obligated them to the pledge of allegiance to the Emir and the organization. Breaking the pledge is tantamount to a sin.⁶⁴

Al Qaeda also developed formal business alliances with other terrorist organizations. Among these organizations were the Egyptian Islamic Jihad, the Jamiat-ul-Ulemae-Pakistan and the Jihad Movement of Bangladesh.⁶⁶ These alliances created opportunities to “contract” for capabilities not resident within al Qaeda itself.⁶⁷

Al Qaeda’s loose network demonstrated incomplete contracting each time it facilitated the exchange of ideas through organizational connections. Incomplete contracting is an alternative when formal comprehensive contract instruments are infeasible. They could not encompass every condition or circumstance that might occur. Rather it behooves all parties to rely on the commitment individual soldiers have to Allah and the cause.⁶⁸ The Al Qaeda Handbook reinforces this commitment with its stated requirement for members to kill those who do not adhere to the precepts of the group.⁶⁹

These members demonstrate a credible commitment to a cause for which they would suffer martyrdom, rather than expose other parties in their “contract” to hazards of the infidel. The contract is not a mere promise, but a trained organizational peer pressured response. Opportunity for human actors to behave in a manner contrary to the accepted norm of the Handbook (and training) is low. The outcomes of these factors mingle and the result is a psychological tie that binds with a subtle hold on all who are a part of the network. The concept of sanctions is not specifically stated in the handbook, but there is a vow to confront and remove all those who do not follow the way of the group.⁷⁰ It would

therefore seem that the human actor is the key to the business perspective of mission execution and the resultant transaction costs equation of al Qaeda.

In addition to organizational instruments, al Qaeda has implemented a return on investment analysis for mission planning and selection.⁷¹ Adherence to this business gauge was recently reported when Zawahiri required planners to go back to the drawing board for a planned weapon of mass destruction attack. He reportedly declared that the derived benefit was insufficient.⁷²

Other areas are clearly outlined. Among those defined domains are qualifications for joining and applying for positions within al Qaeda and dismissal of an employee, a procedure which requires one month notification, and appropriate compensation. Al Qaeda even advertises when positions become available. A 2005 Asharq al Awsat article highlighted an al Qaeda internet employment advertisement seeking a technician and a researcher. The positions were needed in the area of video production and editing to provide international coverage of Iraq, Chechnya and other areas of contention.⁷³ The announcement suggested that applicants pray before applying and that follow-up to applicants would come in the form of email messages.⁷⁴

The innovation of business has created opportunities for at least two generations of veterans. The first is the group which fought in the 1979-1989 engagement and the second generation is the group that participated in the Kashmir, Chechnya, Lebanon, Egypt and Algeria conflicts. A third generation is approaching with members who are participating in the Iraq, Afghanistan and Asian insurgencies. This continued growth is sufficient justification for al Qaeda having to develop its Strategic Plan for 2020.⁷⁵

4.2.2 Al Qaeda Management Tools Survey

. The 75 question survey (Appendix F) was used to assess al Qaeda's innovative business management. It consisted of a multiple-choice Likert scale internet based questionnaire that was distributed to approximately 26 terrorism experts for completion and return. Definition of a terrorism expert is ultimately a subjective one. However, to be included in this category, individuals had to have expressed an opinion, in a publicly available document, on al Qaeda's management and/or al Qaeda's ability to obtain and disseminate weapons of mass destruction. Sources used to identify these individuals included published works and congressional hearing witness testimonies.

Alternative qualitative approaches were examined prior to selecting the Likert scale survey. The two most closely reviewed methods were ethnography and grounded theory. Both of these analysis methods were excluded when it became apparent that direct access to primary sources was necessary to achieve significant results. Given that the largest group of alleged al Qaeda network members is confined to Department of Defense security facilities and is not accessible to non-DOD personnel, I have had to eliminate all qualitative methods that depend on direct interaction with primary sources.

4.2.3 Terrorism Management Survey

In this qualitative phase, I examined al Qaeda's agent-based interrelationships for their influence on al Qaeda's organizational management functions. Specifically, I focused on the direct and indirect communication used to influence the al Qaeda mission decision making process. The objective of the survey was to determine the relationship of business management to the al Qaeda organizational processes.

Three assumptions were used in this phase of the study. The first assumed that the business procedures used to plan missions in the past would apply to future mission planning. The second assumed that relationships that were exploited in order to extract a benefit for planned conventional weapon missions would function in the same manner for WMD missions. The third assumption stated that previous failed attempts to use a specific WMD weapon would not exclude a WMD weapon from future use.

The strategic plan objective of the al Qaeda business-organizational management relationship study was framed to determine: 1) if there is an increased perception that al Qaeda's presence is everywhere and 2) if this perception is impervious.

These two questions permitted the study to focus the effort and still allow pursuit of stated research hypothesis and subordinate questions.

Survey Structure

The actual survey instrument was developed using a template from an online survey company and the results were automatically captured and tabulated for subsequent report population.

The survey's 75 statements were arranged in four distinct parts. Section 1 contained the consent form on which the respondent indicated agreement or disagreement with the consent statements. If the recipient selected the option to "disagree", the system skipped to the end. If the recipient chose to "agree", he/she advanced to statement number 2, where he/she completed general contact information. Section 2 encompassed statements 3-6. These were used to capture fill-in-the-blank demographic information for participant age, sex, education, and occupation. Section 3, the first of two distinct parts

to the survey, contained statements 7-31 to which the participant responded based on his/her general knowledge of al Qaeda's business and management practices. The Likert scale of strongly agree to strongly disagree with “don’t know” as the middle ground choice was provided to respondents.

Strongly Agree	1
Agree	2
Disagree	3
Strongly Disagree	4
Don't Know	5
Total	

Figure 3. Likert Scale of Business Practice Assessment

Section 4 provided the second distinct opinion capturing section. Encompassing statements numbered 32-75, this section asked participants to categorize listed organizational concerns as Al Qaeda strengths and opportunities that it exploits and weaknesses and threats that it strives to overcome. Each of these 43 statements was classified under one of five areas: management, organizational, policy, growth capability or other.

Definitions of strengths, weaknesses, opportunities and threats were provided, in no order of preference or importance to the study. The definitions provided participants:

Characteristic	Definition
Strengths –	Internal favorable characteristics within the control of the business leader.
Opportunities –	External favorable factors in the business environment.
Weaknesses –	Internal unfavorable characteristics within the control of the business leader.
Threats –	External unfavorable factors in the business environment al Qaeda strength, weakness, opportunity or threat, based on your knowledge of al Qaeda's policies and leadership practices.

Figure 4. Definitions of Strengths, Weaknesses, Opportunities, Threats

Survey Administration

After several test runs, it was determined that the estimated time needed to complete the entire survey was 20 minutes. As mentioned earlier, it is understood by the researcher that it is better to administer such surveys directly to the members of the network under review. However, that is currently not possible with al Qaeda. The substitute approach was to distribute the survey to an alternative community that is purported to have some or a significant amount of knowledge on the workings of terrorists' organizations in general and al Qaeda specifically. Review of open source data indicated that a ready community that could substitute is the group generally referred to in the colloquial as "terrorist experts". Because no specific list of criteria was available

that delineated the qualifications needed for an individual to be classified a terrorist expert, particularly in the areas of terror innovation and terrorist business practices, this researcher developed criteria for selection or inclusion in the list of potential candidates that could qualify for the designation. Criteria used to determine qualification for this category of “expert” were:

- Published al Qaeda management or WMD analysis in peer review publications.
- Published al Qaeda management or WMD analysis in open source publications.
- Function as analyst of al Qaeda as an organization.
- Knowledge of al Qaeda as an organization from published meetings.
- Knowledge of al Qaeda from interaction within the Middle East region.

Figure 5. Criteria for Classifying Analysts as Potential Terror Experts

A list of 26 individuals in the United States and Asia were identified. Of the original 26, one referred me to another analyst he felt was more qualified, a second declined to participate because he did not consider himself an al Qaeda expert. A third responded that he does not participate in surveys; and a fourth communicated only

through an automatic response which indicated he would” try to respond to the email notice within 24 hours”.

All 26 were electronically invited to participate and given a two week period in which to complete the survey instrument. A reminder email was disseminated one week after the initial invitation release. A total of 8 experts responded to the survey; a response rate of 30.76%.

Of the eight respondents, three are female and five are male, four have at least some business background. Two of the four two were born and educated in the Middle East for some period of time. Seven of the eight have education through the graduate level; and the age distribution of the respondents ranged from 30.5 to 75.

The initial Likert scale results were numerically represented by qualitative measure: “strongly agree” was given a “1”, “agree” was recorded as a “2”, “disagree” was recorded as a “3”, “strongly disagree” was recorded as a “4” and “don’t know” was recorded as a “5”. This data was summed by question such that each question 7 through 31 received a response numerical total. In addition the responses were totaled by respondent as well.

Survey Respondents Statistics

To aid Chi Square assessment the respondent’s Likert data was classified into three nominal “Accept” or “Reject” or “Don’t Know” categories. These were accumulated by respondent, for all questions posed. A Chi Square was calculated for each respondent’s results against the null hypothesis that “Al Qaeda does not incorporate business management practices into its organization governance procedures.

Al Qaeda Management Practices				
	Accept	Reject	Don't Know	Total
Resp. 1	16	9	0	25
Resp. 2	16	5	4	25
Resp. 3	9	8	8	25
Resp. 4	14	8	3	25
Resp. 5	15	6	4	25
Resp. 6	5	7	13	25
Resp. 7	17	7	1	25
Resp. 8	19	6	0	25
Total	111	56	33	200

Figure 6. Chi-Square Results for Management Practices Hypothesis

The results of the Chi-Square calculations produced a chi-square value of 46.1106 with 14 degrees of freedom. This corresponds to a p value that is much less than 0.001. Therefore the data are consistent with the hypothesis that Al Qaeda does use business management practices and therefore Al Qaeda does incorporate business management practices into its organization governance procedures.

As discussed earlier, four of the 8 respondents had business experience and four did not. A comparison of the two groups was conducted to determine if significant differences existed between the two.

	(Without Business Experience)					(With Business Experience)			
	Accept	Reject	Don't Know	Total		Accept	Reject	Don't Know	Total
Resp 1	16	9	0	25	Resp 2	9	8	8	25
Resp 5	15	6	4	25	Resp 3	16	5	4	25
Resp 6	5	7	13	25	Resp 4	14	8	3	25
Resp 8	19	6	0	25	Resp 7	17	7	1	25
Total	55	28	17	100	Total	56	28	16	100
	.55	.28	.17			.56	.28	.16	

Figure 7. Al Qaeda Management Practices by Respondent Business Experience

When the answers from the business practices experienced group is compared to those from the non business practices respondents we find overall percentages that are comparable. However, the number of ‘Don’t Know’ responses for the non business practice respondents are significantly influenced by one respondent who had 13 of the 17 total for that category. For those respondents who reportedly have business experience, that category shows a more evenly distributed result.

Survey Results Statistics

Analysis (Appendix G) of the survey’s first section’s statements provided the following: 74% of experts agreed or strongly agreed that al Qaeda’s management set the priorities. All or 100% either agreed or strongly agreed that the organization cultivates an atmosphere that infers members are building something great. There was also agreement (100%) that the members participated because they believe in the

organization. Fifty percent indicated family members highly respected members for participating in al Qaeda's activities. There was agreement (75%) that al Qaeda relies on multi-skilled employees to function in a project oriented structure. There was a 62% agreement that it could be said the organization functions as a hybrid franchise-profit center but that same number disagreed or strongly disagreed with the statement al Qaeda functions as a profit center business organization. Sixty percent of the respondents either agreed or strongly agreed that members viewed mission execution obstacles as opportunities,

There was a strong belief that members are not encouraged to learn about the entire organization, as 62% either disagreed or strongly disagreed with the statement that "Members are encouraged to learn about the entire organization". Seventy four percent of the experts felt the members did not expect to make these terrorist efforts a career.

From a return on investment perspective, 62% of the respondents either agreed or strongly agreed that al Qaeda "aligns its budget, planning and policies to its goals and vision"; but that same number disagreed with the statement that "al Qaeda is run as a profit center "business organization. Given that representation, it is easy to understand the result which indicates 60% of the respondents felt the business model was a secular and religious hybrid.

Analyzing the responses to the questions focused on al Qaeda's management of its weapons of mass destruction projects, the respondents indicate al Qaeda would prefer in house production (74%) of any research and development projects, and that it has access to the scientists who could and would engineer a biological weapon or a chemical,

radiological or nuclear agent. Sixty two percent also agree that al Qaeda is not hampered by financial concerns when trying to access biological agent development.

In the second section, the experts' ranking of the strength, weaknesses, opportunities and threats, indicated that some of al Qaeda's management strengths are its technical expertise, networking with its customers and suppliers, diversity of subsidiaries and use of technology in communicating with stakeholders. Other strengths included labor relations and recognition of the al Qaeda name. Organizational strengths included managers' experience and training opportunities along with working capital and sources of information. The policy most strongly agreed to as a strength was the "creation of fear in intended audiences". Also classified as a strength was al Qaeda's willingness to use biological weapons.

Al Qaeda weaknesses include its product delivery, mission cost, and personnel turnover. From a perspective of concern for biological weapons dissemination, our experts considered al Qaeda's access to biological weapons raw materials and expertise as a weakness.

Areas classified as opportunities included "access to incendiary device delivery", "use of technology in executing missions", "use of e-commerce to finance opportunities," "identification of demand for its goods and services", growth in the Asian and African markets, and the US public's perception of the Iraqi war.

The threats were few, but significant. Control over raw materials was classified a management threat. Use of violence against followers of Islam was deemed a policy threat, along with al Qaeda's relationship with current Middle East governments.

4.3 Social Network Analysis Results

Al Qaeda mission development process is studied through the relationships and ties exercised before and during mission execution. These relationship ties were modeled using the dynamic network analysis approach.

4.3.1 Social Organization: Social Network Analysis

When al Qaeda's business controls identified adherence to Islam as a requirement for membership they added an organizational unifying force that impacted both organizational and interpersonal trust. This same business control can also act as a parameter through which we can view all of the members, and the tasks they perform. Islam also acts as a prism through which the homogeneous social interaction functions as a gatekeeper, resulting in reduced opportunity for non-Jihadist forces.⁷⁶

Examining such an organization in order to derive an explanation for specific behaviors that are part of the decision making processes involved in problem identification and problem solving is more easily accomplished through the perspective of social interaction of these same individuals. Computational organizational analysis is one avenue available to explain these behaviors. Computational organization theory offers perspectives on the mechanisms used to communicate within the organization, the tools and vehicles used to transmit information or knowledge and the characteristics inherent in that information transmission. To do this the researcher views the organization as a network with actors or agents who act in concert with and/or adapt to the behavior of other network actors. As a result information is passed or received,

resources are exchanged and functions performed from a variety of motivations.⁷⁷ Some motivations involve actor self-interest, others promote the mutual interest of the agent and the organizations, while still others act from the collective perspective, with “self” not a part of the equation. Several theories are included in this computational organization theory.⁷⁸

Implementing Social Network Analysis

A social network analysis of the al Qaeda network was conducted to investigate the shape and overall nature of the business linkages among al Qaeda leadership and the implications that these linkages have for the potential development and deployment of weapons of mass destruction. Network measures of centrality eigenvector, betweenness, and closeness were used to assess network positions and the potential influence that certain network members may have on the formation and communication of mission plans and concepts that include biological or chemical weapons.

4.3.2 The Network

Al Qaeda has relied on network contacts and interactions to further the organization and its message in all of its business processes and functions. It is the interaction of these network actors that is the focus of this study. Specifically, the relationships between the mission planners and major ideology framers are explored in order to determine the influences that these groups may have on future missions, particularly chemical and biological weapons missions.

Connections between mission planners and ideologues have been discussed in the media.⁷⁹ Among those most often cited are Mustafa Setmariam Nasar and Abdullah

Azzam. Mustafa Setmariam Nasar is the author of several treatises on the functioning of the jihadi movement. One of the most widely known, “Lessons Learned from the Armed Jihad in Syria”, offered a detailed analysis of the difficulties faced by mujahidin under Syria’s government. Abdullah Azzam is the author of “Defense of Muslim Lands,” and “Martyrs: The Building Blocks of Nation”, two works that emphasized the personal responsibility of each Muslim in the declared jihad against purported infidel domination. Others of course include bin Laden’s deputy, Zawahiri and the blind sheikh, Omar Abdel Rahman.

These representative few are indicative of a class of network actors who may have an ability to directly influence mission execution decisions made by al Qaeda. Accordingly, the content of their writings or analytical products potentially offer indirect knowledge of future missions. The view al Qaeda takes on missions is increasingly defined by the collaborative efforts of the planners and/or the ideologues.⁸⁰ Some of the planner or ideologues may have the potential for more influence because the relationships they represent interactions based on their positions as both ideologue and mission planning.

4.3.3 The Network Relationships

Inherent in all of the al Qaeda relationships is the community association link that establishes a social tie or bond.⁸¹ Community association links can be organizational, biological, physical or geographical. Each basic link starts with the interaction of two individuals. This one-to-one tie called a dyad in social network analysis is the basis for

pair-wise analysis: is it between peers, is the relationship reciprocal, and if it is reciprocal evenly weighted on both sides?⁸²

After the dyad, the next important relationship level is the triad. Triads or triples offer an additional link that permits an opportunity to approach the dyad from a richer perspective.⁸³ We can look at the one-to-one from its pairwise position and then study it from the impact of a third actor on the original one-to-one relationship. Does the third actor bring balance? Does the third actor bring discord? Or does the introduction of the third actor provide an opportunity for the first two to set aside any previous disagreements in order to unite against this new dimension?⁸⁴ This same analysis is used on relationships between subgroups in the network and relationships between groups in different networks. It is also important to look at the network as a whole to determine if it has few centralized nodes or a more decentralized structure. A centralized network permits ease of connection but it is also vulnerable to failure if crucial nodes are removed. A less centralized network offers strength because failure points are limited.

All of these relationships impact the actor as an individual and the network as a whole.⁸⁵ The relationships engender trust, and trust offers an avenue for the relationship at the dyad level to discourage opportunistic behavior between network triads and subgroups.⁸⁶

This trust is also important to the economic exchange that occurs at the organizational level.⁸⁴ It is exhibited in the interfirm negotiations and the organization-to-organization connection of individuals termed boundary spanners. These spanners are actors from external organizations who interact with actors from the original network.

These spanners may belong to other organizations or networks closely aligned with the initial network. But the capability of the spanner to interact with the initial network is facilitated by either an initial dyad relationship with someone associated with the network or a triad relationship with someone inter-organizationally associated with the initial network. If it is the latter, then this inter-organizational relationship may rely on repeated positive ties that broadened and deepened the cooperation between the two groups. Informal processes signaling commitment between the two groups may even arise.⁸⁸

Trust can reduce the cost of negotiating significant issues since uncertainty and unequal information sharing diminish along with verification's procedures and costs.⁸⁹ Trust significantly reduces the need for safeguards to enforce agreements or rules of engagements.⁹⁰ The need for fewer safeguards saves time and effort between the negotiating entities. Trust also minimizes haggling, information hoarding, and asset specificity control. Trust ultimately affects overall performance and thus offers a means to influence the economic outcome of transactions in a negative or positive manner.⁹¹

Inter-organizational trust has the additional advantage of acting as the default trust when interpersonal trust between two actors from separate organizations is low. This is because the default trust will override any distrust between the two actors. Both parties in a low trusting dyad defer to the higher trusted interorganizational trust bond.⁹² Ultimately this type of trust is necessary for any successful business to flourish.⁹³

4.3.4 Relationships, Social Networks and Terrorism

In the last several years social network analysis has been applied to the study of terrorism and terrorists.^{94,95,96} Emphasis has been placed on network structure,

relationships, and direct knowledge exchange. Tsvetovat and Carley extended that field of study by weighting the edges between sets of nodes and assigning a definition to those weights as level of trust or communication density. Basu examined the emerging trend of several widely dispersed organizations, identifying the linkages between major groups of terrorist organizations operating in India. The roles and positions these groups take when interacting was also analyzed. Among the groups included in the Basu linkage map were Lashkar-e-Tayyiba and Jaish-e-Mohammed

Extending this trust-communication-role concept to the influence of the specific network actors on mission planning provides an opportunity to construct a virtual information exchange and estimate the weapons of mass destruction indicators and warnings that could result. The terror social network is constrained in approach and study.

Linking the agents' interaction to the virtual information exchange influence offers an additional dimension to the simulation of terrorists' structure. Basing the final product on the core entities of agent, resource and task, we form a framework for a mission influence analysis and a terror agent study.

4.3.5 Social Network Analysis: Organizational Communication Process

Social network analysis (SNA) also permits analysts to project an organization's communication and knowledge flows.⁹⁷ It provides a means to determine the focal points within a communication network, and then using a mechanism called a meta-matrix, SNA examines the impact of a task or a resource on the communication process within an organization. Its emphasis on relationships permits researchers to leverage social

structure knowledge in order to learn from any identified communication pattern. The meta-matrix also provides a means to identify important “holes” in necessary information transmission. Identifying these holes in the network allows the researcher to assess a specialty not immediately available within the organization and review the process used to procure the needed talent.⁹⁸ However, extending this means of study to covert networks does have its constraints. Chief among them is an inability to directly access the members of the network. Because of this, it becomes necessary to devise model criteria that simulate agent response. Through this simulation, we map and measure relationships between individuals, groups and organizations; then represent these relationships as nodes in a network and the links that connect those nodes. Using this framework, the researcher can perform a mathematical analysis and develop a visual representation of the nodes and their links.

Several social network analysis software packages facilitate identification of these important locators. Most also provide a means to visualize the network as well. The software package used for this study was ORA, Organizational Risk Analyzer. Deemed a dynamic network analysis tool, ORA combines features usually found in traditional social network analysis, link analysis and multi-agent analysis systems. It then simulates network evolvment as personnel, knowledge, resources and tasks are modified. . For example for al Qaeda, it would estimate network reaction to an agent’s death. Dynamic network analysis is an aid to identifying potential network change.

It was this ability to accommodate change that made ORA more viable than other packages for this endeavor. The individual meta-matrix analysis capabilities were

deemed appropriate to the needs of determining the communication influence potential of a network. Therefore while risk is the central concern of ORA, its evaluation capabilities and interpretation potential were considered appropriate for estimating influence.

ORA accepted the network information through an adjacency matrix generated by the researcher after reviewing material available through open source documents. A total of 22 events were identified for inclusion in the study. These events ranged from the Australian Embassy bombing to the 2002 Bali Nightclub attack. (Figure 8).

Events Identified for Study Inclusion	
1993 New York City Twin Tower	Lashkar-e-Toiba in the US
Bojinka Plot	Heathrow Airport Attempt
1998 Coordinated Embassy/Consulate Bombing	Dirty Bomb/ Limosine Gas Bomb
USS Cole	Bali Nightclub Attack in 2002
NYC Twin Towers/Pentagon/Pennsylvania	Moscow Theater
Assassination of David Foy	London Transit
Madrid Train Bombings	Bali Attack in 2005
United Kingdom Ricin	Marriott Jakarta Bombing
Italian Ricin	Australian Embassy Jakarta
French Ricin	
Spanish Ricin	
Chechnya Ricin	

Figure 8. Events Identified for Study Inclusion

Each event provided either a deviation from the previous missions or a venturing into a new area of activity. The 22 events were then reviewed to identify participants. Participants were classified by role (Figure 9).

<u>Event Participant Roles</u>	
Associate	Leader
Bomber	Operative
Chemist	Participant
Chemical Distributor	Planner
Driver	Support
Finance	Trained
Guidance	Trained
Lead Planner	Unknown

Figure 9 Role Identification

Among those participants, 16 roles were defined. Included were participant, operative, driver, associate, support, planner, guidance or chemist. A total of 283 agents were identified or deemed “significant participants” and/or “influencers” in the initial identification.

Al Qaeda was considered the core organization, but an additional 20 other identified organizations contributed personnel to the execution of these 22 events (Figure 10).

<u>Organizations to Which Agents Had Known Association</u>	
Al -Gama al Islamiya	Komire_Persianpan_Syariat_Islam
Al Qaeda	Lashikar_e-Taiba
Al_Tawid	Moro_Islamic_Liberation_Front
Chechnya	Moroccan_Islamist
Chechn_Republic_of_Ickheria	Muslim_Brotherhood
Egyptian_Islamic_Jihad	Muslim_Youth_Movement
Islamic_International_Peacekeeping_Brigade	Pakistan_People's_Party
Italian_Islamic_Culture_Center	Salfist_Group
Jaish_e_Mohammed	Special_Purpose_Islamic_Regiment
Emaah_Islamiya	Takir
Jordan_Millennium_Bomb_Cell	Unknown

Figure 10. Organizations of Event Associated Actors

A second data review was conducted to eliminate individuals for whom sufficient data was not available or individuals who were presented more than once because of aliases the initial 283 was reduced to 232. A final set of matrices were developed that identified each of the 232 actors by organization, event and relationship to other agents. For the event matrix, there were several events for which the al Qaeda personnel were supportive rather than the lead.

The determination of a relationship between agents was developed based on the criteria in Figure 11.

<u>Associates' Relationship</u>	
Indirect	.2
Dialogue	.25
Subordinate	.5
Peer	.6
Supervisor	.75
Family Member	.9
Religious Mentor	.9

Figure 11. Associates' Relationship

These relationships were reviewed for centrality degree, eigenvector, betweenness and closeness. The field of 232 was again reduced to focus on planners and ideologues. These numbered 81. Again, measures were taken for centrality degree, eigenvector, betweenness and closeness. In addition, the geodesic distance was measured for this planner-ideologue group as a means to determine the shortest distance between two actors.⁹⁹ This provides the optimal route between two actors who may not, as yet, have an established relationship. Given the desire to identify future activity it is important to see who could quickly develop a new relationship. This geodesic distance matrix was then added to the weighted agent matrix to determine a “communication index”. The result was a list of agent to agent interactions that benefit from short distance and personal relationship. Next a list of influencers was identified. These individuals were classified as individuals who were identified as those who had influenced participants either through their writings or their teachings. Several of the influencers were active in

one or more events. These influencers' work was examined to determine any position on use of weapons of mass destruction. Any mention or focus was deemed a position and urging was considered guidance to include WMD. The influencers work or any secondary analysis of that work was used to determine a list of potential WMD agents and the agents' viability or previous use. This potential would include availability from previous attempts to develop, written substantiation on online capability to develop and secondary expert identification of al Qaeda's capability to produce the agent.

Results

The ability to interact was indicated by a scaled 0 and 1 relationship, where 0 meant there was no known significant relationship between the two agents and 1 indicated there was one. The group of 232 was assessed for centrality eigenvector, degree, betweenness and closeness.

Visualization of the centrality, betweenness, agent by agent, were arranged in descending rank order and examined to determine if a power law distribution existed. As shown in Figure 12, there was a descending rate of change but it did not reflect the power law clustering. The significant rate of descending change reflected in the first 15 agents and these were depicted in the visualization. For consistency, the top 15 agents were analyzed for closeness as well.

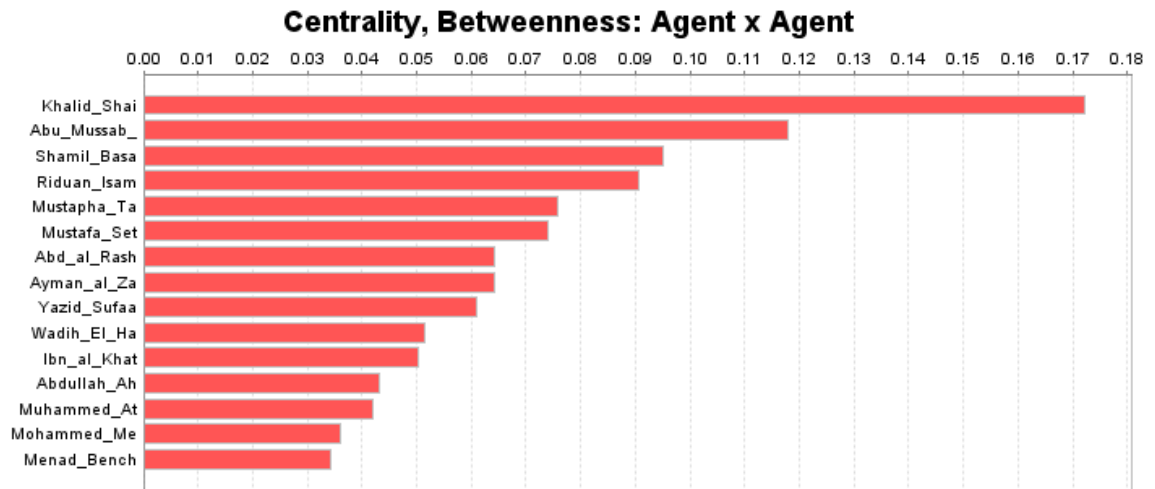


Figure 12. Betweenness for Top 15 of 232 Al Qaeda Network Actors

The top 15 for closeness are provided at Figure 13.



Figure 13. Closeness for Top 15 of 232 Al Qaeda Network Actors

In reviewing these relationship analyses, the duplication/cross-over between the two measures is represented in the presence of the same individuals on both with the two highest closeness and betweenness. Four individuals are in that category: Khalid Shaikh Mohammed, Mustafa Setmariam Nasar, Shamil Basayev, and Riduan Isamuddin. This dual representation may be an indication of the interaction (direct and indirect) these four have had with operatives during mission planning and execution. These same individuals are also included in the Top 15 of 81 planners and influencers as well.

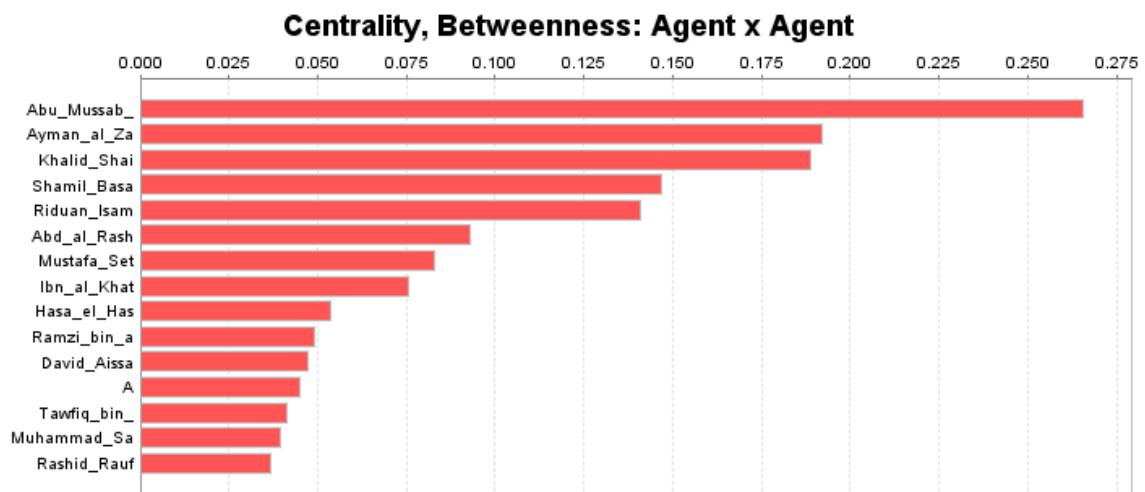


Figure 14. Betweenness of Top 15 out of 81 Al Qaeda Network Actors



Figure 15. Closeness of Top 15 out of 81 Al Qaeda Network Actors

Also repeated in these two measures are Abu Mussab al-Zarqawi and Ayman al Zawahiri. This is understandable given the significant impact al Zarqawi had on the areas of recruitment, mission planning and organization policy¹⁰⁰ and the continued al Qaeda leadership provided by Dr. Zawahiri. It is interesting to note Zarqawi's location on the closeness chart. This lower closeness position provides further data for the discussion that infers Zarqawi's relationship with the al Qaeda hierarchy may not have been very strong.¹⁰¹ However, the observed betweenness and closeness measures indicate that these two agents are extremely well positioned to send and receive network communication.

In addition, their "network neighborhoods" have many of the same agents. This is very good for the network because having a strong redundancy factor for such important network actors benefits the network. This benefit was demonstrated when Zarqawi's removal from the network caused no fatal network repercussions. Others

having a high degree of betweenness and/or closeness index include Mustafa Setmariam Nasar, Khalid Shaikh Mohammed, Abd al Rashim al Nashir, and Riduan Isamuddin.

This field of 81 agents was further reduced to identify the small world core group that influences the network. To do this the researcher established a communication influence index and assessed the group of 81 to determine each one's probable significant virtual information exchange contribution. The communication influence index is a relationship-information dissemination that works on the inverse, the smaller the number the greater the potential to disseminate information and the greater the potential to influence network neighbors. This index applies the geodesic between actors and the weighted relationship factor to frame the influence guide. Once the index was created, the researcher calculated several descriptive statistics operations, including mean, median, standard deviation and tendency to normal distribution. This was an iterative process to accommodate removal of outliers.

At 73 agents, the data indicated normal distribution. The researcher identified the data points with intermediate communication index above the median and conducted another iterative process of standard statistics analysis. These 73 agents were reduced to 36 agents and a further review of the 36 reduced the number to the 16 above the medium.

A new meta-matrix was generated for this final group of 16. Meta-matrix measures for the agent by agent relationships were generated. The values for closeness and betweenness were not distinctive in that 13 of the 16 received an index of 1 for closeness and 11 of the 16 received a .000845 betweenness.

However, from a personnel interaction perspective, the agents with unique indices for closeness were David Aisaa Khalef and Mustafa Setmariam Nasar. Ayman al-Zawahiri had high cognitive demand and centrality out. This centrality out degree index indicates that Zawahiri is important in the dissemination of information.

The eigenvector centrality measure (Figure 16. Centrality, Eigenvector) was also analyzed to review each node's importance and provide an indicator of communication within the small world network of planners and influencers. This measure of high score connections identified Ayman Zawahiri as the agent with the highest index.

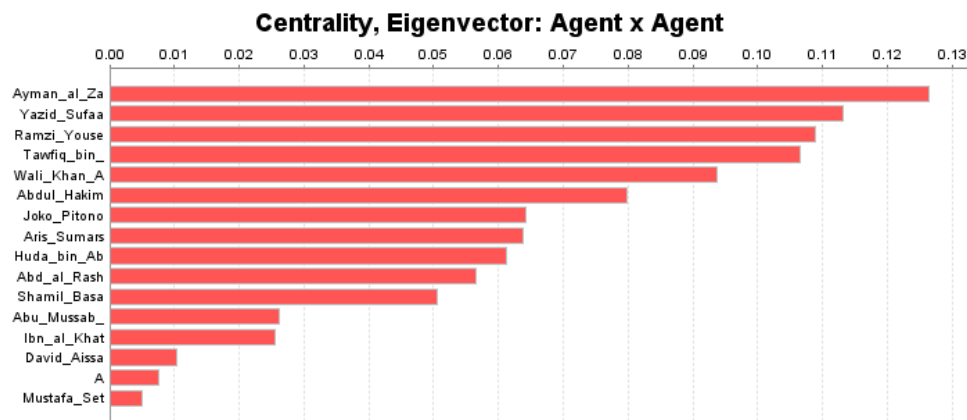


Figure 16. Centrality, Eigenvector for 16 Al Qaeda Network Core

The geodesic was calculated and reviewed. This provided results that were almost the inverse of the agent by agent. For instance, Ayman al Zawahiri had the highest agent by agent but the smallest geodesic. Mustafa Setmariam Nasar was the

lowest in agent by agent but was the highest in geodesic. This could mean to disseminate information via Nasar could take the longest and his relationship with the other agents may have not provide the best exchange route.

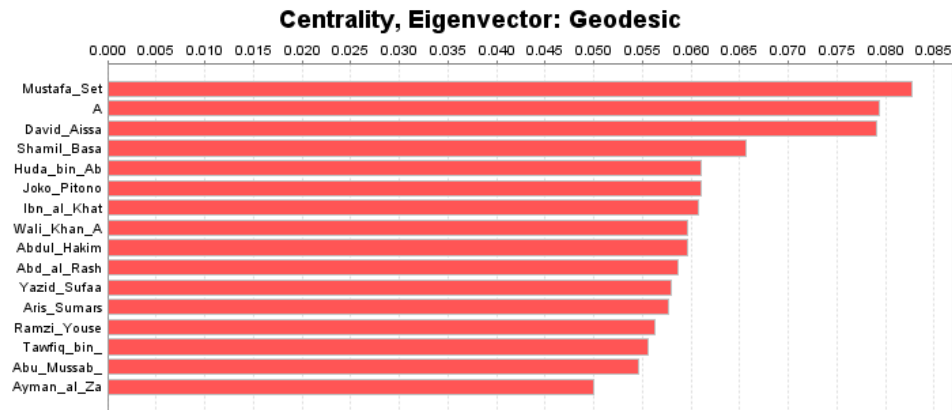


Figure 17. Centrality, Eigenvector, Geodesic for Al Qaeda Network Core

The geodesic distance between agents was determined; that agent by agent matrix was multiplied by the relationship estimate or agent-agent weighted matrix. The result is an index of communication influence (CI_Index) that each agent could exert on the small world of planners and ideologues. This index (Appendix H) is an author generated calculation estimating the range of communication capability or influence an agent can exert a network. This number offers a glimpse at the potential hierarchy of idea communication or transferal and mission focus.

Table 3. Agent_CI_Index_WMD Position

Agent	CI_Index	Teach/Implem/Influ	WMD Position	Organizations
Ibn_Khattab	5	Implementer	Unknown	Chech, AQ
Yazid Sufaat	16.8	Implementer	WMD Research	JI, AQ
S. Basayev	19.4	TeachImplem/Influ	Acquire	Chech, AQ
Abu Zarqawi	22.6	Implem/Influencer	Acquire	T&J; AQ
A. Sumarsono	30	Implementer	Unknown	JI
A. Zawahiri	51.1	Teach/Implemen/Influ	Acquire	EMB, AQ
A	53.9	Unknown	Acquire	Unknown
Wali A Shah	57.8	Unknown	Unknown	AQ
A Nashiri	59.3	Implementer	Uncertain	AQ
Joko Pitono	69	Implementer	Uncertain	JI, Abu Sayyaf
Ramzi Yousef	71.6	Implementer	Acquire	AQ
Huda Haq	72	Implementer	Uncertain	Mantiqui, JI, AQ
David Khalef	73	Implementer	Acquire	Uncertain
T. bin Attash	76.5	Implementer	Uncertain	AQ
A. Hakim Murad	92.6	Implementer	Uncertain	AQ
M. S. Nasar	99.55	Teach/Implem/Influ	Acquire	SMB, AQ

An initial CI_Index assessment was calculated for each of the corresponding 16 planner agents'. This information was combined with available data on the network actors known attitude (position) on using weapons of mass destruction. This combined information was then displayed (Table 3.) in ascending order - in deference to the shortest distance concept of geodesic distance.

4.3.6 CI_Index Results for Weapon of Mass Destruction Mission

Assessment

Reviewing the list of indicators, from lowest to highest, the position of Ibn Khattab is first. However, no open source data accessed provided his position on or gave an indication of an attempt by Khattab to acquire, use or initiate research on WMD. He

was, however, second in command to Shamil Basayev, an advocate of nuclear use and severe tactics.¹⁰²

Next is Yazid Sufaat. His CI_Index is representative of both the position he held and the influence he exerted while still a part of the al Qaeda and Jemaaah Islamiya networks.¹⁰³ It is interesting to note that in hiring Sufaat to fill a weapon of mass destruction researcher position Ayman Zawahiri filled a structural hole with a boundary spanner, an individual outside the al Qaeda network.¹⁰⁴ No definite name is identified to currently occupy the position Sufaat held prior to incarceration, however, Zawahiri is still dedicated to identifying a weapons of mass destruction capability.¹⁰⁵

Shamil Basayev was the leader of the Chechen forces when they, reportedly, possessed nuclear materials (1996).¹⁰⁶ Shamil Basayev was also highly regarded by his followers and had developed a manuscript for a book on mujihadeen before his death..¹⁰⁷ This high regard persists despite allegations of links to prostitution, illegal drugs and counterfeit currency trade.¹⁰⁸

Abu Mussab al Zarqawi had reportedly initiated a weapons of mass destruction plot. Before his death, allegations about his relationship with Saddam and his group's efforts to establish mass destruction weapons were frequent.¹⁰⁹

Next is Aris Sumarsono. Sumarsono, alias Daud, is a former biology student who replaced Hambali after his arrest. Sumarsono also has long interpersonal and interorganizational trust because he is a known entity from the time he trained in Afghanistan.¹¹⁰

Ayman Zawahiri followed Suarsono on the index. Zawahiri is committed to spearheading an event that will reverberate throughout the Western world. So much so that he cancelled an event set for New York City because it lacked sufficient shock impact. He has pursued specialists in weapons of mass destruction for years.¹¹¹

A is an unknown agent who participated in the United Kingdom ricin event.¹¹² This event, like the one in France, has produced controversy. But the ricin beans found in the UK, and the admission of the family of the French ricin participants that they knew about the young chemist's attempts to produce ricin and botulinum are sufficient justification to take the attempts seriously and incorporate the use of such agents into the calculation of known threats.¹¹³

Wali Khan Amin Shah has no specific incident associated with weapons of mass destruction. He was, however, assigned to assist the Tajik Islamist Forces sometime between 1988 and 1995 by Osama bin Laden. He was there with Ibn al Khattab providing training and support. Bin Laden considered the Central Asia region an excellent resource for off the shelf weapons of mass destruction components.¹¹⁴

Abd al Rashim al Nashiri is not directly associated with weapons of mass destruction. However, he traveled to Russia to acquire four anti-tank missiles for Yemen prior to planning the USS Cole attack.¹¹⁵ And he is known to have developed a four point plan that permitted attacks from vessels that involved explosive devices. The only question is: would he incorporate a biological or chemical device into an attack? Given the devastation of the USS Cole we must err on the side of caution and assume yes.

Joko Pitono, otherwise known as Dulmartin, is the creative mind behind the Bali 2002 bombing. Pitono is associated with Hambali and Yazid Sufaat, both of whom have supported the al Qaeda effort to acquire and disseminate weapons of mass destruction.

Ramzi Yousef was a significant active threat until his incarceration, however because of his circumstances it is difficult to monitor and accurately assess his active impact on current mission planning. But his direct or indirect influence may or may not still carry significance.

Huda Abdul Haq is incarcerated on death row. However, as recently as February 2007 he has communicated with supporters by means of mobile telephone. Held in a high security facility off the coast of Java, Haq has preached several times to supporters in the small town of Poso. There is no record of the message contained in those sermons.¹¹⁶

David Khalef was a suspect charged in the United Kingdom ricin case.¹¹⁷ Tawfig bin Attash has no direct information available that identifies a weapons of mass destruction focus. He was, however, a participant at the 2000 Kuala Lumpur meeting attended by Ridduan Isamuddin and Yazid Sufaat.¹¹⁸ Abdul Hakim Murad participated in the Operation Bojinka plot along with Ramzi Yousef and Khalid Shaikh Mohammed.¹¹⁹

Mustafa Setmariam Nasar is known for his 1600 page “The Call for Global Islamic Resistance”, and his significant influence over Zarqawi.¹²⁰ He is also known to have exerted some influence over Osama bin Laden as well.¹²¹ Nasar developed a focused review of the jihad movement and developed theories on the movement.¹²² Most recently, an al Qaeda supporter published an analysis of the Egyptian Jihadi current

situation. The supporter, identified as Abu Muhammad al Hilali, offered insight into the means available to achieve the global objective and prepare for a larger activity in the future.¹²³

The analysis conducted by al Hilali is a strong imitation of the method used by Nasar in his 1600 page treatise.¹²⁴ It could be an indication of the influence of Abdullah Azzam and the jihad described in his “Defense of Muslim Lands, the First Obligation after Imam” fatwa.¹²⁵ This edict was issued when the Soviets invaded Afghanistan and was supported by the Grand Mufti of Saudi Arabia Abd al-Aziz bin Bazz..¹²⁶ Azzam significantly influenced bin Laden, Zawahiri, and reportedly Nasar as well. Nasar has repeatedly demonstrated a preference for weapons of mass destruction against the West.

Articulating this preference in several forums, Nasar has strongly urged the use of “decisive strategic operations with weapons of mass destruction including nuclear, chemical or biological weapons”. It is said Nasar focused more on the planning and strategy needed to destroy the United States than any other Jihadist.¹²⁷ If he is the leader of the next generation of thinkers in the movement, then the United States must prepare for the most damaging of events, particularly in the area of weapons of mass destruction.

Reviewing the CI_Index we see that the agents with the lowest reference number are those classified as implementers. That is, those who will take the ideology and ensure it is executed correctly. Bin Laden could actually fall into that category. He was significantly influenced by Abdullah Azzam, the ideologue for al Qaeda’s beginning.¹²⁸ The index does not seek to identify who to eliminate or who is more key than another, rather it seeks to determine those individuals who, with any resources available, could

and would institute the use of weapons of mass destruction. Referencing open source data we then incorporate any known agents (Table 4) with which these individuals have worked.

Table 4. Agent_CI_Index_WMD_Organizations^{129, 130}

Agent	CI_Index	WMD	Organizations
Ibn_Khattab	5	Uncertain	Chech, AQ
Yazid Sufaat	16.8	Ricin, Botox, Unk chem	JI, AQ
S. Basayev	19.4	Nuclear , Ricin	Chech, AQ
Abu Zargawi	22.6	Chem, WMD general	T&J; AQ
A. Sumarsono	30	WMD general	JI
A. Zawahiri	51.1	WMD general	EMB, AQ
A	53.9	Ricin suspected	Unknown
Wali A Shah	57.8	Unknown	AQ
A Nashiri	59.3	Uncertain	AQ
Joko Pitono	69	Uncertain	JI, Abu Sayyaf
Ramzi Yousef	71.6	Uncertain	AQ
Huda Haq	72	Uncertain	Mantiqi, JI, AQ
David Khalef	73	Ricin	Uncertain
T. bin Attash	76.5	Uncertain	AQ
A. Hakim Murad	92.6	Uncertain	AQ
M. S. Nasar	99.55	WMD, Dirty Bombs	SMB, AQ

We cannot assume that incarceration removes an individual from the assessment. Huda Abdul Haq's continued preaching while remanded to a facility in Java is an example of this. Nor is death the end of an ability to influence. The French ricin defendants indicated they wanted to avenge Ibn al Khattab's death through the use of toxins.¹³¹

We can look at the individuals and their CI_Index from an ascending order perspective and identify potential candidates for biological weapon use. We can also look at the organizations to which these individuals belong to determine the resources available to execute a WMD strategy.

Analysis of the agent-by-organization and agent by task matrices indicate a centrality for al Qaeda. But the centrality indicators for Jemaah Islamiah and the Chechen Republic of Ickheria supporters are of note as well. Though these centrality indicators are significantly less than the centrality index for al Qaeda, they do support the premise that the movement is widening beyond the Arab peninsula. Al Qaeda has developed a close relationship with Lashkar-e-Toiba (LeT) and LeT has, as one of its members, Dr. Abdul Qadeer Khan, developer of Pakistan's nuclear bomb.¹³² In addition, bin Laden has met with two other Pakistani nuclear scientists, Sultan Bashiruddin Mahmood and Abdul Majid. LeT was organized by Abdullah Azzam like al Qaeda and LeT provides training to mujihadeen in Southeast Asia and Chechnya.¹³³ This significantly increases the possibility of a strategic plan that would include nuclear capability, a capability sought by at least three of the top six on the CI_Index.

There are also unidentified individuals who have had an impact on the results achieved by previous missions and may still impact future missions. For instance there are at least three agents who have not been positively identified but who have participated in at least one event.

What is the potential of use of biological agents based on these results? It is very strong, particularly given the emphasis placed on those agents which have a documented

WMD focus. Zarqawi's interest in weapons of mass destruction was questioned,¹³⁴ but Zawahiri's interest in this mode of weaponry is well documented.¹³⁵ He interviewed candidates for al Qaeda's Weapons of Mass Destruction Committee and ensured that resources were available for continued pursuit of the area.

Other individuals with significant communication capability and influence are also the supporters of this category of weapon classified as weapons of mass destruction--chemical, radiological and biological. Given the results of the CI_Index, implementation of a developed plan may have already begun.

4.3.7 CI_Index Visualization

Using the index, interaction visualization can focus first on direct agent to agent interaction depiction (Figure 18) and compare that to a visualization with the CI_Index (Figure 19)

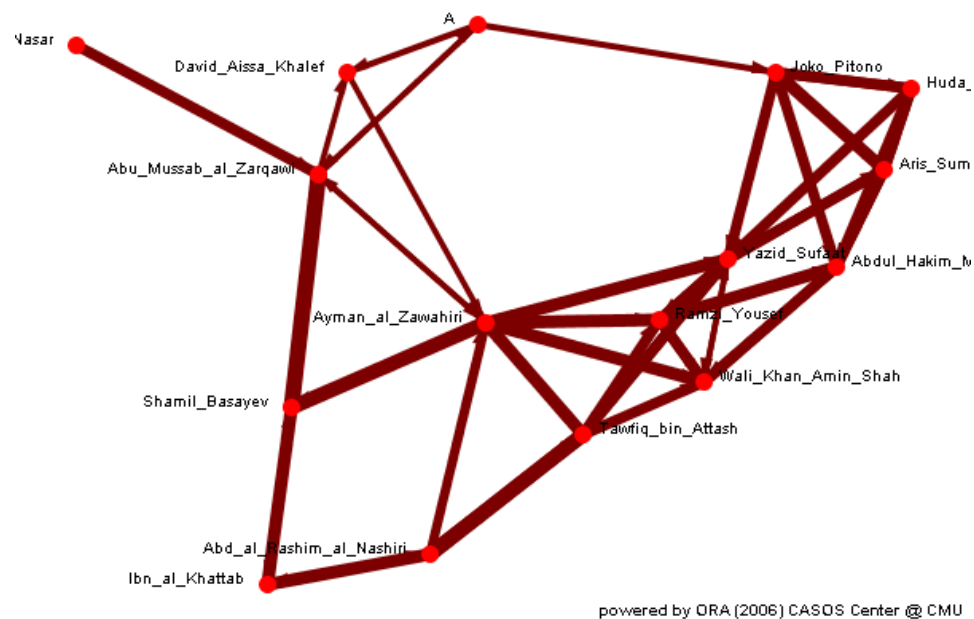


Figure 18. Al Qaeda 16 Node Planners Network

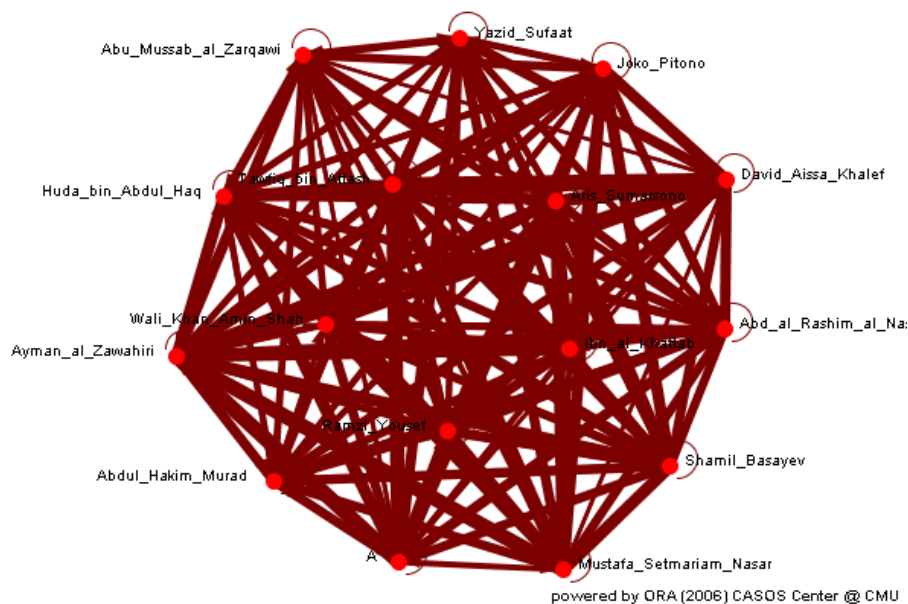


Figure 19. Al Qaeda 16 Node Planners' CI_Index Model

The thick connections demonstrate the networks migration toward a closed system when events such as significant mission planning must occur. This CI_Agent model permits estimation of the planners and ideologues' adaptive relationships with personal interactions and trust incorporated. Note the movement of periphery agents when the relationships have the added dimensions of the triads (Figure 20).

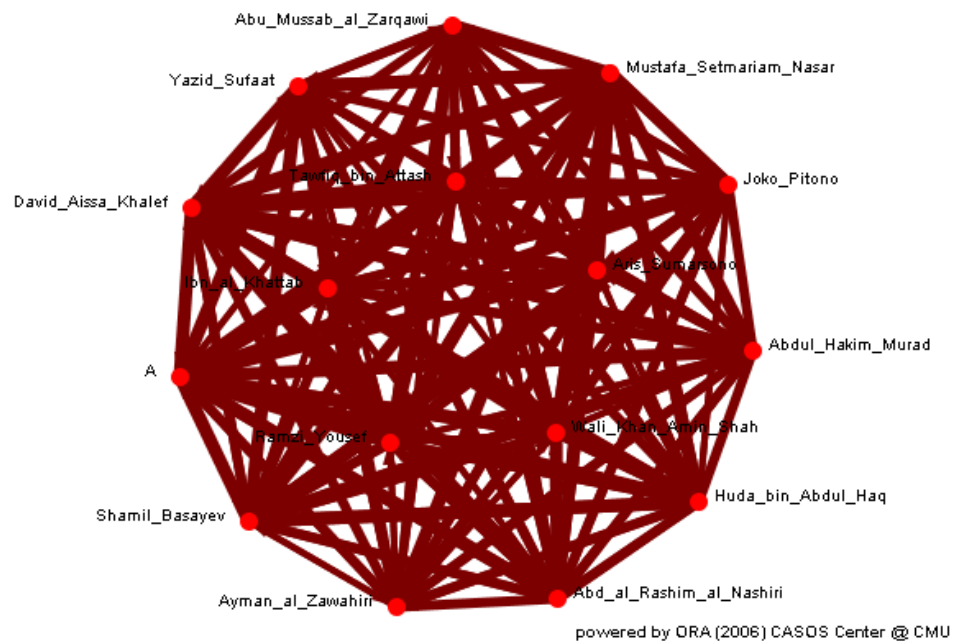


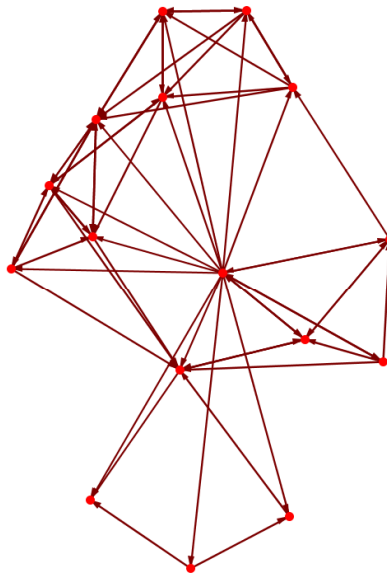
Figure 20. Al Qaeda 16 Node Planner Network CI_Index with Triads

I then sought to identify the minimum point at which all planners could network. This was done to represent the point at which interorganizational trust would reflect.

Interorganizational trust denotes the point all will work toward planning or executing a mission whether personal trust between participants is strong or not.

All ties were removed from the CI_Index visualization. The edge identifiers were increased by increments of .1 until all 16 nodes reconnected. This reconnection occurred at .7 (Figure 21). The same was done for the Al Qaeda 16 node planner network without CI_Index. All 16 nodes reconnected at 1.0.

New_Agent_Geodesic

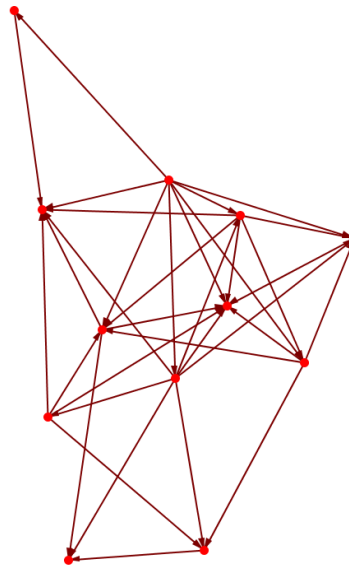


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Figure 21. Al Qaeda 16 Node Network CI_Index Minimum Reconnection

For sensitivity analysis, an ORA stylized scale free for the Al Qaeda 16 Agent Planner network (Figure 22) was generated to determine if power law was reflected. However, there was no indication that this network is scale free since there are no large hubs or significant hubs with smaller clusters.

Scale_Free_Graph



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Figure 22. ORA Generated Stylized Scale Free for Al Qaeda 16 Node Planner Network

4.3.8 Larger Network Result Comparison

For sensitivity analysis the geodesic and CI_Index were applied to the 232 and 81 node networks.

232 Node Al Qaeda Network

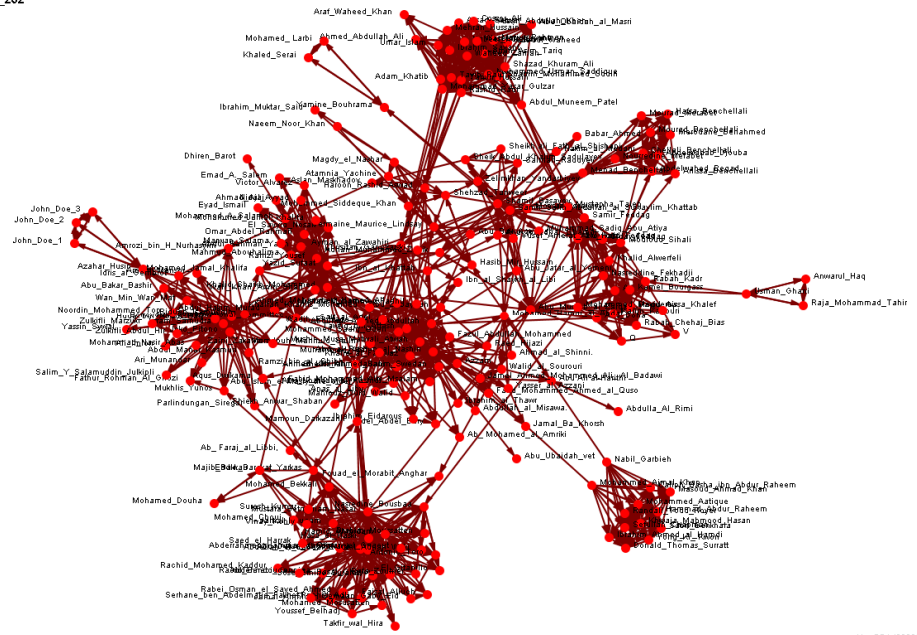
The 232 network with no geodesic or CI_Index is provided at Figure 23.

[illegible]

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95

Agent_Agent_CI_Test_232



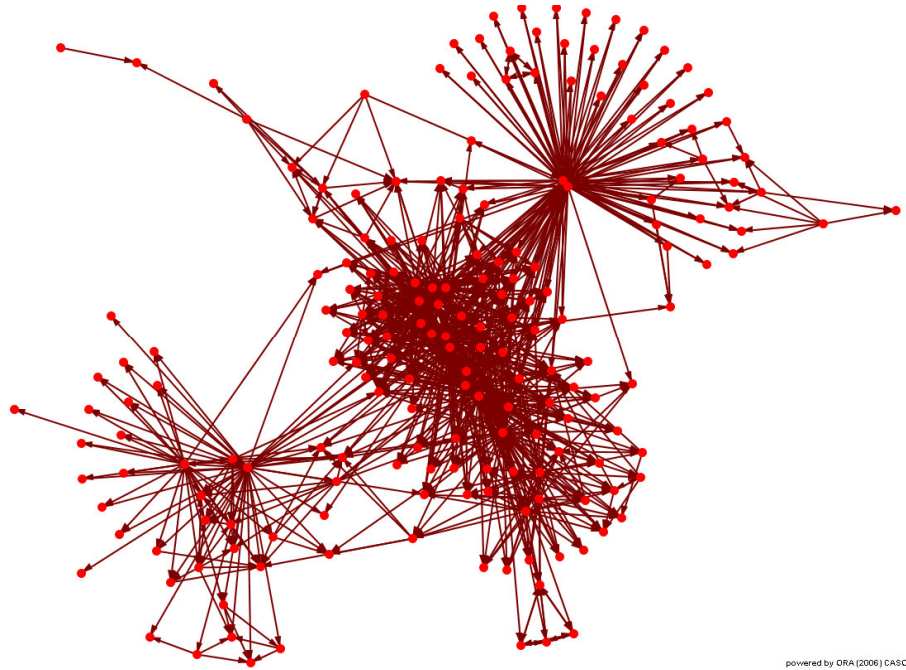
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Figure 24 232 Node Al Qaeda Network with Geodesic

Edge weights were removed entirely and then increased by increments of .1 to identify reconnection. This reconnection occurred at 1.0. It is interesting to note the similarity between the 232 geodesic and the 232 weighted only. This may occur because the distances are not that far apart under normal conditions.

A CI_Index calculation was applied (Figure 25).

Agent_Agent_CI_Test_232



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Figure 25. 232 Node Al Qaeda Network with Agent-Geodesic Relationship and CI_Index

Again, the edge weights were removed entirely and then increased by increments of .1 until reconnection occurred. This reconnection point was 2.0. This may indicate an upper boundary of effectiveness for the CI_Index.

81 Node Al Qaeda Network

The 81 node network representations were developed following the same procedures applied to the 232 node network. An 81 node network without geodesic or CI_Index was generated to visualize the network's ties.

Dissertation Matrices

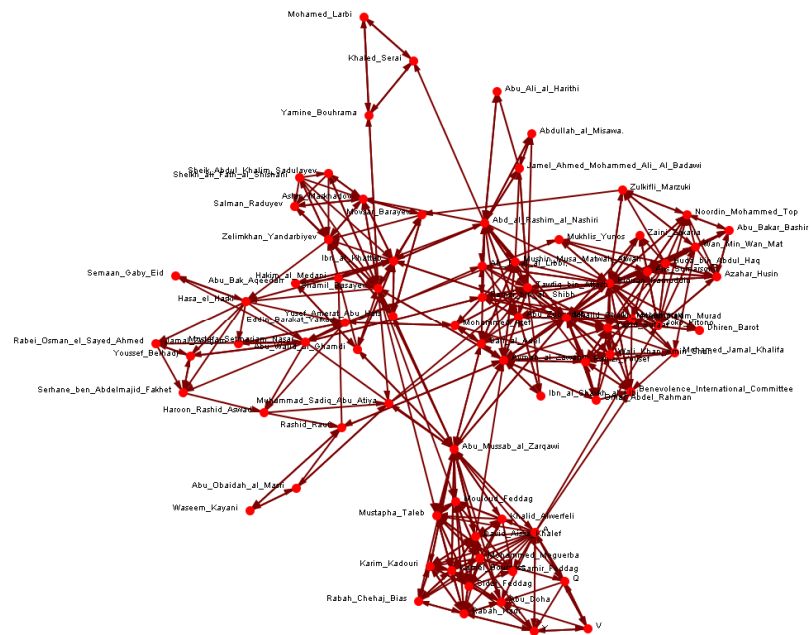
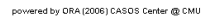


Figure 26. 81 Node Al Qaeda Network

The 81 node network's geodesic was then applied.

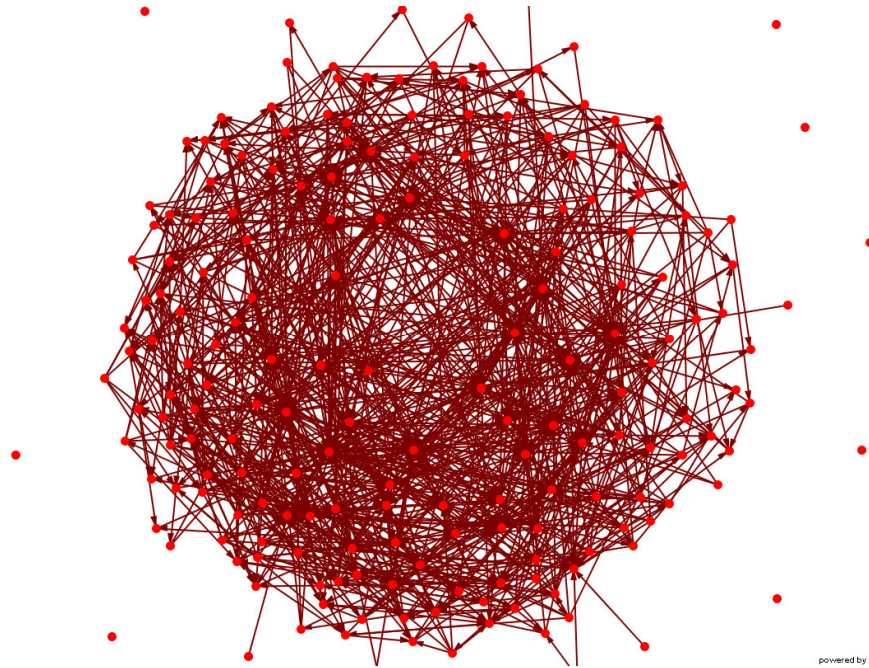


Again, the weights were removed and reapplied in .1 increments. The CI_Index representation rejoined at .9. The results support the indication observed in the 232 network that the CI_Index may have an upper boundary for applicability.

Scale Free Sensitivity Models

The same two levels of nodes, 232 and 81, were then visualized in stylized ORA generated scale free models. (Figures 29-31):

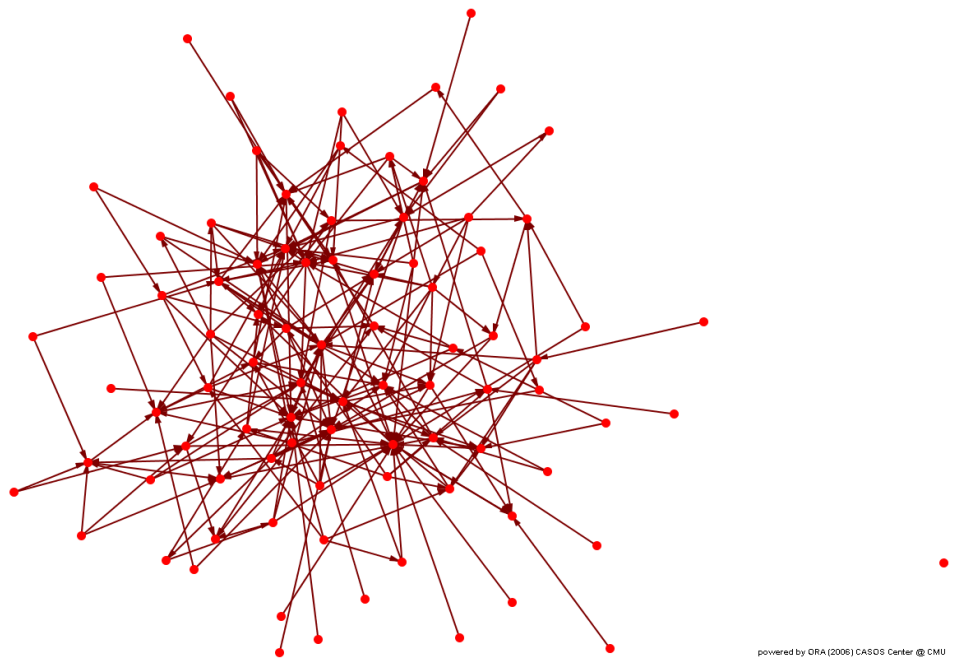
Scale-Free Graph



powered by ORA (2006) CASOS Center @ CMU

Figure 29. Scale Free Agent to Agent Relationships (200)

Scale-Free Graph

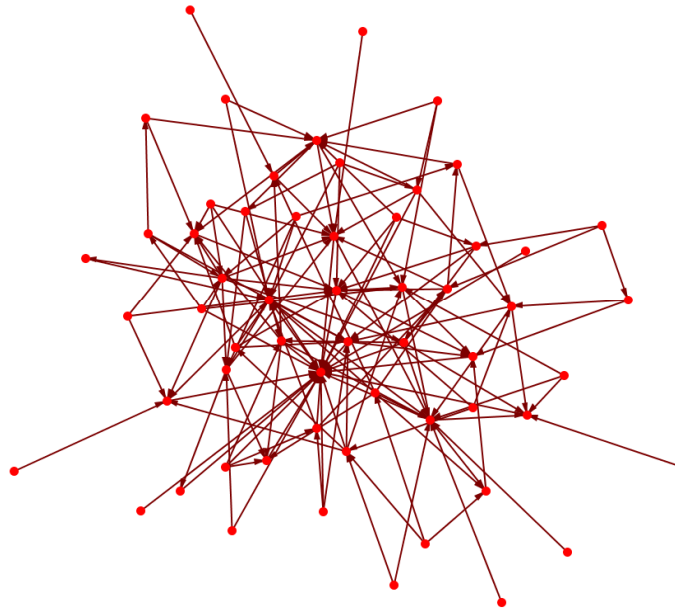


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Figure 30. Scale Free Agent to Agent Relationships (100)

Both 100 and 80 node level are provided in lieu of the 81.

Scale-Free Graph



powered by ORA (2006) CASOS Center @ CMU

Figure 31. Scale Free Agent to Agent Relationships (80)

4.3.9 Small World Analysis

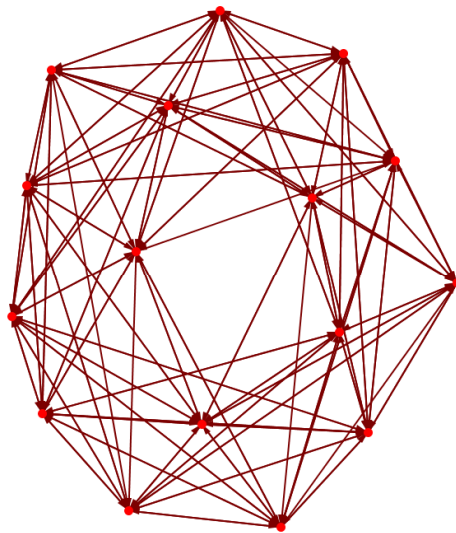
As the ORA generated stylized scale free models demonstrate, the models of this study do not display power law tendencies. There is no clustering with high hub-connections with significant number of smaller hubs attached. Because of this we cannot determine if the high degree nodes are connected to other high degree nodes.

Interestingly, the scale free stylized networks did not incorporate all agents into the

model. A well connected hub is produced but four outliers remain unconnected to the information and influence.

However, as demonstrated in the stylized small world network (Figure 32) created by ORA, the 16 Agent Geodesic relationship network (Figure 33) definitely reflects the small world tendency. In an effort to determine the sensitivity of this world and assess the minimum point at which the network aggregates and displays this small world phenomenon, I removed all edge weights so that there were 16 free floating agents. I gradually increased that weight such that the model would hide weights GREATER THAN the candidate weights. Starting with 0 and slowly moving up, the model demonstrated a small world reflection at 2.9 (Figure 34).

ORA_Stylized_Small_World_16_Agents_May_11



powered by ORA (2006) CASOS Center @ CMU

Figure 32. ORA Stylized Small World for the 16 Node Al Qaeda Network

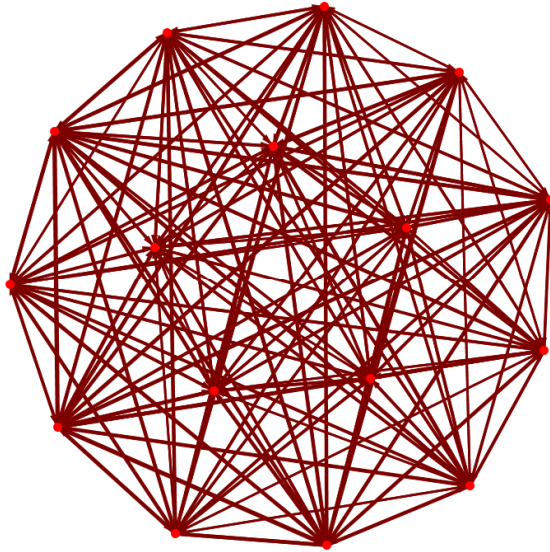


Figure 33. 16 Node Al Qaeda Network with Geodesic

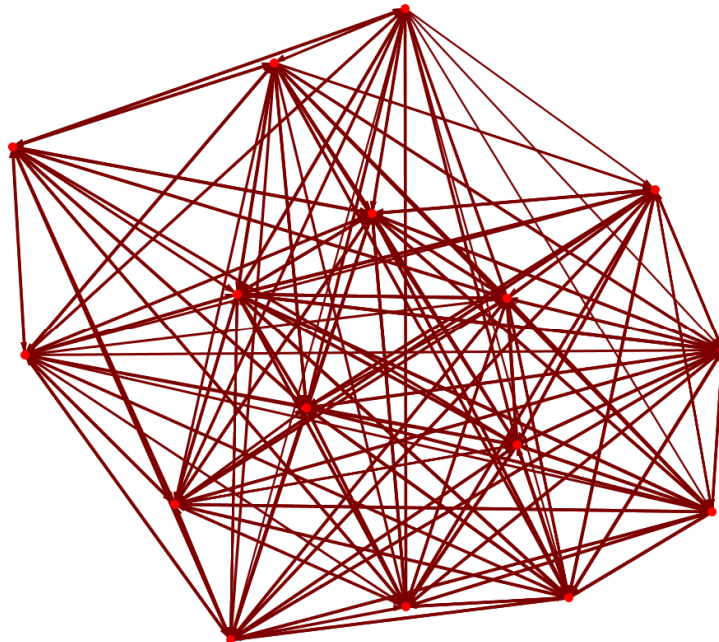
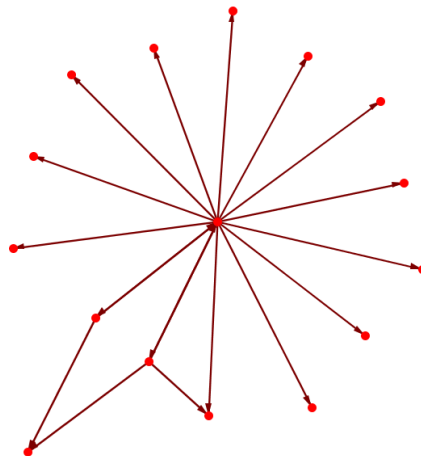


Figure 34. 16 Node Sensitivity Analysis for Small World Reflection (2.9)

The 16 Agent Geodesic for small world tendencies (Figure 33) also highlighted the agents less tied: our unknown “A”, David Khalef, Shamil Basayev and Mustafa Setmariam Nasar. A second sensitivity was conducted after the CI_Index was applied to again determine that least signal processing point when a viable network exists and can communicate and influence. From the hypothesis, the CI_Index should reduce the point and exhibit at a lower flash point. For the CI_Indexed network, the point at which everyone could reach everyone else was 0.7 (Figure 35) and the point at which the model achieved a near-closed ranks position was 1.8 (Figure 36).

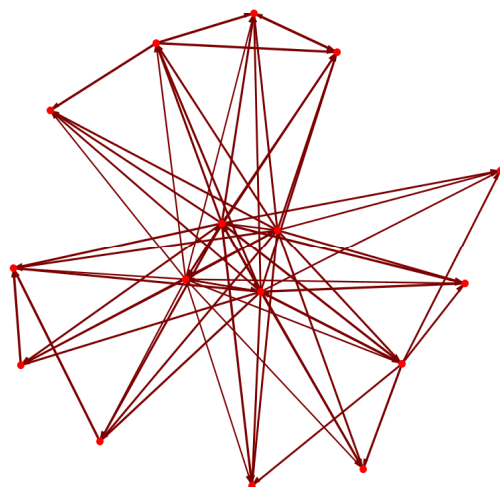
New_Agent_Geodesic



powered by ORA (2006) CASOS Center @ CMU

Figure 35. Lowest Flash Point -16 Agent CI_Indexed Network Small World

New_Agent_Geodesic



powered by DRA (2006) CASOS Center @ CMU

Figure 36. Lowest Flash Point for CI_Index Network Small World Near-Closed Rank Position

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5. DISCUSSION

Analysis of the results centered on determining if answers to the hypothesis questions were obtained.

5.1 Hypothesis: Questions and Answers

Hypothesis: Al Qaeda does incorporate a business approach to selecting, planning and executing mission activities.

Question 1: Does al Qaeda execute organizational functions using a business management approach to mission planning and execution activities?

Answer: Yes, al Qaeda executes its mission planning and execution using the business management practices of Islamic economics. As identified in the business management analysis and the terror expert survey, religion is significant to the decision making process within al Qaeda. The tenets of Islamic economics accommodate this envelopment of Islam into al Qaeda's business execution mechanisms and provide a bridge to all audiences to whom bin Laden must market.

Question 2: Is business management the deciding factor that afforded al Qaeda the additional impetus needed to frame an organization capable of evolving from a minor player into an international leader of terrorism?

Answer: No, business management, in and of itself, is not the deciding factor in al Qaeda's rise to international leader of terrorism. It is important, but the guidance of

Islamic economics and the al Qaeda by-laws require bin Laden, and any subsequent Emir, to adhere to the tenets of Islam while administering the organization. Failure to do so is grounds for removal. (Appendix C) The results of the survey indicate that al Qaeda is administered in a manner that places religious deference before other considerations.

Question 3. Regardless of the business impetus, is there a link between al Qaeda's organizational focus of religious doctrine and its success?

Answer: Yes, the ability to remain focused on religious doctrine permits al Qaeda to broaden its audience base and secure financial support.

Question 4: Is business management and/or religious doctrine a determinant of mission selection?

Answer: It is a combination of the two, with religion offering the guidelines for execution of the mission. The literature search identified examples of mission planning that were delayed or restructured based on criteria other than religion exclusively or business management exclusively.

Question 5: Will business management or religious doctrine determine which biological weapon is selected for use in an attack?

Answer: Of the two, religious doctrine will govern more because there are guidelines in the Holy Qur'an for interacting with an enemy. For bin Laden or al Zawahiri to execute a biological weapon attack, he would have to adhere to those rules so that noncombatants are protected as much as possible.

Based on the study, the indication is that the hypothesis is correct, but only to an extent. Al Qaeda incorporates a business approach to selecting, planning and executing

mission activities, but it does so under the guidelines set forth within the discipline of Islamic economics. A more accurate statement would be that al Qaeda incorporates an Islamic economics approach to selecting, planning and executing mission activities.

5.2 Rationale for Approach and Implications of Results

Why conduct all three analyses? What do they offer together that a sequential assessment over time could not provide? The answer is simple: together the analyses offer a more robust appraisal of the al Qaeda organization and its method of decision making. They acknowledge intangibles like a business perspective to decision making and accommodate Islam as the driving force that is used to frame information so that a desired behavior on the part of listeners is achieved.

Assessment Assumptions

Answers to the study provided a springboard for assessments that extend beyond the survey and the nodes of the network. These assessments were conducted employing several assumptions. First, it was assumed that al Qaeda impartially applies the requirement to belong to Islam to its membership. Second, it was assumed that all who are members or seek membership into al Qaeda are subject to al Qaeda's terms and conditions of strictly adhering to Islam (as interpreted by al Qaeda). Third, it was assumed that the decision to execute a major terrorist attack like 9/11 was made by the leadership close to bin Laden or a planner who had executed such an attack in the past. With these in mind, I examined the results achieved in the three uni-dimensional assessments of al Qaeda and then superstruct their blended contribution to the final product.

Al Qaeda Terrorism Business Management

Al Qaeda has structured an international business conglomerate from its humble “in-the-garage” beginnings. Focusing on this business conglomerate perspective of al Qaeda we could assess its financial management in manner similar to a Standard & Poor’s assessment of any other decentralized large corporation that is listed on the New York Stock Exchange. Investment research could then appear on a terrorism exchange index. A proposed North American Industry Classification System Code entry and a Kompass International Neuenschwander SA, an international business industry classification system, are provided at Figures 37, 38, 39.

These suggested listings offer al Qaeda’s constituent groups an alternative view of it as an organization. Just as the Kompass or NAICS listing for McDonald’s offers its shareholders or potential shareholders a means to assess the wisdom of investing, the proposed listing for al Qaeda acts as a tool to focus the reality that any major contributor to al Qaeda has done the same thing. There are al Qaeda competitors who could benefit from investing and there are other avenues the investors could use for these same resources. Al Qaeda has to present a balanced scorecard to justify investor confidence.

Al Qaeda Mission Value Function

One aspect of that balanced score card is value¹. The value received from an al Qaeda mission is the relationship between the mission’s cost plus its time, quality of mission and functionality.

$$V_m = f(c+t+m_q+m_f)^{4,5}$$

The cost of a mission and the time needed to plan and execute that same mission are objective quantifiable factors of the value function equation.² The mission quality and functionality are subjective in nature and not as easily defined. They are the result of an abstract business value placed on the desired results and are highly dependent on the decision making process and its outcome. Al Qaeda's business value equation has the added dimension of significant impact from Islam. Because of this the resultant formula for al Qaeda is:

⁴ Moffat, M (2007) "Value Function" Economics. About.com
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⁵ Sutton, R. (2004) "The Value Function Hypothesis". Reinforcement Learning and Artificial Intelligence. Edmonton, Alberta (CA),

Table 5. Al Qaeda Value Function

$V_m = f \{ (c+t+m_q+m_f) \}^I$	
Where	
V_m	Islamic business value of the mission
c	cost of the mission
t	time from planning through mission execution
m_q	quality of the mission execution
m_f	quality of the mission functionality to the jihad
I	Islamic perspective

The cost and time are concrete factors that harness the total expenditures and the total interval needed for appropriate execution. Mission quality execution captures the caliber of execution such that it extracts the maximum from resources and contributes positively to the non-tangible capital of the jihad. Mission functionality captures the intangible contribution to profit, marketability, and a perceived improved investor return on investment. Use of that concern for ROI could offer opportunity to use business tactics to counter the effectiveness of al Qaeda's business venture. Development of a terrorism monitoring tool that focuses only on the business ramifications of the missions executed by al Qaeda, or other terrorism industry members, provides means to display al Qaeda mission effects to al Qaeda's base constituency. One terrorism monitoring tool that may act as a platform for such information is a Terrorism Venture Index.

Terrorism Venture Index

The Terrorism Venture Index could provide, on a prescribed regular basis, general descriptions of the national regional and local economic impact of terrorist events. The Index can also provide conditions of the terrorism industry, changes in business operation and performance.

Using an asset based approach to the organization facilitates production of performance and quarterly statements. These statements can provide comparisons of organization versus the industry, trend analysis and projected performance data. Experts can then assess the valuation data for geography, industry and company impacts. Growth or decline of revenues, expenses, assets and liabilities are also potential areas of review.

Employing an asset based approach to the organization's valuation, minimizes analysis bias. The organization's tangible assets such as personnel, real estate and office equipment are readily quantifiable. But the intangibles like trust, goodwill and adherence to Islam are less determinable. These, however, are important and very relevant to any derived indicator values.

These indices could include number of civilian deaths attributed to the organization, number of small and medium size firms closed because of terrorist activity, number of jobs lost because of explosions, number of schools closed because of the actions and the number of children without an education because of the disruptions. Constituent groups would, of course, have access to the comparison data.

Kompass International Neuenschwander SA (Proposed)

Al Qaeda
Bait al Ansar
Peshawar, Pakistan⁶

Farouq Mosque⁷
Brooklyn, NY

www.alneda.com
www.jihadunspun.com

Products and Services

Nature of Business

Activities

Disruption, Fear: Technical and physical threat to objects, security, citizens. Anti-security, theft services. Informational Services, fear consultations, Special explosion techniques and services, Research and Development for security threat devices.

P – Producers

D – Distributors

S – Service provider

E- Export

I - Import

P/D Disruption

D Fear

E/I Technical and physical threats

P/D Fear Consultations

S Anti-security/theft

P/D Research and Development

Figure 37. Proposed International Community Industry Code Entry

⁶ Abedin, M. (2004) "The Essence of al Qaeda: An Interview with Saad al-Faqih" Spotlight on Terror Vol. 2, Issue 2. The Jamestown Foundation. Online

http://www.jamestown.org/publications_details.php?volume_id=397&&issue_id=2907

⁷ Meron, D. a B.S. (2005) Joint Statement to Hearing Before the United States Senate Judiciary Committee. Washington, DC. http://kyl.senate.gov/legis_center/subdocs/042005sabinmeron.pdf

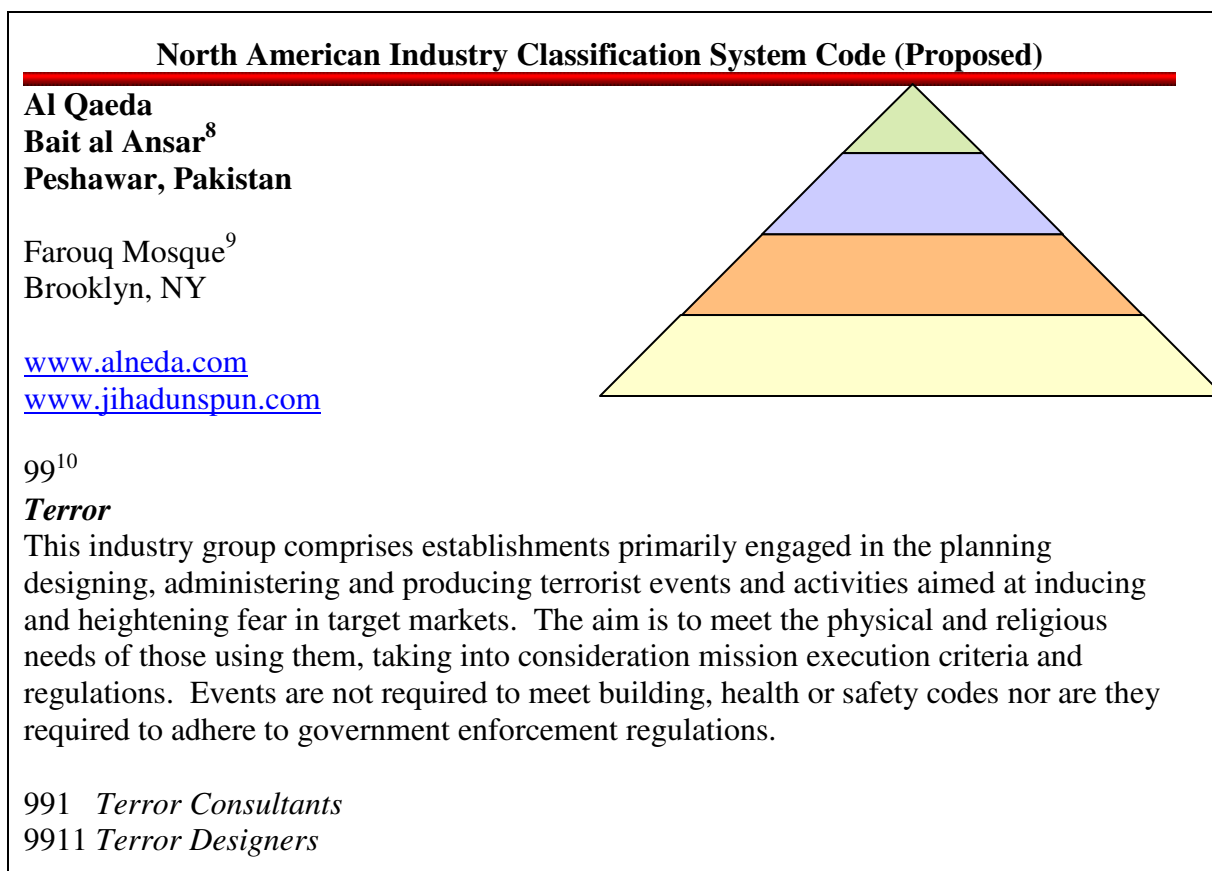


Figure 38. Proposed North American Industry Classification System Code

⁸ Abedin, M. (2004) "The Essence of al Qaeda: An Interview with Saad al-Faqih" Spotlight on Terror Vol. 2, Issue 2. The Jamestown Foundation. Online
http://www.jamestown.org/publications_details.php?volume_id=397&&issue_id=2907

⁹ Meron, D. a B.S. (2005) Joint Statement to Hearing Before the United States Senate Judiciary Committee. Washington, DC. http://kyl.senate.gov/legis_center/subdocs/042005sabinmeron.pdf

¹⁰ Current NAICS numbering ends with category 928 National Security. The criteria for each is different therefore a new category seemed appropriate.

North American Industry Classification System Code (Proposed)

Al Qaeda International

Location,

Located In Community:

Bait al Ansar¹¹

Peshawar, Pakistan

Farouq Mosque¹²

Brooklyn, NY

Website:

www.alneda.com

www.jihadunspun.com

Description and Services

Terror event design and execution

Hours:

24 hours/7 days

NAICS Classification: 991110 Full Service Terrorists

Established: 1989

Employees (Range): Uncertain¹³

Figure 39. North American Industry Classification System Entry – Six Digits

¹¹ Abedin, M. (2004) "The Essence of al Qaeda: An Interview with Saad al-Faqih" Spotlight on Terror Vol. 2, Issue 2. The Jamestown Foundation. Online

http://www.jamestown.org/publications_details.php?volume_id=397&&issue_id=2907

¹² Meron, D. a B.S. (2005) Joint Statement to Hearing Before the United States Senate Judiciary Committee. Washington, DC. http://kyl.senate.gov/legis_center/subdocs/042005sabinmeron.pdf

¹³ Information references, Morawski, Deanna, Inside Al Qaeda, CNN Student News, June 13, 2006, <http://www.cnn.com/2006/EDUCATION/06/13/transcript.wed/index.html>, accessed February 17, 2007.

Positioning al Qaeda – Economically Speaking

As mentioned earlier, initial efforts to formalize al Qaeda began as the Afghanistan conflict ended. Bin Laden structured an organization which relied on a common denominator for all targeted audiences: Islam. From an economic perspective, bin Laden's decision to 1) declare jihad publicly, 2) emphasize Islamic economics and 3) use pro-Islam rhetoric offered a strong platform from which to approach his base: all followers of Allah and the Prophet Mohammed.

Grounding his organization in this Islamic infrastructure provided bin Laden with an avenue to structure an (initially) unwritten nonbinding contract with his entire potential recruiting, fundraising and marketing constituency. It placed few requirements on those who were not direct fighters and could be perceived to have created an environment of *tawheed* (unity) and brotherhood for those direct participants who chose to remain with him and help build the organization.³ Tangible representations of this nonbinding contract were demonstrated in each of the binding contracts and administrative tools executed with mujahadeen who remained after Afghanistan and fighters who assisted the implementation of the new organization. The goals and objectives reflected an Islamic value system that intentionally differentiated itself from the organizations and values of the West. The use of employment contracts, company benefits and training in Islamic teachings validated the organization's commitment to the Islamic principle of work and productivity.⁴ It suggested an equitable pay scale that was not always available in Western businesses. It also created a protection from employees testing the system for the highest possible remuneration since Islamic law prevents an

employee from demanding what could be deemed an inappropriate amount for his or her work.⁵ This ultimately provided bin Laden with a means to control personnel costs and organizational spending.

Islam and the Business of Terror

Bin Laden's adherence to the first two principles of Islamic economics, unity and productivity, fostered an environment that made it conducive for observant followers of Islam to facilitate the third principle: equitable distribution. Structured as it was, al Qaeda became a justifiable entity to which observant followers of Mohammed could contribute funding and comply with the requirement of compulsory giving (zakah). Zakah contributors are permitted to contribute to programs that offer employment, family welfare, and income support in times of economic loss.⁶ Each of these areas is specified in al Qaeda's employment contract.⁷

Once the instruments of organization were in place, bin Laden had the reality of transitioning conditions, moving from the excitement of defeating a world power to the ambiguity of an undefined future. Bin Laden had to create a vision that was as lofty as the one achieved in Afghanistan if he wanted to keep his personnel interested. Targeting the only other world power was his only choice. Anything else would have been inadequate and bin Laden would have lost the momentum achieved with the defeat of the Soviets.

This restructuring of al Qaeda is important from a more universal perspective. The broadening of the organization to encompass the concept of Islam and its precepts resulted in a reengineered terrorism industry. This cottage industry of terrorism

differentiated itself from the intermittent attacks of mayhem and death. It could now create opportunities to market its jihad almost the same way Avon or Tupperware is marketed. Proponents of the concept could sell the jihad product to the general public and then refer potential recruits to training as they encounter them. The scope of operation and activity demonstrated by al Qaeda exemplifies what proponents of “New Institutional Economics” call flexibly supported activities. That is there were aspects of the business activities which the market could execute and others that required execution by al Qaeda itself.^{8,9} This decentralized approach to the business of terrorism changed the industry as a whole and caused non-terrorism industries to take note and try to emulate some al Qaeda business practices.¹⁰

Bin Laden created an organizational environment that placed a premium on relationships and the transmission of information via those relationships. Even parties to formal or informal contracts were part of the relationship network that encompassed al Qaeda. Contracts with employees, other organizations or even sovereign states were contingent on who needed to know what. All participants in those contracts were agents functioning within the al Qaeda social network.

The use of Islam as a framework for this social network permitted easy definition for such concepts as the cost of each transaction. Framing the organization around Islam also significantly reduced the potential for opportunistic behavior that could result from any market activity (mission). Again, Islam acted as a police force on constituent groups because it fences member behaviors and offers avenues of control for those who might be tempted to behave in a fashion that could be deemed opportunistic. Members’ earnings

are limited by the concept of *rububiyah*. Followers of Islam can not accept a rate of compensation that exceeds the labor input and resources allocated for that labor. If a higher level is accepted then this is considered excess and excess is forbidden in Islam.

The principle of distributed equity is also considered a control on behavior that an observer might interpret as acting out of guile.¹¹ Such behavior might prevent the equitable distribution of personal or private property or it might cause one to accumulate excessive wealth.¹² Neither action is permitted in Islam and is therefore forbidden in al Qaeda.¹³

Incorporating these controls allows an al Qaeda budgeter or financial planner to structure his/her planning documents in such a way that few of the ambiguities associated with Western planning are necessary.

In Western culture planners have to anticipate responses from individuals who have agreed to participate in a mission but are making their decisions from a bounded rationality viewpoint. These planners have to assume that, at times, those decisions may be opportunistic in nature. With bounded rationality, the planners recognize that a network member (leader or implementer) makes a choice, with a certain amount of uncertainty, after applying whatever limited information he has to the alternatives available.¹⁴ However, this decision making process is complicated by the potential for Western network members to include an opportunistic slant to that decision.

Opportunism is often exhibited when the network actor believes he (or she) could improve his/her self-interest outcome from a transaction if a specific response is made; and if the opportunism includes guile then deception or misinformation must be

anticipated. Such self-interest behavior and motivations could indicate a desire to horde, a practice that leads to wealth held by only a few in a society.¹⁵ Planners of an Islamic economics influenced event may not have to incorporate this aspect into their planning. Such behavior is abhorrent to Islam and discouraged in Islamic economics.¹⁶ Behavior controlled by the concept that all are subject to the precepts and tenets of Islam would face peer pressure to avoid any public display or appearance of displaying of hoarding. Bin Laden himself is an example of this. His public image is one with reflects none of the trappings of his family's wealth or position.¹⁷ His speeches admonish the United States for its accumulated wealth and displays of accumulated wealth.¹⁸ And his contracts with recruits require that they adhere to the Holy Qur'an and Shari'a law.¹⁹

Industry and Market

Prior to 9/11 the al Qaeda annual budget was estimated at \$30 million dollars. Sources indicate that 90% of that budget went to infrastructure such as training camps and only 10% supported missions.²⁰ This means that more than \$24 million is dedicated to developing the third generation of fighters.²¹ As a business it appears that the planners and leaders of al Qaeda have identified funding priorities that focus on future development. Any United States plans to counter the al Qaeda threat must reflect this same funding priority.

Terrorism Management Survey Analysis

The management survey incorporated responses from terrorism experts on areas related to management and organizational functions, policies, external influences and

growth capabilities. The results (Tables 6, 7) indicated several areas of strength and many points of opportunity from an al Qaeda perspective. Several significant threats and weaknesses were identified from that same point of view. Of the 75 surveyed areas of interest, the major SWOT area that is of immediate concern to the question of identifying and disseminating biological weapons, that is “does al Qaeda have the capability” to accomplish this feat, is analyzed using an al Qaeda improvement focus.

This approach to the SWOT results assumes a corporate strategy that seeks to innovate and shock its intended audiences. It also assumes a continued demand for services, readily available recruits, and a potential to positively influence biological experts or their immediate influencers toward the al Qaeda goals and objectives through the use of Islamic tenets or adherence to Jihad. In addition, the SWOT assumes an audience relationship matrix as identified in Table 8.

Table 6. Strength-Weakness-Opportunity-Threat Analysis Matrix

	Strength	Weakness	Opportunity	Threat
Management Functions	Technical expertise Network with customers Network with suppliers Diversity of Subsidiaries Use of technology in communicating with stakeholders Use of creative approach to delivery Recognition of al Qaeda name Labor relations	Improvements to product delivery Cost of missions	Access to incendiary device delivery (T) Use of technology in executing missions (T)	Control over raw materials (T)
Organizational Functions	Managers Experience Training Opportunities Dedication of members Working Capital Sources of information Islam in messages Use of media	Ability to manage change Ability to adapt to change in competitors capabilities Personnel Turnover	Use of e-commerce to finance opportunities (T)	
Policies	Creation of fear in intended audiences		Target Market Demographics (E) Identification of demand for goods and services (E) Stakeholder	Use of violence against followers of Islam (S)

			interaction (S)	
External Influences				US Government policies (P) Relationship with Middle East governments (P) Current Iraqi government policies (P) Relationship with Saudi Arabian government (P)
Growth Capabilities			Asian Market (E) African Market (E) US Public Perception of Iraqi war (P)	
Other	Willingness to use biological weapons	Access to Biological weapons raw materials Access to Biological weapons expertise		
Key: Factor Type: P = Political, E = Economic, S = Sociological, T = Technological				

Table 7. Strength-Weakness-Opportunity-Threat Analysis Matrix

External vs. Internal Factors	Strengths	Weaknesses
Opportunities	Exploiting the diversity of its cells, al Qaeda can network with a wide variety of customers and suppliers in order to achieve a more creative approach to mission delivery. It can access many of its audiences electronically; this offers financial supporters the opportunity to financially aid the effort while retaining a modicum of anonymity. The unrest in Asia and Africa make it ripe for al Qaeda exploitation.	Al Qaeda must also overcome the weaknesses surrounding product deliver and cost of missions as tied to the threat posed in a lack of control over raw materials. Al Qaeda could overcome these shortcomings by exploiting its network of suppliers and customers library of older efforts that achieved some success in the past and could be implemented today with current resources. Al Qaeda will have to overcome the personnel turnover and one way is through its continued recruiting. This does demand a continued high regard for its efforts within the target audience communities. It also demands continued reliance on invoking Islam and exploitation of the Western media's practice of repeating al Qaeda successes even if they occurred in the past. This will ensure that the target markets retain the current perception and personnel remain available.
Threats	The capability to instill fear in intended audiences along with appropriate manipulation of the media, particularly in the area of al Qaeda's willingness to use biological weapons offers avenues to diminish the threat posed by the Middle East governments, the current US government policies and the current US administration. Al Qaeda	It will also have to invoke the media in countering the Middle East governments and its lack of available materials for biological weapons. Here the US' perception of the Iraqi war may be a plus.

	<p>need only hold on until the next administration in order to create an even more conducive environment for its goals and missions.</p> <p>The management threat posed by al Qaeda's policy of using violence against followers of Islam however requires a concerted media effort that will incorporate use of Fatwas and cleric sermons to convince members and the Islamic public that the practice, as implemented by al Qaeda, follows the Koran and Shari'a</p>	
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Table 8. Audience Relationship Matrix

	Investors	Employee	Muslims in Western Countries	Muslims in Middle Eastern Countries	Other Terror Organizations	Opponents of Israeli Sovereignty	Opponents of the United States
Audiences	Golden Circle gives Zakah gives Anti-West non-Islamists	Recruit ²¹ message must be tailored to demographic – use internet to achieve	Internal philosophy still follower of Islam Suffered some discrimination	Tired of violence Disgruntled with Allied behavior Uncertain of future	Aware of potential to expand influence Desire to replace al Qaeda as brand name terrorist organization	Remove point of conflict	Remove Western influence
Area of Interest	Participate in Jihad	Maintain-benefits program (includes perceived Islamic follower benefits as outlined by al Qaeda	Retain communication with heritage	Resolve internal and external conflicts	Expand interest	Eliminate perceived enemy	Eliminate perceived enemy
Area to Exploit	Ability to support removal of last superpower	Maintain mystique – like Marines	Comply with Shari’a and Holy Qur’an	Removal of infidel, could accelerate peace	Participate in removal of last superpower; control local governments	Removal of point of conflict	Removal of point of conflict

After classifying the audience base relationships and areas of interest, an integrated management survey matrix (Table 9) was developed to identify the most important internal and external market performance influencers. These were then matched to suggested strengths that could buoy opportunities and mitigate threats. Ideas to reduce weaknesses were aligned so that they also exploited opportunities and eliminated threats.

Table 9. Al Qaeda Management Survey SWOT Matrix

<div> <div>Internal</div> <div>External</div> </div>	Strengths: 1) creation of fear in targeted audiences 2) technology use in communicating with stakeholders 3) brand name	Weaknesses: 1) product delivery 2) access to biological weapons raw materials 3) access to biological weapons expertise
	Opportunities: 3 access to incendiary devises 4 use of e-commerce 5 growth in Asian and African markets	WO Strategy 1) imitate incendiary device delivery for initial biological weapon delivery 2) employ naturally obtainable lethal pathogens that are readily available in Asian and African environs as one leg of biological program 3) employ electronic technology and e-commerce more aggressively in biological weapons program development
	Threats: 1) control over raw materials 2) use of violence against followers of Islam 3) 3) relationship to current ME governments	WT Strategy 1) partner with agencies that can compete with state sponsored avenues in order to access biological weapons materials 2) recruit personnel with access to current ME governments who have biological weapons experts return to older systems like those of Unit 731 for suggestions on fear inducers and disease disseminators.

The overall objective of al Qaeda's SWOT Analysis Matrix is the creation of viable avenues for biological agent development. These options must maximize current resource use and product position while creating competitive alternatives to achieve the stated goal of biological weapon development. These same avenues could facilitate nuclear weapon production, but the focus of this study remains biological agents.²²

Terrorism Social Network Analysis: Computational Organization

Network analysis models, both social and dynamic, seek to capture a means to analyze several organizational forces such that estimates can be made that organization's responses to changes in those forces. When one of the forces considered is individual agent's responses, current models assume that removing the agent's node removes the agent's influence. The models assume either no influence or insignificant influence is exerted by the agent after the representative node is detached. However, this is far from the truth.

Nodes that are no longer active but continue to exert influence are nodes such as Abdullah Azzam or Sayyid Qutb. Both Azzam and Qutb are significant enough that Ayman Zawahiri detailed their influence on the jihadist movement in his writings and current members of that same jihadist movement are proud to cite even the faintest of connection to either man's family to prove their credibility and commitment.^{23,24} Long after they are both gone, Azzam and Qutb are exerting a significant behavioral response on several individuals, many of whom compound that influence by exerting their own Azzam-Qutb modified influence on current members' behavioral responses as well.

Building a Superstruct - Putting It All Together

As mentioned earlier, a significant concern for modeling these covert networks is the ability to capture and replicate the influence and nonverbal communication impact of forces not directly addressed during decision making. Currently, there are no models that can. Of particular concern is the lack of ability to capture sociocultural impacts such as Islam or the inherent need in some agents to adhere to the call of jihad. In addition, the culture and tradition of the Bedouin society play heavily in this behavior and, again, the models cannot mathematically reflect reality.^{25,26}

To accommodate these phenomena, a multi-faceted approach is necessary and this study initiates that effort with its three pronged pursuit. The business analysis offered a means to systematically examine the approach to decisions made about missions executed by al Qaeda network members. The survey provided a means to look at the business practices of the organization to which the network members belong. It offered an opportunity to look at the process of operating the organization and determine any strengths and weaknesses that may exist. The social network analysis let us look at the influences that drive the network members and the processes these members execute to ensure the organization runs efficiently.

Superstruct Result

Merging the results of the three studies results in a virtual influence environment expresses the various influences that could influence a mission planning assessment and the impact they can have on that mission decision making process. This Virtual Influence Environment includes influences such as personal trust, organizational trust,

mission dedication, training response, familial preference (experience based) commitment to oath, support for network, allegiance to mentor/teacher, planning preferences, WMD position transmission. Uniting all of these influences is Islam, the overarching authority for all network actors and their relationships. The literature, survey, business instruments and social network analysis all point to Islam as the skin that binds the al Qaeda unit. This skin permits exchange of essential elements in order to function properly and it protects from invasion, signaling when harm is imminent.

From the business development history of al Qaeda, the influence of Islam and the culture of the region, it is paramount that any representation of this entity support: trust (both personal and organizational), mission dedication, training discipline, familial preference, commitment to al Qaeda oath, allegiance to the Imam, prestige, and mission planning influence capability. While not all of these can be reduced to a mathematical equation, we can develop a systemized approach to incorporate their influence in order to determine potential al Qaeda behavior.

Incorporating all three facets provided a background on which to interpret data, offered recognition of the exponential impact of Islam on decision making and validated the significant control leadership can demonstrate when nonverbal influences are exerted. These nonverbal influences include Islam.

The inferred question driving this research was: Is it possible to apply qualitative and quantitative measures to the al Qaeda dynamic social network in order to identify a candidate list of biological agents that al Qaeda could and would employ in an attack against the United States and its allies? The results achieved indicate it is possible to

derive such a list; and the data accumulated during the development of that list suggest candidates may already be in use. The study indicated that the weapons selected by al Qaeda have substantial research data associated with them, some of that research dates back to World War II (Table 10).^{27,28}

This is not surprising; al Qaeda has previously demonstrated a propensity to utilize historical information as it executes a mission. For example, access to historical research on biological weapon is readily available and analyzing it provides background that could determine which biological weapon of mass destruction al Qaeda may employ.²⁹ Prioritization of the assessed weapons should apply the following criteria derived as I researched al Qaeda's target preferences: high destruction impact capability, low cost, ease of assembly, and quick dispersion.^{30,31} All of these criteria will act together to achieve the ratio needed to garner the high rate of return on investment and significant coverage needed to attract coverage by Western media outlets and create fear in the intended audiences. But Islamic law requires al Qaeda to sufficiently warn its targets before employing weapons that cause the havoc biological agents can.

In addition, Zawahiri will want to avoid killing children or targets questionable to the everyday Muslim. For Zawahiri, a repeat of the Shayma fiasco is unacceptable. Shayma was a young girl who was an inadvertent victim of his Al-Jihad Group during an assassination attempt against the Commander of the Central Military Zone. Zawahiri was the Group's leader at the time. The Commander lived. But the child, Shayma, died. The Egyptian government used the child's death against the group and ultimately turned popular opinion against al-Jihad's cause.³² Zawahiri has never forgotten the lesson or the

cost of that death.³³ To Zahwahiri, the jihad must continue, but the proper precautions must take be in place.³⁴

Because of this bin Laden, Zawahiri and other significant spokespersons want to insure the West has sufficient notice so they may continue to issue statements that act as compliance with Islamic requirements to sufficiently warn an enemy when significant devastation is anticipated. This may be why control/management of the fall out from a WMD event is so important to Zawahiri.

Type of WMD Attack

The list of agents researched by al Qaeda show an effort to bring variety to the attack. It also follows Zawahiri's guidance to launch a multi-prong attack.^{35,36} The agents on the list meet the criteria to bring fear to the victim that may result in a desired change in behavior.³⁷ US public policy makers can identify the investigated agents and determine feasibility based on the before listed criteria of high destruction, low cost ease of assembly and quick dispersion. First, it is necessary to develop an initial table identifying agent, delivery system, expected results and precedent (Table 10).

Table 10. Biological Agents Researched by al Qaeda¹⁴

Agent	Initial AQ Effort	Delivery System	Expected Result	Precedent
Anthrax	1999	Bomb/missile	Illness	Unit 731/Iraq
Botulinum Toxin	1999	Bomb/missile	Illness	Unit 731/Iraq
Ebola	1999	Uncertain	Death	Uncertain
Plaque	Unk	Ceramic bomb	Death	Unit 7331
Ricin	Unk	Various	Death	1978
Salmonella	1999	Various	Illness	Oregon 1984
Typhus	Unk	Water system	Death	Unit 731

The same type of matrix (Table 11) is plausible for chemical agents researched by al Qaeda. Included in that list are agents such as acetone cyanohydrin, malathion, napalm with sarin and potassium cyanide.

¹⁴ Various sources including Barrenblatt's "Plague Upon Humanity: The Secret Genocide of Axis Japan's Germ Warfare Operation" and Bale's "Chart: al Qa'ida's WMD Activities"

Table 11. Chemical Agents Researched by al Qaeda

Agent¹⁵	Initial AQ Effort	Delivery System	Expected Result	Precedent
Acetone cyanohydrin	2000	Water system Subway system	Death	Unit 731
Malathion	2004	Motar rounds	Death	
Napalm w/sarin	2003	Rockets	Media	
Osmium tetroxide	2004	Cocktail	Use volatility for media reaction	
Potassium cyanide	2004	Improvised weapon	Significant harm	
Hydrochloric acid	2004	Improvised weapon	Significant harm	
Sulfuric acid	2004	Improvised weapon	Significant harm	
Sarin	2001	Bomb	Significant harm	
VX			Death	

Once the biological agent matrix is developed, each candidate agent's potential to meet the criteria of success is completed. Comparisons of the results for each of these agents will determine which ones provide a balanced outcome (Table 12). A non-quantitative analysis is preferred because characteristics such as control or mass destruction versus mass disruption are variables determined by the circumstances, meteorological conditions or the physical structure in which al Qaeda will distribute the agent.

The analysis outcome, along with the estimated cost for resources to accomplish the task and the proposed time to establish and complete such a mission, will contribute

¹⁵ Pita, Rene, *Al Qaeda and the Chemical Threat*, Applied Science and Analysis, Inc. The ASA Newsletter.

to the value function as we determine if the mission meets the criteria for sufficient return on investment.

Table 12. Biological Agent Dissemination Criteria

Agent	Mass Destruction Potential (Media Potential)	Mass Disruption Potential (Media Potential)	Cost Effectiveness	Ease of Dissemination	Control (no more Shaymas)
Anthrax	Medium	High	Low (acquiring and processing)	High	Low
Botulinum Toxin	Low	Medium	Medium (if disseminated at gov. conf, etc)	High	High
Ebola	High	High	Low (production)	High (airborne)	Medium (lots of variables)
Plague	High	High	High	High (suicide jihadists)	Medium
Ricin	Low	High	Medium (targeted audiences)	Medium	High
Salmonella	Low	High	High	Medium	Medium
Typhus	Medium	High	Low/Medium (infected tissue must survive <u>and reproduce</u>)	High	Low

It is also possible that al Qaeda may test several of the agents to provide “actuals” versus “estimates” to complete the matrix. This real time data would also narrow the unknowns as planning progresses. For example the recent chemical attacks on allied troops in Iraq and the attempts to use ricin in Europe may offer a hint that the WMD mission influencers may have already begun to transition to employment of this weapon class on targeted audiences.^{38,39} These attempts may have garnered the development data

needed to accomplish al Qaeda's intended purpose: find out what works and what doesn't.

This suggestion is supported by the CI_Index-WMD (Table 13). Extracted from the Agent_CI_Index_WMD_Position table (Table 3), this index focuses on the WMD entity. Examining it, the results indicate the potential for a multi-prong strategy; one that involves nuclear, chemical and biological activities. This also increases the potential for all elements of the network to participate in the WMD program, an approach that could exploit the strengths of each element.

Table 13. CI_Index-WMD

CI_Index	WMD
16.8	Ricin, Botox, Unk chem.
19.4	Nuclear , Ricin
22.6	Chem, WMD general
30	WMD general
51.1	WMD general
53.9	Ricin suspected
73	Ricin
99.55	WMD, Dirty Bombs

CI_Index Derived Potential al Qaeda WMD Strategy

In addition, the CI_Index indicates a multi-prong strategy or plan. The first prong could provide WMD to the decentralized cellular force. The second could provide a missile or bomb released agent and the third would devastate with nuclear material release. Such a program permits the entire network with an opportunity to participate in

this aspect of the jihad, take ownership of the mission and create the illusion of an al Qaeda capability for later worldwide dissemination. Of course implementing the third prong of the plan would provide al Qaeda the status of a sovereign state with substantial negotiating capital. Implementation of the program could proceed as follows.

Potential al Qaeda WMD Strategy First Prong: ECD/EBD

For the first prong, the cellular force could have biological and chemical IED comparable substitutes that are readily available in nature.

With the increase in the use of ricin, it is plausible that this is the weapon of choice for the decentralized cell members. An e-university curriculum with online assistance can be used to disseminate information to an effective cadre. The instructions and guidance will provide that cadre with the capability to package and disburse a level of weapon equivalent to an improvised explosive device (Figure 40). Online jihadist magazines can also contribute to the learning by providing interviews with al Qaeda designated experts.

موسوعة الإعداد

وَأَعِدُّوا لَهُمْ مَا اسْتَطَعْتُمْ مِنْ قُوَّةٍ وَمِنْ رِبَاطِ الْخَيْلِ تُرْهِبُونَ بِهِ عَدُوَّ اللَّهِ
وَعَدُوَّكُمْ وَآخَرِينَ مِنْ دُونِهِمْ لَا تَعْلَمُونَهُمُ اللَّهُ يَعْلَمُهُمْ وَمَا تُنْفِقُوا مِنْ شَيْءٍ
أَخْرَجَتْهُ يَوْمَ الْحِسَابِ 22/12/2004
آخر تحديث يوم الخميس الموافق 22/12/2004
إخواننا عشاق الشهادة

وعلى طريق إثراء العلم العسكري عند المسلمين عامة وعند
المجاهدين خاصة، عدنا لنضع بين أيديكم الإصدار الرابع لموسوعة
على إعادة الخلافة الإعداد لتجهيز الكوادر الجهادية القادرة بعون الله
الإسلامية وعلى شفاء صدور قوم مؤمنين
إخواننا عشاق الشهادة

نحن نبرأ إلى الله من أي عمل يضر بالإسلام والمسلمين ، فقبل
القيام بأي عمل جهادي عليكم الرجوع الى فتاوى شيخ المجاهدين
أسامة بن لادن حفظه الله وإلى فتاوى القادة المجاهدين .
يعاودوا الدخول من وقت لآخر الى الموسوعة نرجو من الأخوة ان
وملفاتها في حال عدم فتح أي ملف ، لأن هناك ضغطا شديدا على
ملفات الإعداد ولله الحمد ، وايضا نرجو من الإخوة ان يساهموا معنا
في هذا العمل برفع الملفات على مواقع أخرى ونشرها في المنتديات
والله لا يضيع أجر المحسنين .

: ولإعادة دمج هذه الملفات نرجو منكم اتباع ما يلي
بعد تحميل الملفات يرجى وضع هذه الملفات في مجلد واحد والضغط
على ملف التجميع ليقوم بدمج الملفات وحفظ الناتج على سطح
المكتب .

تم إضافة مجموعة بريدية نستقبل فيها أي سؤال أو استفسار
بخصوص الموسوعة وملفاتها ، ونستقبل فيها أي ملفات جهادية غير
منشورة في موسوعة الإعداد حتى نقوم بنشرها .

http://groups.yahoo.com/group/e3dad_group

Figure 40. Al Qaeda e-Curriculum for WMD

The Preparation Encyclopedia

Last updated: Thursday 11 Dec 2004

The sura

Our Brothers, the lovers of martyrdom

Following the path of nourishing the military science to the Muslims in general, and to the Mujahideen in particular, we are back to publish, an at your fingertips 4th publication of, "The Preparation to Equip the Islamic Jihadist Cadets" so that they are capable (with Gods help) of Reviving The Islamic khilafa and mitigate the hearts of a faithful nation.

Our brothers, the lovers of Martyrdom,

In front of God, We are innocent from any action that harms Islam and the Mualims, so before executing any Jihadist action please come back to the Fattawi of Shiekh Elmujahideen ♦ Osama Bin Ladin ♦, May God care for him, and come back to the Fattawi of the Mjahedeen Leaders.

In the case that one file would not open, we request from our brothers from time to time revisit the encyclopedia and its files. The reason is that there is a high demand to access the Preparation Files and thank God for that.

Also, we request that our brothers contribute by uploading those files on other websites and distribute them in forums; God never loses good deeds.

To reconsolidate these files please do the following: after uploading the files, please put all these files in one folder and press on a compression program and then place the resulted file on your Desktop. We have added an email group to receive questions/ inquiries regarding the encyclopedia and its files. We also accept any Jihadist files that are not published in the encyclopedia, so that later on we publish in the future.

http://groups.yahoo.com/group/e3dad_group

Figure 41. Translation of al Qaeda e-Curriculum for WMD.

The agents designated for the decentralized network can function as the core items in a WMD structured attack strategy. These WMD IED equivalents or “expedient chemical detonator” (ECD) kits and “expedient biological detonator” (EBD) kits may also function as initial warning attacks. If these are followed by messages and warnings, al Qaeda will establish an environment that anxiously anticipates the release of a radiological device. Since al Qaeda believes attacks should occur in multiples, we would have to plan for a multiple release of the IEDs. It is assumed that the release would focus on the West, in particular the United States. The initial release would act as an alert that the capability is available and will be used. The second release would then act as follow through on ramifications promised in previous warnings.

The most likely initial agent for an EBD kit is ricin. Its reported appearance, or at least purported attempted use in Spain, France and the United Kingdom indicate an effort to deploy and field the above suggested configuration. Upgrades will most likely occur in rapid order, particularly as field engineers investigate means to improve dissemination and results. The web would continue to act as the intermediary for disseminating all upgrade information. Testing of the upgrades may or may not occur within the confines of a laboratory.

Additional agent candidates for the list of potential EBD include botulinum toxin, salmonella, Escherichia coli O 157: H7, anthrax. A few candidates that would require increased logistical support but could work include aflatoxin, bubonic and pneumonic plague. Again, because of the Zawahiri and Nasar requirement for devastation, employment of these agents would demand the need to incorporate an additional aspect,

such as a significant explosive device. The nuclear capability has potential because of al Qaeda's current association with both Pakistan and Iran. The Chechnyans reportedly have the potential as well. We must not neglect the potential for incorporating a bomb or series of bomblets to disseminate the agent. Such an event would provide ample opportunity for Western media to assist al Qaeda propaganda distribution.

The chemical component could develop simultaneously. Candidates for the ECD, expedient chemical detonator, kits include VX, tabun, nitrogen mustard, Malathion, potassium ferrocyanide and osmium tetroxide.⁴⁰ Some industrial level chemicals such as sulfuric acid, cyanide salts or even insecticides (other than malathion) could be used. However, their lethality is not as significant.⁴¹

Ultimately, any agent employed will have to have: capability to devastate, ability to garner public attention, and remain in the media for a significant period of time.⁴²

Potential al Qaeda WMD Strategy Second Prong: Bio/Chemical + (Plus)

The second prong could incorporate a bomb or bomblet carrying a chemical or biological agent. Zawahiri or his WMD Committee Chair could trigger the second stage by detonating the bomb or bomblet.⁴³ Chemical agents that qualify include sarin, VX, tabun, and mustard gas.

Biological agents that could function under the conditions of a bomb include aflatoxin, botulinum toxin and anthrax for biological.⁴⁴ Other agents which have been genetically engineered could broaden the available candidate list. For example, delivering the genetically altered Obolensk tularemia would have short and long term mission success effects.⁴⁵ Short term effects would include disarray within the US public

health system as medical services are consumed in an effort to mitigate the impact on the general public. Long term effects will include the realignment of even more already constrained funding from current public health programs to homeland security efforts. As stated earlier criteria for agent selection would include devastation capability and controlled cost of delivery.

Potential al Qaeda WMD Strategy Third Prong: Nuclear Release

The third prong would entail Zawahiri deploying a nuclear device. That nuclear device could have a two stage effect. The first would interfere with or destabilize the signals from satellites and communication towers.⁴⁶ The second could release the nuclear material on a mid-Western heavily populated area in order to intimidate and undermine the American psyche. The destabilization of electronic emissions for the satellites and other modes of communication need not last for a significant period.

It need only achieve a disruption. That alone could signal success because of the resultant Western media coverage that is almost assured. However, it could also offer opportunity for a broader hacker attack. These two aspects together could provide Zawahiri the devastation results he has sought. The psychological affects of such an attack would cause reallocation of US constrained resources, reduce American confidence and alert Western allies that they too are vulnerable. The radiological release of a nuclear weapon would permit al Qaeda to reshape its image to that of a sovereign nation and create an international atmosphere of uncertainty. Such a release could also affect US resolve to continue the War on Terror. The only concern with this phase of the plan is control of the weapon's dissipation. That is, control so that only infidels are

affected may cause a problem. If, however, the mid-Western populous (or similar area with low observant Muslim population) is targeted, this may be one problem area he is willing to negotiate.

Al Qaeda Decision Making

Each of the alternatives suggested has depended on a representation of al Qaeda decision making developed in the research. The representation of the decision making process is demonstrated in the two networks at Figure 42 and 43.

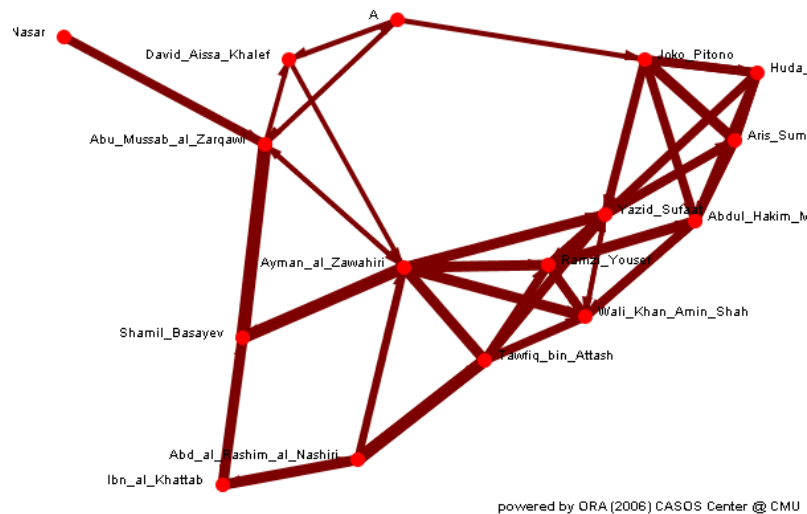
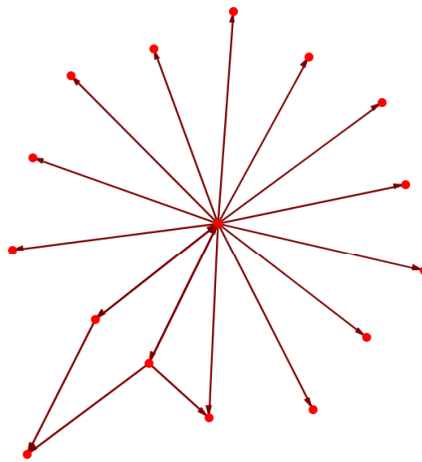


Figure 42. 16 Node al Qaeda Planner Network



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Figure 43. 16 Node al Qaeda Planner Network with Geodesic and CI_Index_at Minimum Joining Point

To identify the impact of relationships on the network movement, I removed all weight for each and gradually increased to determine the minimum at which all 16 rejoined. For the Agent Geodesic with no CI_Index the return took place at 1.00. For the Agent Geodesic with CI_Index, the return occurred at .6. This indicates that the relationships and influence that can be exerted can result in a decrease in the time needed to cause movement toward a decision.

In addition, the positioning of important nodes was reviewed and it was determined that the Agent Geodesic with no CI_Index and the Agent Geodesic with minimum CI_Index reflect a different position in the mission planning influence process. For example in the Agent Geodesic with no CI_Index Zawahiri was located within the network at point that could be considered part of the detail development. While in the

Agent Geodesic with minimum CI_Index Zawahiri was located at the apex of two cojoined triads. An apex that is framed such that it indicates Zawahiri is primarily a decision point. This would coincide with open source data that describes his position as final approver of mission execution or delay or determiner of the requirement to redesign. This could point to a diversified approach to attacks. It could also indicate a decentralized approach to the general planning program and a sequential more strongly controlled direction to major attack.

The limitation of the CI_Index is that it does not capture the influence exerted by Islamic culture, nor does it incorporate the functionality of network members' commitment to the principles of Islam.

It does acknowledge the limited knowledge (bounded rationality) of each decision and it recognizes the commitment each network member makes to the other members and the network itself. This commitment is in reality a contract, informal in nature, but still a business contract. This is supplementary to the employment contract agreement and the impact of the Islamic cultural value.

Mission Planning Behavior

Results from the CI_Index indicate al Qaeda mission planning and decision making are sequential for major events and decentralized for routine attack execution. This is apparent in the execution of missions and al Qaeda's relationship with associated member organizations.⁴⁷ It is also important to acknowledge that the decisions are executed from a bounded rationality perspective with a dimension of satisficing. The

CI_Index acknowledges that the “contracts” of al Qaeda and the Jihad are complex and that as an economic organization, al Qaeda is extremely supportive of an adaptive sequential decision-making process.⁴⁸

Extending the CI_Index acknowledgement to an environment in which members of al Qaeda function from a bounded rationality perspective, we can estimate the degree to which a planner will develop a mission for its destructiveness and/or media impact. The mission must satisfy specific requirements placed by the leadership, but it must also satisfy the requirements of Islam.⁴⁹ Therefore devastation carries the additional element of notification in order to permit potential victims an opportunity to alter the behavior demanding the attack.

It also offers avenues to examine previous mission execution in an attempt to anticipate future missions.

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6. Conclusion

Acquiring and using weapons of mass destruction have long been al Qaeda's goals.¹ Evidence indicates al Qaeda has or has had access to nuclear device apparatus, botulinum toxin, anthrax, and cyanide gas since the late 1990's.² There is significant speculation surrounding al Qaeda's delay in using these destructive devices.³ The reasons most often cited include a lack of technical expertise to develop and an inability to disseminate these devices.⁴ But a recent suggestion that the methods devised thus far provide insufficient devastation may be closer to the truth.⁵ Ayman Zawahiri, al Qaeda's second in command, has long been a supporter of bin Laden's desire to acquire weapons of mass destruction.⁶ Zawahiri has even conducted interviews of candidates to carry out the development of this class of weapon.⁷

6.1 WMD Potential Attacks- A Business Decision Process

The organizational and business skills required to achieve the results of 9/11 have often been cited as examples of Osama bin Laden's business acumen.¹⁶ As a result of this business success other groups now attempt to imitate it.¹⁷ Bin Laden has found a means to "enculturate" al Qaeda.

Bin Laden has harnessed both Islam and the unifying force of jihad to accomplish al Qaeda business objectives. He has united the followers of Islam by declaring a worldwide jihad, insisting it must belong to all.¹⁸ The unity of purpose for all in Islam

has been emphasized in business development, investments and subsidies for groups and organizations.¹⁹ Prior to this point, most terrorist organizations focused on a perceived injustice for which there was no other means to rectify the situation than their focused violence. They also felt they lacked opportunity for real political participation.²⁰

Bin Laden's envelopment of Islamic values and beliefs created a social fabric for al Qaeda business networks that all recognized and comprehended a goal of defending the faith. Al Qaeda businesses and investments across the globe, including subsidized groups of other organizations, shared this common set of beliefs and values.^{21,22} The Al Qaeda business model could even boast that it distinguished itself from its Western counterparts through this major difference: guidance from Allah. Bin Laden had sought consultation and decision rendering from religious advisors prior to the evolution of each facet of al Qaeda.²³

In creating this social fabric Bin Laden forged a path that ultimately led to a satisficing of all of his constituent groups: These groups include those fighters who wanted to continue the struggle even after the Soviet Union left Afghanistan, investors who did not want their support known, followers of Islam who did not immediately accept the idea of bin Laden's jihad being their jihad, and members of the media who could not resist the story, even if it helped al Qaeda propaganda.

6.2 Suggested Pro-Active Approach for United States

The WMD potential developed within this research is based on open source data and reliably reported incidents of al Qaeda attempts to either acquire or use agents within this weapon class. It does not address the potential threat al Qaeda can represent if it

acquires, manufactures, and disseminates any of the newly emerging pathogens that may or may not have natural origin. Between 1973 and 2003 more than three dozen new microbial diseases emerged.²⁴ During that same time frame more than 70% of those diseases were zoonotic.²⁵ Each is a potential weapon against the West if obtained by al Qaeda.

As a means to focus the investigation onto the breath of al Qaeda's WMD weapon arsenal, researchers can create Biological Agent Dissemination Criteria matrices for pathogens and genetically altered threats to determine which ones exhibit a behavior similar to the criteria of identified agents in the researched agents and agent dissemination charts. It is difficult to determine if all are naturally occurring, but a study could identify which could fit the criteria of high destruction, low cost, ease of assembly and quick dispersion. Those that manifest these tendencies can act as demonstration models for US Public Health response capability. Collating these threats will focus logistic avenues and constrained fiscal resources. These same pathogens can become high priority items for observation and review for activity and outbreak throughout the World Health Organization purview.

To further hone the list, social network analysis can establish CI_Index model indices for these agents as defined by al Qaeda's leadership and planning community associations and interactions. The indices can then guide agent determination hierarchy. The determination must include an analysis of the agents' devastation rule, according to Islam. Can Islam permit the use of the agent? Will notification rules apply? Does the

agent offer a means to selectively isolate US personnel or Western cultures? From an historical perspective would the use of the agent seem appropriate?

Historical agents must also remain a part of the CI_Index construct. Much historical research work is catalogued and available for public consumption. Agents, microbes and viral entities have long been researched. Many could be employed using low tech, low cost processes. For example, in 1947, Drs. Theodore Rosebury and Elvin Kabat provided detailed information on 33 bacteria and viruses that an interested party could disseminate from an airplane.²⁶ Parallel analysis of these low tech, low cost, researched agents to the emerging threats using the CI_Index and the agent dissemination criteria could produce important results.

6.3 Suggested US Action - Respond Like al Qaeda

Bin Laden's social fabric is interwoven into the value function of terrorism. Therefore the United States should develop a similar social fabric in its nonpublic health response. While several approaches are available for the US to do this; one that warrants investigation is the idea of modeling a strategy on bin Laden's. This nonpublic health response is just as important as the public health program in that it could begin to dampen current Muslim displeasure with Western culture and buttress any positive aspects to the relationship between the worlds.

As this research has shown, bin Laden's approach was not original - but it did work. Bin Laden followed the esteemed 14th century social scientist/economist Ibn Khaldun by first framing the argument historically, offering reasons for the situation, presenting the problem in context and then suggesting a clear solution. The United States

can develop communication vehicles that will frame their argument historically, offer reasons for the situation, present the problem from an Islamic framed perspective and then suggest a detailed solution. We, too, must tailor the approach so that the needs of the present and the future are addressed as bin Laden did. We must also develop an historical context that acknowledges wrongs of the past but articulates examples of interactions between the West and Muslims that were handled correctly, and we must address the continually touted value system differences.

The US and allied response to these and any other type of attack must incorporate the needs of the public's health while balancing the voracious appetite of the Western media while considering the response from al Qaeda audiences', particularly "moderate" Muslims. Their view or perception of the response is key, if the US is to improve the current negative opinion held by many in the Muslim community.²⁷ The response must also include a positive acknowledgement of Islam as well.²⁸ This is very important, given the results of a recent Gallup poll that indicates there is no difference in the "religiosity of moderate and radical" Muslims.²⁹

6.4 Contributions of the Study and Suggested Focus of Future Research

The results of this study offer researchers a potential tool to incorporate intangibles such as religion in the analysis of terrorist network functions. The Communication/Influence index provides a means to examine the influence of non-verbals on terrorist decisions. In addition, the concepts of the CI_Index, mission value function and strength-weakness-opportunity-threat matrices present avenues that the United States can exploit as it develops its homeland security and anti-terrorism policies.

The terrorism venture index offers indices that can reflect back to al Qaeda, and other terrorism organizations, the damage their mission execution creates.

Last, the weapon of mass destruction candidate list provides US public health decision makers with an analysis tool for determining the highest potential threats against which protection strategies can be developed.

Future Study

Three avenues were pursued in determining the decision making process of al Qaeda. The first was justifying categorizing al Qaeda as a business and the business itself, terrorism, as an industry. The second was the management survey of terrorism experts. And the third was the application of the CI_Index.

The business categorization could benefit from additional industry performance information. This will offer a means to examine competition in the terrorism field and changes in that field's services and industry growth. Investigation of other terrorism organizations and their application of business principles is also necessary. Other concepts that would benefit from further investigation and data analysis include the application of the concepts of opportunism and asset specificity. The current definitions of these two business hypotheses need tailoring to capture the jihadist thinking.

The pilot management survey results suggest interesting concepts, but a larger pool of opinions from experts in the field would provide a means to achieve a confidence level appropriate to incorporating the results into network analysis reports. Validating the results of the pilot program would provide input for standardization of the CI_Index and the two business hypothesis definitions.

The CI_Index is a means to capture the relationships that exist between members of a terror social network, whether physically participating or not. It acknowledges the influence of non-active social network members and offers a mechanism to estimate the value of that non-active influence. The model assumes relationships are adaptive and therefore ebb and flow as the situation warrants. It also assumes that significant experiences and/or teachers remain with the network member long after the pivotal encounter ends. These experiences and teachers are influencers, in and of themselves, and their impact must be captured. Once captured, these influencers can suggest relational scales of probability for decision makers following a particular plan of action.

Areas for further development include broadening the universal scale of influence so that relationship indices created for a network will classify participants as current or non-current. It will identify type of influence and purported significance across the network. The scale must become a means to objectively rank communication as the unseen influence is wielded. Another area to study is the structural relationship shifts of influence that occur as the nodes are physically removed but the ability of these agents to affect, either directly or indirectly, is still unclear.

Review of the current reports used in ORA must occur to determine which of these currently available data analyses platforms remain appropriate. It is necessary to assess which statistical results best reflect influence versus risk. These same reports may remain appropriate for index generation but have interpretation which will result in their serving a different purpose.

In order to accommodate both risk and influence, modifications may require a decision point that asks if the model is determining influence or risk. If influence is chosen then the report choices may remain the same but the suggested interpretations could change. The influence may also impact risk analysis' report choice expansion because this influence on risk may bear investigation as well. Additional investigation of Islam's impact on the influence index is also warranted. Islam is critical to unraveling the jihadist mystique. And this mystique is key to reducing the network.

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APPENDIX A
UNITED STATES TRANSLATION OF
DECLARATION OF WAR AGAINST THE UNITED STATES
BY OSAMA BIN LADEN
August 23, 1996

**"Declaration of War against the Americans Occupying the Land of the
Two Holy Places"**

Our youths believe in paradise after death. They believe that taking part in fighting will not bring their day nearer; and staying behind will not postpone their day either. Exalted be to Allah who said: { And a soul will not die but with the permission of Allah, the term is fixed } (Aal Imraan; 3:145). Our youths believe in the saying of the messenger of Allah (Allah's Blessings and Salutations may be on him): "O boy, I teach a few words; guard (guard the cause of, keep the commandments of) Allah, then He guards you, guard (the cause of) Allah, then He will be with you; if you ask (for your need) ask Allah, if you seek assistance, seek Allah's; and know definitely that if the Whole World gathered to (bestow) profit on you they will not profit you except with what was determined for you by Allah, and if they gathered to harm you they will not harm you except with what has been determined for you by Allah; Pen lifted, papers dried, it is fixed nothing in these truths can be changed" Saheeh Al-Jame' As-Sagheer. Our youths took note of the meaning of the poetic verse:

"if death is a predetermined must, then it is a shame to die cowardly."

and the other poet saying:

" Who do not die by the sword will die for other reasons; many causes are there but one death".

These youths believe in what has been told by Allah and His messenger (Allah's Blessings and Salutations may be on him) about the greatness of the reward for the Mujahideen and Martyrs; Allah, the most exalted said: {and -so far- those who are slain in the way of Allah, He will by no means allow their deeds to perish. He will guide them and improve their condition. and cause them to enter the garden -paradise- which He has made known to them}. (Muhammad; 47:4-6). Allah the Exalted also said: {and do not speak of those who are slain in Allah's way as dead; nay -they are- alive, but you do not perceive} (Bagarah; 2:154). His messenger (Allah's Blessings and Salutations may be on him) said: "for those who strive in His cause Allah prepared hundred degrees (levels) in paradise; in-between two degrees as the in-between heaven and earth". Saheeh Al-Jame' As-Sagheer. He (Allah's Blessings and Salutations may be on him) also said: "the best of the martyrs are those who do NOT turn their faces away from the

battle till they are killed. They are in the high level of Jannah (paradise). Their Lord laughs to them (in pleasure) and when your Lord laughs to a slave of His, He will not hold him to an account". narrated by Ahmad with correct and trustworthy reference. And : "a martyr will not feel the pain of death except like how you feel when you are pinched". Saheeh Al-Jame' As-Sagheer. He also said : "a martyr privileges are guaranteed by Allah; forgiveness with the first gush of his blood, he will be shown his seat in paradise, he will be decorated with the jewels of belief (Imaan), married off to the beautiful ones, protected from the test in the grave, assured security in the day of judgment, crowned with the crown of dignity, a ruby of which is better than this whole world (Duniah) and its' entire content, wedded to seventy two of the pure Houries (beautiful ones of Paradise) and his intercession on the behalf of seventy of his relatives will be accepted". narrated by Ahmad and At-Tirmithi (with the correct and trustworthy reference).

Those youths know that their rewards in fighting you, the USA, is double than their rewards in fighting some one else not from the people of the book. They have no intention except to enter paradise by killing you. An infidel, and enemy of God like you, cannot be in the same hell with his righteous executioner.

Our youths chanting and reciting the word of Allah, the most exalted: { fight them; Allah will punish them by your hands and bring them to disgrace, and assist you against them and heal the heart of a believing people} (At-Taubah; 9:14) and the words of the prophet (ALLAH'S BLESSING AND SALUTATIONS ON HIM): "I swear by Him, who has my soul in His hand, that no man get killed fighting them today, patiently attacking and not retreating ,surely Allah will let him into paradise". And his (Allah's Blessings and Salutations may be on him) saying to them: "get up to a paradise as wide as heaven and earth".

The youths also reciting the All Mighty words of: {so when you meet in battle those who disbelieve, then smite the necks.....} (Muhammad; 47:19).

Those youths will not ask you (William Perry) for explanations, they will tell you singing

there is nothing between us need to be explained, there is only killing and neck smiting.

And they will say to you what their grand father, Haroon Ar-Rasheed, Ameer-ul-Mu'meneen, replied to your grandfather, Nagfoor, the Byzantine emperor, when he threatened the Muslims: "from Haroon Ar-Rasheed, Ameer-ul-Mu'meneen, to Nagfoor, the dog of the Romans; the answer is what you will see not what you hear". Haroon El-Rasheed led the armies of Islam to the battle and handed Nagfoor a devastating defeat.

The youths you called cowards are competing among themselves for fighting and killing you. reciting what one of them said:

The crusader army became dust when we detonated al-Khobar With courageous youth of Islam fearing no danger If (they are) threatened: The tyrants will kill you, they reply my death is a victory I did not betrayed that king, he did betray our Qiblah And he permitted in the holy country the most filthy sort of humans. I have made an oath by Allah, the Great, to fight who ever rejected the faith

For more than a decade, they carried arms on their shoulders in Afghanistan and they have made vows to Allah that as long as they are alive, they will continue to carry arms against you until you are -Allah willing- expelled, defeated and humiliated, they will carry on as long as they live saying:

O William, tomorrow you will know which young man is confronting your misguided brethren! A youth fighting in smile, returning with the spear coloured red.

May Allah keep me close to knights, humans in peace, demons in war. Lions in Jungle but their teeth are spears and Indian swords. The horses witness that I push them hard forwarded in the fire of battle. The dust of the battle bears witnesses for me, so also the fighting itself, the pens and the books!

So to abuse the grandsons of the companions, may Allah be pleased with them, by calling them cowards and challenging them by refusing to leave the land of the two Holy Places shows the insanity and the imbalance you are suffering from. Its appropriate 'remedy ,however, is in the hands of the youths of Islam, as the poet said:

I am willing to sacrifice self and wealth for knights who never disappointed me Knights who are never fed up or deterred by death, even if the mill of war turns In the heat of battle they do not care, and cure the insanity of the enemy by their 'insane' courage.

Terrorising you, while you are carrying arms on our land, is a legitimate and morally demanded duty. It is a legitimate right well known to all humans and other creatures. Your example and our example is like a snake which entered into a house of a man and got killed by him. The coward is the one who lets you walk, while carrying arms, freely on his land and provides you with peace and security.

Those youths are different from your soldiers. Your problem will be how to convince your troops to fight, while our problem will be how to restrain our youths to wait for their turn in fighting and in operations. These youths are worthy of commendation and praise. They stood up tall to defend the religion; at the time when the government misled the prominent scholars and tricked them into issuing Fatwas (that have no basis neither in the book of Allah, nor in the Sunnah of His prophet (Allah's Blessings and Salutations may be on him)) of opening the land of the two Holy Places for the Christians armies and handing the Al-Aqsa Mosque to the Zionists. Twisting the meanings of the holy text will not change this fact at all. They deserve the praise of the poet:

I rejected all the critics, who chose the wrong way I rejected those who enjoy fireplaces in clubs discussing eternally. I rejected those, who in spite of being lost, think they are at the goal, I respect those who carried on not asking or bothering about the difficulties, never letting up from their goals, despite all hardships of the road, whose blood is the oil for the flame guiding in the darkness of confusion. I feel still the pain of (the loss) Al-Quds in my internal organs. That loss is like a burning fire in my intestines I did not betray my covenant with God, when even states did betray it!

As their grandfather Assim Bin Thabit said rejecting a surrender offer of the pagans:

"What for an excuse I had to surrender, while I am still able, having arrows and my bow having a tough string?! Death is truth and ultimate destiny, and life will end any way. If I do not fight you, then my mother must be insane!"

The youths hold you responsible for all of the killings and evictions of the Muslims and the violation of the sanctities, carried out by your Zionist brothers in Lebanon; you openly supplied them with arms and finance. More than 600,000 Iraqi children have died due to lack of food and medicine and as a result of the unjustifiable aggression (sanction) imposed on Iraq and its nation. The children of Iraq are our children. You, the USA, together with the Saudi regime are responsible for the shedding of the blood of these innocent children. Due to all of that, what ever treaty you have with our country is now null and void. The treaty of Hudaibiyyah was cancelled by the messenger of Allah (Allah's Blessings and Salutations may be on him) once Quraysh had assisted Bani Bakr against Khusha'ah, the allies of the prophet (Allah's Blessings and Salutations may be on him). The prophet (Allah's Blessings and Salutations may be on him) fought Quraysh and concurred Makka. He (Allah's Blessings and Salutations may be on him) considered the treaty with Bani Qainuqa' void because one of their Jews publicly hurt one Muslim woman, one single woman, at the market. Let alone then, the killing you caused to hundred of thousands Muslims and occupying their sanctities. It is now clear that those who claim that the blood of the American soldiers (the enemy occupying the land of the Muslims) should be protected are merely repeating what is imposed on them by the regime; fearing the aggression and interested in saving themselves. It is a duty now on every tribe in the Arab Peninsula to fight, Jihad, in the cause of Allah and to cleanse the land from those occupiers. Allah knows that there blood is permitted (to be spilled) and their wealth is a booty; their wealth is a booty to those who kill them. The most Exalted said in the verse of As-Sayef, The Sword: {so when the sacred months have passed away, then slay the idolaters where ever you find them, and take them captives and besiege them and lie in wait for them in every ambush} (At-Tauba; 9:5). Our youths knew that the humiliation suffered by the Muslims as a result of the occupation of their sanctities can not be kicked and removed except by explosions and Jihad. As the poet said:

The walls of oppression and humiliation cannot be demolished except in a rain of bullets. The freeman does not surrender leadership to infidels and sinners Without shedding blood no degradation and branding can be removed from the forehead.

I remind the youths of the Islamic world, who fought in Afghanistan and Bosnia-Herzegovina with their wealth, pens, tongues and themselves that the battle had not finished yet. I remind them about the talk between Jibreel (Gabriel) and the messenger of Allah (Allah's Blessings and Salutations may be on both of them) after the battle of Ahzab when the messenger of Allah (Allah's Blessings and Salutations may be on him) returned to Medina and before putting his sword aside; when Jibreel (Allah's Blessings and Salutations may be on him) descend saying: "are you putting your sword aside? by Allah the angels haven't dropped their arms yet; march with your companions to Bani Quraydah, I am (going) ahead of you to throw fears in their hearts and to shake their fortresses on them." Jibreel marched with the angels (Allah's Blessings and Salutations may be on them all), followed by the messenger of Allah (Allah's Blessings and Salutations may be on him) marching with the immigrants, Muhajeroon, and supporters, Ansar. (narrated by Al-Bukhary).

These youths know that: if one is not to be killed one will die (anyway) and the most honourable death is to be killed in the way of Allah. They are even more determined after the martyrdom of the four heroes who bombed the Americans in Riyadh. Those youths who raised high the head of the Ummah and humiliated the Americans-the occupier- by their operation in Riyadh. They remember the poetry of Ja'far, the second commander in the battle of Mu'tah, in which three thousand Muslims faced over a hundred thousand Romans:

How good is the Paradise and its nearness, good with cool drink, But the Romans are promised punishment (in Hell), if I meet them I will fight them.

And the poetry of Abdullah Bin Rawaha, the third commander in the battle of Mu'tah, after the martyrdom of Ja'far, when he felt some hesitation:

O my soul if you do not get killed, you are going to die, anyway. This is death pool in front of you! You are getting what you have wished for (martyrdom) before, and you follow the example of the two previous commanders you are rightly guided!

As for our daughters, wives, sisters and mothers, they should take prime example from the prophet (Allah's Blessings and Salutations may be on him) pious female companions, may Allah be pleased with them; they should adopt the life style (Seerah) of the female companions of courage, sacrifice and generosity in the cause of the supremacy of Allah's religion. They should remember the courage and the personality of Fatima, daughter of Khatab, when she accepted Islam and stood up in front of her brother, Omar Ibn Al-Khatab and challenged him (before he became a Muslim) saying: "O Omar , what will you do if the truth is not in your religion?!"

And to remember the stand of Asma', daughter of Abu Bakr, on the day of Hijra, when she attended the Messenger and his companion in the cave and split her belt in two pieces for them. And to remember the stand of Naseeba Bent Ka'b striving to defend the messenger of Allah (Allah's Blessings and Salutations may be on him) on the day of Uhud, in which she suffered twelve injuries, one of which was so deep leaving a deep lifelong scar! They should remember the generosity of the early woman of Islam who raised finance for the Muslims army by selling their jewellery. Our women had set a tremendous example of generosity in the cause of Allah; they motivated and encouraged their sons, brothers and husbands to fight- in the cause of Allah- in Afghanistan, Bosnia-Herzegovina, Chechenia and in other countries. We ask Allah to accept from them these deeds, and may He help their fathers, brothers, husbands and sons. May Allah strengthen the belief - Imaan - of our women in the way of generosity and sacrifice for the supremacy of the word of Allah. Our women weep not, except over men who fight in the cause of Allah; our women instigate their brothers to fight in the cause of Allah.

Our women bemoan only fighters in the cause of Allah, as said:

Do not moan on any one except a lion in the woods, courageous in the burning wars Let me die dignified in wars, honourable death is better than my current life

Our women encourage to Jihad saying:

Prepare yourself like a struggler, the matter is bigger than words! Are you going to leave us else for the wolves of Kufr eating our wings?! The wolves of Kufr are mobilising all evil persons from every where! Where are the freemen defending free women by the arms?! Death is better than life in humiliation! Some scandals and shames will never be otherwise eradicated.

My Muslim Brothers of The World:

Your brothers in Palestine and in the land of the two Holy Places are calling upon your help and asking you to take part in fighting against the enemy -your enemy and their enemy- the Americans and the Israelis. They are asking you to do whatever you can, with your own means and ability, to expel the enemy, humiliated and defeated, out of the sanctities of Islam. Exalted be to Allah said in His book: { and if they ask your support, because they are oppressed in their faith, then support them!} (Anfaal; 8:72)

O you horses (soldiers) of Allah ride and march on. This is the time of hardship so be tough. And know that your gathering and co-operation in order to liberate the sanctities of Islam is the right step toward unifying the word of the Ummah under the banner of "No God but Allah").

From our place we raise our palms humbly to Allah asking Him to bestow on us His guide in every aspects of this issue. Our Lord, we ask you to secure the release of the truthful scholars, Ulama, of Islam and pious youths of the Ummah from their imprisonment. O Allah, strengthen them and help their families.

Our Lord, the people of the cross had come with their horses (soldiers) and occupied the land of the two Holy places. And the Zionist Jews fiddling as they wish with the Al-Aqsa Mosque, the route of the ascendance of the messenger of Allah (ALLAH'S BLESSING AND SALUTATIONS ON HIM). Our Lord, shatter their gathering, divide them among themselves, shaken the earth under their feet and give us control over them; Our Lord, we take refuge in you from their deeds and take you as a shield between us and them Our Lord, show us a black day in them! Our Lord, show us the wonderment of your ability in them! Our Lord, You are the Revealer of the book, Director of the clouds, You defeated the allies (Ahzab); defeat them and make us victorious over them. Our Lord, You are the one who help us and You are the one who assist us, with Your Power we move and by Your Power we fight. On You we rely and You are our cause. Our Lord, those youths got together to make Your religion victorious and raise Your banner. Our Lord, send them Your help and strengthen their hearts. Our Lord, make the youths of Islam steadfast and descend patience on them and guide their shots! Our Lord, unify the Muslims and bestow love among their hearts! Our Lord, pour down upon us patience, and make our steps firm and assist us against the unbelieving people! Our Lord, do not lay on us a burden as Thou didst lay on those before us; Our Lord, do not impose upon us that which we have no strength to bear; and pardon us and grant us protection and have mercy on us, Thou art our patron, so help us against the unbelieving people. Our Lord, guide this Ummah, and make the right conditions (by which) the people of your obedience will be in dignity and the people of disobedience in humiliation, and by which the good deeds are enjoined and the bad deeds are forebode. Our Lord, bless Muhammad, Your slave and messenger, his family and descendants, and companions and salute him with a (becoming) salutation. And our last supplication is: All praise is due to Allah .

Usamah bin Muhammad bin Laden Friday, 9/4/1417 A.H (23/8/1996 AD) Hindukush Mountains, Khurasan, Afghanistan.

**Text Supplied by : Muhammad A. S. Al-Mass'ari; CDLR (Committee For the Defence of Civil Rights in Saudi Arabia)

APPENDIX B

DEFINITION OF JIHAD

“STRUGGLE”

Followers of Islam believe that the Holy Qur'an is God's message as revealed to the Prophet Mohammed.¹ That message specifies principles for living here and in the hereafter.² Those principles concern social and economic justice, unity, righteousness and benevolence.³ On the road to a life to achieve these virtues, a person endures many struggles. These struggles are both internal and external. Jihad is part of that search for perfection and the struggle to attain it.⁴

Several verses of the Holy Qur'an are used as the source for Jihad discussion, but the one often used is:

And strive in His cause
As ye ought to strive
(with sincerity and under discipline)
(Surah XXII, 78)⁵

Derived from this source, a jihad, that is a struggle, is against a point of acrimony that employs the heart, tongue, hands and then the sword.⁶ Jihad of the heart governs enmity of the flesh and requires the sufferer to cleanse the soul.⁷ Jihad of the tongue controls communication, written and oral, difficulties.⁸ The means suggested for this

¹ Mohammad, N. (1985) "The Doctrine of Jihad: An Introduction". Journal of law and Religion Vol. 3, No. 2 pp. 381-29.7

² Ibid.

³ Ibid.

⁴ Ibid.

⁵ Ali, A. Y, translator. *Translation of The Qur'aan*. Al-Jannat, Karachi, Pakistan.

⁶ Willis, J. R. 1967. "Jihad fi Sabil Allah-Its Doctrinal Basis in Islam and Some Aspects of Its Evolution in Nineteenth-Century West Africa." *The Journal of African History* 8:395-415.

⁷ Ibid.

⁸ Ibid.

struggle is professing the Holy Qur'an.⁹ The third Jihad, jihad of the hands concerns adversity with good and bad.¹⁰ It can concern managing wealth or interaction with one's own family. The suggestion for this struggle ranges from a Hajj (pilgrimage to Mecca) to further reading of the Holy Qur'an.¹¹ Jihad of the sword is armed violence to right a wrong against Islam or defend against Islam's enemy.¹²

Jihad is more than "holy war".¹³

⁹ Ibid.

¹⁰ Ibid.

¹¹ Ibid.

¹² Ibid.

¹³ Ibid.

APPENDIX C
U.S. MILITARY ACADEMY COMBATING TERRORISM CENTER
TRANSLATION OF THE CAPTURED AL QA'EDA BY LAWS¹⁴

Document #: AFGP-2002-600048, Full Translation, Date: April 18, 2002

Document Summary: This is an advanced draft of Al-Qa'eda bylaws. The original document consists of 19 pages written in Arabic. The author's name is not mentioned.

The word "Jihad" often appears in the document, it can either mean "Muslim holy war", or "strife", depending on the general meaning of the text in which it appears.

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In the name of Allah the merciful the compassionate **Al-Qa'eda** Bylaws

A- Fundamentals

- 1- Definition
- 2- Goals
- 3- General policies
- 4- Bylaws generalities

B- Details of the Organizational Structure

- 1-The Emir
 - a. Definition
 - b. General Criterions
 - c. The Emir characteristics
 - d. The Emir Duties
 - e. The Deputy Emir Characteristics and Duties
 - f. The Secretary: His appointment and duties

2- The Command Council:

- a. Internal Organization
- b. Council member characteristics
- c. Command Council Authority
 - 1- Definition
 - 2- Council Authority

¹⁴ Received permission to reproduce translation of the Al Qaeda Bylaws from the U.S. Military Academy Combating Terrorism Center.

(TC: The original document's index page is not complete, but only contains the aforementioned items. The following page is a continuation of the index as added by the translator).

3- The External Relations Branch

4- Note (on above)

5- The regional Council

Executive Council

- Chairman

- Financial Policy

A- Bank Accounts

B- Expenditure Controls

Military Committee

- Definition & Goals

- Chairman

- The General Staff

- Training Branch

- Combat Branch

Security Committee

- Introduction & Goals

- Structure

- Bylaws

- Authority & Duties

- Decisions Execution Branch

- Organization's Security Branch

Political Committee

- Definition & Goals

- Operational policy

- Chairman: requirements, Authority and Duties.

Consultative Council

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A: Fundamentals

1- Definition and Purpose

A religious group of the nation of Mohammad (God's blessing and peace be upon him) whose faith is the faith of the believers in Sunna (profit teachings) and Jama'ah (consensus), are adopting Jihad as a method for change so that the 'Word of God' becomes supreme, and they (the group) are working to provoke Jihad, prepare for it, and exercise it by whatever means possible. The prophet said "There are those of my nation who are victorious and will stay victorious till the day they face their fate and die" narrated by (Al-Bukhari 252/4). And the Prophet also said: "There is still a group of my nation fighting for justice victorious over their enemy until the last of them fights the Antichrist" narrated by Abu Daud (The book of Jihad, Chapter 4).

2- General Goals

- 1- To spread the feeling of Jihad throughout the Muslim nation.
- 2- Prepare and qualify the needed personnel for the Muslim world by training and practical fighting participation.
- 3- Support, aid and help the Jihad movements around the world as possible.
- 4- Coordinate among the Jihad movements around the Islamic world in order to create a united global Jihad movement.

3- General Policies:

- 1- Full adherence to the Shari'a (Islamic law) and criterions in all of our beliefs and actions according to the Koran and the Sunna, and the interpretations of the nations' scholars.
- 2- To observe Jihad for the sake of God as a method for change, and strive to prepare for it and exercise it by whatever means possible.
- 3- Our ideology is to fight a holy war and not to be distracted by relief and aid operations or anything similar.
- 4- Our position is to have no relations with the world idols, the secular and national parties or anything that resembles them. They are our enemies till the time they believe in nothing but God. We will not agree on half-solutions, nor negotiate with them.
- 5- Our relations with the true jihad Islamic groups are based on cooperation, love and faith. We continue our attempts to unite and merge with them and accept nothing less than coordinating and friendship.
- 6- Our relations with the non-Jihad Islamic groups are cordial and based on love and advice; we acknowledge their good deeds and also tell them about their shortcomings if circumstances require.
- 7- Our relation with the Muslim scholars is love, respect. We will take the good from them and return what we think is incorrect.
- 8- Maintain complete independence, and we will not a follower to any party.
- 9- Reject regionalism and fanaticism. We will perform Jihad anywhere in the Moslem world if need and we are able to.
- 10- Take interest in the role of Muslim nations in Jihad, and try to agitate them and gain their support for Jihad to be the fuel for the battle.
- 11- Maintain our economic independence. We should not rely on others for our resources.
- 12- Secrecy is the basis for our operation. We shall only reveal what we are obliged to reveal.
- 13- Our policy towards the Afghani Jihad is advice and support in the battlefield, and cooperation with the Jihad organization we believe truthful; and coordination with Islamic Establishments in the Jihad field in matters concerned with our policy.

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4- Bylaws Generalities

- 1- The Principle of Shura (Consultative):

Apply the permanent Shura principle as stipulated in the Koran and as practiced by the Prophet, on the condition that is necessary but not mandatory, and should be practiced throughout the work place starting with the head office and extending to all branch committees

2- Quorum: The Shura Council sessions are considered legally convened if the majority of the members are present, conditional that at least three members and the chairman or his deputy are present.

3- Emergency Sessions: Emergency sessions are convened by a request from the chairman or the majority of the members.

4- Secret Ballot: The principle of secrecy is adopted in personnel evaluation

5- Follow up, calling to account, rewards and punishment:

Will take place according to rank/position from top to bottom, and in accordance with the organizational structure.

6- Requests and Complaints: Will take place according to rank from top to bottom, and in accordance with the organizational structure.

7- Grievances: If the grievance is against the immediate supervisor, then the grievant is permitted to bypass him and submit the grievance to the person above him in authority.

8- Overstepping the proper bounds of authority: Specialized departments at the administrative levels (horizontally & vertically) must be respected and not overstepped. This could be achieved by adhering to the following:

A- If in the overstepping occurred vertically from the top to the bottom due to an administrative decree; then the decree is frozen until it is discussed with superior officer to reach a decision to approve it or cancel it. If the superior officer insists on the overstepping without evidence, then a grievance is submitted.

B- If the overstepping occurred horizontally, it is completely rejected and a grievance is submitted by the aggressor against the victim to their common superior officer.

C- If an administrative overstepping occurred from the bottom to the top, the grievance is returned to immediate supervisor without issuing a decision on it, with reprimanding or punishing the aggressor to prevent him and others from repeating this again. In case the superior officer accepts this overstepping; the immediate supervisor has the right to submit a grievance.

9- The superior officer has the right to review and examine the work of lower levels under his supervision.

10- Reports: Reports are very important for decision making and the follow up of activities. Therefore, attention should be paid to it, and prepared periodically or at the request of officials, and it should be submitted on time.

11- First Rule: The right person in the right position irrespective of his previous regional, organizational affiliations; and or ethnicity.

12- Second Rule: Jihad is the basis in our work and we must maintain the feeling of Jihad in the minds of individuals working with us especially those away from the military activity by linking them with the preparation and fighting fields.

13- Jurisdiction: During meetings of the principal and secondary councils, only matters that are within the authority of the council can be discussed.

14- Absenteeism: Absent members from the 'Principal' and 'Secondary' councils sessions are to submit their excuses to the council secretary within sufficient time before the council convenes, or afterwards if circumstances do not permit for submission to the chairman.

B: Details of the Organizational Structure

1-The Emir

A- Definition

He is the brother directly responsible for all of Al-Qa'eda activities, and represents it internally and externally to attain its goals and policies. He is obliged to follow up its activities in accordance with administrative channels.

B- General Rules:

1- The Emirate has the rights of the private Emirate. But due to existing state of affairs, the qualifications of the Emir should be close to that of the General Imam, because most probably the Emir of this movement might have to issue legal Fatwa to distribute the spoils and others of the Jihad rules.

2- Choose the best available person for the job. It is not necessary that the best by characteristics as much as it is necessary to choose the better for the job. It is acceptable to choose the preferred in order to attain a benefit or prevent harm.

3- Do not appoint a person who is too anxious to be an Emir.

4- Age should be taken into consideration when candidates are equal in qualifications.

C- The Emir's Characteristics:

1- He must be just and comply with all of its the conditions manifested by the scholars in their books.

2- Have adequate legal knowledge to qualify him to carry out the responsibilities of this position.

3- Comprehension of Jihad (holy war): To clearly and fully understand without any hesitation the meaning of Jihad, believing that "Jihad" is the mean for change.

4- Described as being fair, speaks the truth, not greedy, intelligent, discerning, patient, treat people equally, farsighted, not a sinner, without the appearance of affluence, bold and resolute.

5- Experience: To have gone through, and gained a practical Jihad experience where he has gained leadership experience. He must fully understand the present conditions under which the Moslems and their enemies are living.

6- Duration of membership: He should be a membership in the organization for at least () years.

7- Dedication: To fully dedicate himself to carry out his responsibilities.

8- Education: University graduates are preferred.

9- Physical Fitness: To be physically and mentally fit to carry out his responsibilities.

10- Military Qualification: Must be as much as possible familiar with the military combat information.

11- To fulfill the following basic Imam (leader) characteristics: Moslem, Mature, Free, Male and Intelligent.

D- Duties of the Emir

- 1- Adhere to Shura principle and appoint a “Shura Council” to assist him called the “Command Council”.
- 2- Appoint and fire the deputy, the command council members, the executive council chairman, the committees chairman and his private secretary.

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- 3- Represent Al-Qa’eda internally and externally and bear the responsibility.
- 4- Pursue to achieve Al-Qa’eda’s goals and general policies.
- 5- Discuss and approve the “Annual Plan”, and amend it in emergencies.
- 6- Discuss and approve the “Annual Budget”, and amend it in emergencies.
- 7- Discuss and approve the bylaws, and amend them when necessary.
- 8- Resolve important emergency matters that are not covered by the bylaws.
- 9- Review the periodical reports submitted to him, and discuss it with his subordinates.
- 10- Evaluate the qualifications of those supervising the work, and endeavor to develop and promote it.
- 11- Prepare the annual “Finance Plan”, and work on its execution.
- 12- Follow up the activities of officials in the command, executive and regional councils in executing the plans and resolutions.
- 13- Review and be reassured about the process of work in all departments.
- 14- Attend all periodic meeting he is scheduled to attend.
- 15- Participate in the Jihad educational plans prepared by the Jurisprudence committee through speeches and writings.
- 16- Treat his followers gently, check on their conditions and solve their problems.
- 17- Take the allegiance from his followers in Al-Qa’eda.

The Emir’s Deputy:

His characteristics should be the same as the Emir or close to it. His authorities and duties depend on what the Emir authorizes him to do.

E- The Secretary

Appointed by the Emir to organize his appointments and foreign relations, and prepare his work schedules, maintain his files and accompanies the Emir wherever he goes. He has no access to work secrets.

2-The Command Council

A- The Internal Organizational:

- 1- The internal organization generalities previously mentioned in the fundamentals apply to the council.

- 2- Number of council members: Not to exceed ten, and not less than seven including the Emir and his deputy.
- 3- Appointing and firing the members: Carried out by the Emir and his deputy.
- 4- Convening of ordinary sessions: The council regular sessions will convene monthly.
- 5- Decision Making: Issues are raised according to the agenda for full discussion, and the chairman will reach a decision. He has the right if when unsure to refer the matter for a vote of the majority and his vote will be the tie-breaker.
- 6- Loss of membership: Loss of membership in the 'Command Council' is caused by the members being absent two consecutive sessions, without an acceptable excuse by the chairman.
- 7- The Council Term: The councils' term is one year, after which the council is dissolved and the Emir has to form a new council. There is no objection to partially or totally appoint the previous council members in the new one.

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- 8- The Council Chairman: The Chairman is the Emir when present or his Deputy in his absence. The Emir has the right to delegate someone else to chair the council when present, and empowers him with some or all of the chairman's authorities. The Chairman is obliged to carry out the following:
 - A- Manage and control the sessions.
 - B- Follow up on the execution of decisions.
 - C- Approve or amend the secretary's agenda for the session.
 - D- Make a decision on the Agenda's listed issues, after their being discussed and debated.
 - E- Supervise the secretary's work.
- 9- The Council Secretary

The council has a permanent secretary from the council members selected by the chairman to carry out the following:

 - A- Records the sessions' minutes.
 - B- Receives suggestions from members for discussion during the sessions.
 - C- Prepare the sessions agenda.
 - d- Inform the members of the sessions schedules and deliver to them the agendas at least (2) days prior to the regular sessions, and (1) day prior to the emergency sessions.
 - E- Distribute the sessions' decisions to council members.
 - F- Take a roll call; and follow up on absence excuses and submit it to the chairman for review.
 - G- Submit the members' requests to hold emergency sessions to the chairman or his deputy after making sure they meet the conditions of emergency sessions.
- B- Council Member Characteristics:
 - 1- Must be a member of Al-Qa'eda and fully aware of its state of affairs.
 - 2- Must have sufficient Jihad (fighting) experience.
 - 3- Must be capable and suitable for membership in respect to his level of education and practical experience.

4- Must have opinions, initiate discussions and be active during council sessions, and be able to keep secrets.

5- It is preferred that he be married and at least 25 years old.

C- Command Council Authority:

A-Definition of the Command Council:

Is a council chosen by the Emir for consultation; and responsible for matters of planning and follow up of the entire operation, and works hard to advise the Emir and correct his decisions to attain the operation goals and policy. The council is considered the highest authority after the Emir and his deputy.

B- The Council Authority:

1- Approves and amends the operation objectives and general policy.

2- Discusses and amends the bylaws and submit it to the Emir for approval or amendment.

3- Discusses and prepares the operation annual plan and the necessary budget for it, and submits it to the Emir for approval or amendment.

4- Appoints commissions or individuals to follow up on the work of committees.

5- Suggests the nomination or dismissal of council members and submits it to the Emir.

6- Dissolves the old committees, or merges them together or creates new ones.

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7- Deposposes of the Emir if he deviates from adhering to the Islamic laws in such a way that warrants this action, or when he loses his competence, and chooses a new Emir.

8- Selects a new Emir in the event the Emir and his deputy die or are captured together, and there is no hope for their liberation.

9- Pledge allegiance to the Deputy Emir and elect him as Emir in the event that the Emir dies or is captured and there is no hope for his liberation.

10- Select a new second deputy for the Emir to carryout his functions in the event they were both captured and there is no hope for their liberation.

11- Questions the Emir when he violates the objectives and the general policy; discuss the matter with him to either approve or reject his action with the council majority.

12- Prepares the monthly reports about the operation in general and submit it to the Emir.

3- The External Relations Branch:

Part of the Command Council, and responsible for following up on the external relations operations concerning the Regional Council, call to convene its meetings and prepare for it, and maintain contact with its members, visit them and meet with them or their representatives. It is proposed the Branch be composed of three part-time people (the requirements and their qualifications to be discussed with the brothers who have previous experience in this type of work. The branch after the appointment of its personnel requests the formulation of a bylaw and an operation program).

4- The nature of this council was reviewed and opinions were similar in labeling it as “nominal” with no defined function. The Council is to have a committee chairman and a separate operational plan supervised by the command council. There is no common

denominator factor between the committees to call them for periodic sessions except for general guidelines and operational coordination which usually called for when necessary by the council chairman. Thus, in this council, the importance of defining the conditions, characteristics, responsibilities and authorities of the chairman emerges, and I propose that it be discussed in the next session God willing.

5- The Regional Council: The nature of this council is similar to that of the Executive Council, because there is no common denominator between its members due to their different localities and problems. On the other hand, they all have one common destiny being the need to know the conditions of the Muslim world and Jihad in general. Also, their need for a unified educational curriculum, coordinated military programs and well studied political positions, etc. To achieve these common goals, the regional council session convenes. For these considerations (especially for considering the security factor) we propose the council convenes annually. It is possible to benefit from the council sessions to discuss the problems of the various regions privately with the Emir. With the above in mind, we understand now the necessity to discuss the council's bylaws or its authority.

The Executive Council Chairman Characteristics, Conditions and Responsibilities:

First: Characteristics and Conditions:

- 1- Must be a member of the Command Council.
- 2- Must be devoted full-time for this position, without any other responsibilities in Al-Qa'eda except when urgent, and should work diligently to remove them.
- 3- Must be a successful administrator, organized and keeps his appointments.
- 4- Must be easy going, accepts to look into problems, understand them, and attempt to solve them. The Executive Council is a field of operation with numerous problems.

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- 5- Must be physically fit to be able to perform his duties exceptionally.
- 6- Must possess enough general knowledge to qualify him from understanding the specialties of other committees in order to solve their problems and develop and progress their work.
- 7- Must reside in the city where the council is located.

Second: Duties and Authority

- 1- Take all measures, judgments and decisions to develop and progress the work accordance to the plan after consulting with the concerned committee chairman.
- 2- Follow up, call to account, punish and reward the committee chairmen.
- 3- Submit monthly reports about all committees' operations to the Command Council.
- 4- Hold periodic bi-weekly one-on-one meetings with committee chairmen.
- 5- Whenever necessary, hold group meetings with committee chairmen.
- 6- Conduct the necessary field visits to ensure that work is proceeding properly.
- 7- He has the right to review all sections of operations in committees under him.

Financial Policy

A- Bank Accounts:

- 1- The bank accounts should be in the name of the Emir, his deputy, the finance manager and another one or two persons picked by the Emir from the command council.
- 2- There should be only one dollar account and if increased for security reasons, we see no need for more than two in any case; one of them will be for the regional Directorates expenditures.
- 3- The Rupee accounts can be more than one account as necessary (register the individual authorized to open it after consulting the Emir).

These accounts are:

A- One account for the Executive council.

B- The Supreme Emirate account (to cover regional directorates expenses and other matters the Emirate decides it is not included in the bylaws.)

C- An account for the Economic Committee.

B- Expenditure controls: First: Expenditures of the Executive Committees Account

1- Fixed Budgets: Every committee has a fixed budget approved by the Emir after it is discussed between the related committee chairman and the Regulation Committee. The expenditure must never exceed the approved budget regardless of the circumstances. These budgets can be periodically drawn on by the accounting departments (after being approved by the executive council chairman).

2- Unexpected Expenses: A percentage of the total fixed budgets is approved for the committees as a reserve fund to cover unexpected expenses or which exceeds the authority of the person in charge. We propose that this percentage be one quarter, and the expenditure be approved by the executive committee chairman.

3- The executive committee chairman has the authority to issue a one time (within the term of the previous reserve clause) rewards and non-monitory incentives to members of the council and committees not to exceed five thousand Rupees.

4- Anything else outside the approved annual plan is covered from the account of the Supreme Emirate.

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5- To avoid budgetary confusion; it is forbidden to borrow from the account of the executive committees.

6- The committee chairman is permitted to spend wisely from the budget allocated to the committee on the approved budget items. We propose a maximum limit to be spent by each committee chairman not to be exceeded even once.

7- The committee chairman is permitted to issue a maximum of (2,000) Rupees each time cash rewards and incentives for his committee members within the limits of the committee budget.

Second: Expenditures of the Regional Council and the Top Administration. This includes two parts:

A- Those related to budgets of fixed regional areas: Expenditures are periodically paid by 'External Relations' branch (after the budget is approved by the Emir or his deputy) with

two signatures of the committee members. Borrowing from other budgets is absolutely not permitted under any circumstances.

B- What decided by the Emir or his deputy as exceptions to the fixed budgets and considered private expenses are paid with one of their signatures as rewards and incentives.

Third: The Account of the 'Economic Committee'

1- The budget for the projects chosen by the Emir and the executive committee chairman are approved.

2- The approved projects expenses are on this account with two signatures from the economic committee, one of them must be the chairman.

Fourth: Salaries

The principle of sufficiency is approved with the following details:

A- Bachelors: Authorize for them a basic monthly salary of 1,000 Rupees.

B- Married individuals:

1- Authorize for them a basic monthly salary of 6,500 Rupees.

2- The sum of 300 Rupees is added per child.

3- Add the sum of 700 Rupees per wife in case of multi-wives.

4- Approve a 10% annual increment of the basic salary for cost of living increase.

5- Specialized technical personnel (members or contractors): The origin is to deal with them on the basis of sufficiency according to the regulations in the above two paragraphs. If this is undoable, then approve their salaries as per the individual agreement with each one of them on the condition it is approved by the Emir or his deputy.

Fifth: The Financial Aspects in contracting with the (movement) Members:

1- Salaries

The contract should include the member's rights as per his condition and within the regulations of the previous paragraph.

2- Tickets

A- The married man whose family is in his own country will be treated like a bachelor in respect to salary but will be given an air ticket home annually.

B- The bachelor will be giving an air ticket after 1 ½ years.

C- The married man accompanied by his family, will be given air tickets for him, wife and children every two years.

D- Those entitled for tickets can use them to travel, or to bring their relatives, or transfer them to tickets to perform hajj or mini hajj (Omrah); conditional that their value does not exceed that of the original tickets.

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E- The brother cannot cash the value of the ticket in case travel is not possible, or transfer it as in previous paragraph.

F- The Emir and or his deputy have the right to postpone issuing the tickets for a common interest they realize.

G- Tickets are issued by the accounting section, from a special budget item for it.

3- Medical Benefits

A- All (Al-Qa'eda) members can visit the medical staff and obtain medicine free of charge.

B- In the event the treatment is unfeasible and medicine is unavailable in Al-Qa'eda warehouse, the member will be paid the costs if more than (100) Rupees, conditional the treatment takes place in Peshawar.

C- In the event Al-Qa'eda designated doctor recommends treatment outside Peshawar, then the cost of treatment and medicine will be covered. This has to be approved by the administrative committee, or executive committee chairman, or deputy Emir or the Emir himself (by this position sequential order).

4- Loans

When needed, the administration can grant the following loans:

A- Rental Loan: The security deposit and the advanced rental payment not exceeding 10,000 Pakistani Rupee. The security deposit is collected over one year, and a one month rent is deducted annually.

B- General Loans: The administration grants a general loan for urgent need not to exceed (10,000) Rupees. The loan is deducted from salary over one year period.

C- The previously mentioned loans are handed by the administrative committee chairman after the written approval of the immediate supervisor.

5- Cost of Furniture: The approved married member is guaranteed 20,000 Rupees to purchase furniture, on the condition that he submits a list of the purchased furniture attached with a receipt. The furniture will remain in his care as long as he is a member of the organization, and the furniture will be returned as is, in the eventuality he is for any reason transferred. This amount is paid the same way as other loans are.

6- Hardships: The administration helps the brother members in their hardships after confirming it, according to the officials' authority within the organizational structure. Anything exceeds this authority, it should be referred to the deputy Emir, if not, then to the Emir him personally.

7- The Disabled:

The administration strives to help those who were disabled during work or on the frontline either by rehabilitating them to be skillful at some type of work necessary for the administration plan and employ them in it; or if that is not possible, they are paid a one time compensation sufficient to enable him to perform some type of job. Afterwards, he and his family are sent back home.

8- Vacations:

A- For those who work in Peshawar, they are entitled for Fridays, the two holy feasts (TC: Al-Adha [during the pilgrimage month] & Al-Fatr [following the end of the month of Ramadan]), and a one month annual leave to be enjoyed at the end of the eleventh month of work, as well sick leave not to exceed 15 days annually.

B- Those working in camps and in the frontlines:

Married: Enjoys a 7 day monthly vacation.

Single: Enjoys a 5 day monthly vacation. This in addition to the annual and sick leaves mentioned in the above paragraph.

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C- If the vacation exceeds what is allowed, then, the relative salary will be withheld (prorated) except if those in responsible positions (in order of hierarchy) approve a holiday extension.

9- Dismissal

If the administration dismissed any person, at least a one-month notice should be given to the dismissed party. If the person is to be dismissed soonest possible, then he will be paid a one month additional compensation.

10- Payroll Hierarchy

A- Official payroll

1- Cook: 1,500 Rupee, Assistant cook: 1,300 Rupee

2- Driver: 1,400 Rupee

3- Houseboy: 1,300 Rupee

4- Clerk (with high school): 1,800 to 2,000 Rupee

B- For the above, an annual pay increase of 10% of the original salary is to take place.

C- In line with their authority, the responsible people within the different departments are authorized to pay a bonus or a payment in the form of help to their workers.

D- The above mentioned terms of dismissal are applicable to the workers.

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The Military Committee

Definition

An apparatus responsible for readying the Jihad youth, training them, prepare them for combat, and organize their Jihad participation in the battle fields. It is also responsible for developing the fighting capabilities and military technologies, as well as establishing the military programs and curriculums that are guided by Islamic laws and other aspects of preparation and combat.

The Objectives:

General goals

- 1- Prepare, train and qualify the youth to be ready for Jihad and combat.
- 2- Organize and supervise for combat participation on the battlefields.
- 3- Prepare the military programs and curriculum.
- 4- Provide what is needed of military technologies for combat.

Special goals

- 1- Recruit personnel to join Al-Qa'eda organization
- 2- Promote the level of Al-Qa'eda personnel fighting capabilities.
- 3- Develop Al-Qa'eda to become a production facility for training and fighting experiences; In other words, providing training and fighting personnel for the Islamic world.

The General Policy for the Committee (Guidelines):

The Organizational Structure of the Military Committee:

- The Committee Chairman

- General Staff
- The Preparatory & Training Branch
- The Technical Branch
- The Combat Branch
- The Laboratory
- The Maintenance & Repair
- The Electronics
- The Branch manager
- The Shura (Consultative) Council
- The Military Council
- Camps (Personnel Services, Curriculum, Medical Services)
- Frontlines (Personnel Services, Curriculum, Medical Services)

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The Military Committee Chairman

Definition & Characteristics:

- 1- Must have sufficient religious-law knowledge.
- 2- Must be a member for at least three years and gained during it sufficient practical military experience at the frontlines and camps that qualifies him to hold this position.
- 3- Must be in fit physically and mentally to a level that qualifies him to fully undertake this responsibility.
- 4- Must be at least 30 years old.
- 5- Must be a university graduate, preferably from a military academy.
- 6- It is preferred that he has ample military knowledge.
- 7- He must be wise, well balanced and disciplined.

Authorities & Duties:

- 1- Appoint and dismiss his deputy from the General Staff members.
- 2- Keep in contact with other committee chairmen to coordinate operations.
- 3- Follow up branch supervisors in executing the orders, and evaluate their work performance.
- 4- Attend the periodical and emergency sessions of the military committee and executive council.
- 5- Appoint and dismiss the branch supervisors.
- 6- Submit a monthly report about the committee activities to the executive council.
- 7- Submit the detailed transitional annual plans that are prepared in consultation with the general staff to the executive council.
- 8- Review the periodic reports submitted by the branch supervisors.
- 9- Submit the military committee annual plan that is prepared in consultation with the general staff to the executive council.
- 10- Prepare the military committee policy in consultation with the general staff, and submit it to the executive council.

The General Staff

Definition:

It is a council chaired by the head of the military committee and is comprised of him and the branch supervisors and others from the committee members the chairman finds suitable for this purpose. The minimum number of members for this body is (4) and the maximum is (6); and should convene monthly.

Characteristics of the General Staff Member:

- 1- Must have spent at least two years in Jihad activities.
- 2- Must have sufficient religious-law knowledge that qualifies him to hold this position.
- 3- Must be at least 30 years old.
- 4- Must be a university graduate.
- 5- It is preferred that he has ample military knowledge.
- 6- He must be wise, well balanced and disciplined.

Duties of the General Staff

- 1- Establish the general policy of the military committee
- 2- Plan for the execution of the approved military policy.
- 3- Follow up policy execution at all branches.
- 4- Discuss all reports submitted to him and look into the various problems and seek solutions for them.
- 5- Appoint the camp leaders and battalion commanders.
- 6- Prepare the annual plan and the required budget.
- 7- Prepare and incorporate the detailed transitional military plans within the general plan.

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Training Branch Supervisor:

Definition

An official appointed by the military committee chairman to prepare and supervises the execution of the training programs, and also to supervise the branch activities. He is a member in the general staff

Characteristics of the Training Branch supervisor:

Same as that required for the 'General Staff Member'. In addition, he should have spent a suitable period of time in training camps and gained sufficient experience that qualifies him to hold this position.

Duties:

- 1- Execute the military committee policy concerning training as decided in the general staff meeting, and as per the orders of the military committee chairman.
- 2- Follow up on training activities in the camps; reward and punish those responsible.
- 3- Propose the military training programs and curriculum, and submit it to the general staff for approval.
- 4- Coordinate the activities of his branch with the combat branch in preparing the number and quality of Mujahideen as decided by the general staff.

Combat Branch Supervisor:

Definition:

An official appointed by the military committee chairman to prepare the military plans and submit it to the general staff, and supervises its execution after approval; he also supervises the various branch activities. He is a member of the General Staff.

Characteristics of the Combat Branch Supervisor:

The same as that of the general staff member; in addition, he should have spent suitable time in the battlefield and gained sufficient combat experience that qualifies him to hold this position.

- 1- Must have spent at least two years in Jihad operations.
- 2- Must have sufficient religious-law knowledge.
- 3- Must be at least 25 years old.
- 4- Must be a high school graduate.
- 5- Must have adequate military science knowledge.
- 6- He must be wise, well balanced and disciplined.

Duties:

- 1- Propose military plans for battle fronts and submit them to the general staff, and supervise its execution after approval.
- 2- Command the battle fronts and coordinate between the military battalions during battle.
- 3- Coordinate the combat branch activities with the training branch in all fields.
- 4- Monitor the Jihad hot spots and submit a feasibility study about them to the general staff.

In the name of Allah the merciful the compassionate

The Security Committee: Comprises of

The Committee Chairman

The Shura (Consultative) Council

Central Division:

- Information - Execution
- Suspected Individuals – Associations and Relationships

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- Computer -Camouflage
- Espionage & Infiltration
- Organizational activity security section – Country of Residence section and passports
- Documents
- Installations

In the name of Allah the merciful the compassionate

Definition:

It is the Committee responsible for providing the necessary security for the operations, the leadership, installations and personnel; and collecting data required for the security operation, promoting the personnel feeling of security, and facilitating the administrative

security procedures related to the host country in accordance with the legal laws and regulations.

The Committee Objectives:

- 1- Provide the required for the operation, the leadership, personnel and installations.
- 2- Promote the feeling of security within Al-Qa'eda personnel.
- 3- Facilitate the administrative security procedures related to the host country.
- 4- Collect the required information relating to the security operation.

The Operational Policy (guidelines):

First: All committee activities must be subjected to the legal guidelines. This is achieved by coordinating with the legal committee through both committee chairmen.

Second: Adhere to the most thorough background check on those working for the committee, with the emphasis on their ideological and religious background.

Third: In dangerous matters where interests and corruptions are intermingled, the committee is relieved of its responsibility by turning it over to the general command to reach the proper decision concerning it.

Fourth: In order to maintain a smooth operation and to avoid any confrontation with the security regulations of the host country; do not violate any of these regulations that might lead to detention and its consequences.

Detailed Description of the Structure:

The Committee Chairman:

Conditions and Characteristics:

- 1- Must have sufficient religious legal knowledge to enable him carry out his duties.
- 2- Must be a member in the organization for at least two years, during which he gained sufficient experience to enable him carryout his duties.
- 3- Must be mentally and physically fit at a level that enables him to fully carry out his responsibilities.
- 4- Must be at least 25 old.
- 5- Must have an acute sense for "security", smart, well balanced and spontaneous.
- 6- Must be a high school graduate, college graduate is preferred.
- 7- It is preferred if he is fluent in English.
- 8- Must be knowledgeable in his field of work.
- 9- Must have adequate general military knowledge.
- 10- Must be known as trust worthy and can keep secrets.

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Chairman Authorities and Duties:

- 1- Appoint and dismiss his deputy from the Shura (Consultative) council members and section heads.
- 2- Contact other committee chairmen to coordinate operations.
- 3- Review the periodic reports submitted to him and discuss them with the Shura (Consultative) Council.

- 4- Supervise the section heads work in executing decisions, and evaluate their performance.
- 5- Attend the periodical and emergency meetings.
- 6- Appoint and dismiss the committee sections heads.
- 7- Submit a weekly report containing his committee activities to the executive council chairman.
- 8- Review and be reassured about the progress of the committee activities according to the approved plan.
- 9- Prepare a comprehensive plan to evacuate any of the leadership personnel safely in emergency situations.

Bylaws

First: The Shura (Consultative) Council

- 1: The characteristics of the council member
 - A- Must be known as trustworthy and can keep secrets.
 - B- Must be a member in the organization for at least one year and a half, during which he gained practical experience to enable him carryout his duties.
 - C- Must have an acute sense for “security”, smart, spontaneous and well balanced.
 - D- Must be skilled in firing light arms and have knowledge in using explosives.
 - E- Must have sufficient religious knowledge to enable him carry-out his duties.
 - F- Must be mentally and physically fit to be able to carry out his duties.
 - G- Must be at least 25 old.
 - H- Must be at least a high school graduate.
 - I- Must be knowledgeable in the security information concerning his work.
 - J- It is preference that he is fluent in English.
 - K- The top officer has the right to review and be reassured on all activities of subordinates under his responsibility.
 - L- The basis of our work is Jihad; we must maintain the Jihad spirit within all of those working with us, especially those away from military activities by linking them to the preparation and combat fields.
- 2- The Council’s Bylaws:
 - A- The council is composed of four members: The chairman, and the heads of the three sections.
 - B- The council meets weekly under normal conditions, or at the request of the committee chairman or the majority of the members in emergencies.
 - C- The council convenes legally in the presence of the majority of the members conditional that the chairman or his deputy is present.
 - D- The council sessions are convened in one of the committee’s offices or in one of the member’s homes.
 - E- Secret balloting is adopted in evaluating personnel.
 - F- Only matters within the council’s authority are discussed during its meetings.
 - G- Each member is issued a licensed hand gun to be carried only under work conditions.
 - H- A pledge is taken from each member not to reveal any secrets even after they sever their relations with the organization.

I- Requests and complaints are to follow the ranking sequence outlined in the organizational structure.

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J- If the grievance was against the immediate supervisor and the complaint failed to reach the official next in rank; then the complainant is permitted to bypass his supervisor and go directly to the official above him.

3- The Councils' Authorities and Duties:

1- Discuss the sections weekly reports.

2- Review and discuss the problems occurring in the sections, find solutions and take the necessary decisions regarding it.

3- Review and discuss the private and serious problems that have direct affect on the operation, and submit practical recommendations regarding it.

4- Punish, reward and bring to account those working for the committee.

5- Appoint and dismiss those working for the committee and transfer them into another location after consulting with the people in charge there.

6- Discuss and approve the committee's proposed annual plan and budget.

The Central Section:

This is the largest sections of the committee; and it is subdivided into four parts:

1- Espionage and defensive penetration:

This includes uncovering the espionage and penetration operations by the enemy inside the organization, and also uncovering the apparatus used by the enemy's agents, etc.

2- Spying, penetrating enemy defenses, agent recruitment and using available technologies in order to obtain as much as possible data about the enemy plans.

3- Monitor and follow up everything published in the media related to our work.

4- Archives: File all gathered data either on paper or computer.

Second: Decision Execution Branch (issued from the Security Committee):

This branch is divided into the following sections:

A- Investigations

B- Imprisonment & torture

C- Coordination & relations: This section is responsible for coordination with security entities outside the organization after approval from the leadership (Emirate).

D- Documents.

The Organizational Work Security Section: Divided into two branches:

First: Branch to provide guard detail for the organization leadership.

Second: Branch to provide guard detail for the organization documents and installations:

This branch arranges all necessary security measures to protect the documents from theft, destruction or leakage by conducting thorough background checks on personnel handling these documents, or using the technologies and proper administrative methods in this field, and issues the necessary instructions to the concerned parties and follow up on its execution. This branch is also responsible for securing the work facilities and selecting the suitable locations from the security point of view, and so on.

General Regulations:

First: Characteristics and conditions of the Guards:

The guard detail chief and his team must possess the following characteristics that qualify them for this position:

1- Must be known for his honesty and secrecy.

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2- Must be a member in the organization for at least one year and a half, during which he gained the trust of his colleagues.

3- Must be aware of the importance of the Emirate and its legal rights.

4- Must have an acute sense for “security”.

5- Must have high moral standards, well balanced, patient, not greedy and daring in the battle field

6- Must be skilled in the use of necessary weapons for protection.

7- Must be mentally and physically fit, and athletic to bear the full burdens of guard duties.

8- Must be at least 25 old.

9- Must have successfully passed the security training course.

10- In addition to the above, the guard detail chief should also have good administrative skills, intuitive, takes decisions in accordance with the religious laws, be a high school graduate, at least 25 years of age and have good knowledge of his field of operation.

11- The guard detail chief and his team must not be from one of the Gulf countries or from Yemen.

Second: General Policy for Guard Detail:

1- It is preferred to have two guard teams to alternate in their duties.

2- The guards’ chief should take necessary measures to keep his teams physically fit and militarily ready.

3- The guards’ chief and drivers are issued hand guns while the guards are issued hand guns or rifles as available.

4- The guards’ chief should himself verify the documentations of his non Arab staff guarding the Emir’s home, and should personally check on them at their posts.

5- The guards’ chief schedules his staff monthly and annual vacations according to work requirements.

6- The vehicles accompany the Emir (motorcade) should be similar to the Emir’s vehicle.

Third: The Security Education Section:

The duty of this division is to promote the feeling of security within the organization personnel and prepare them to face the difficulties that may encounter the operation at any time by:

A- Organize mini training courses that can part of military courses or separate.

B- Print some small booklets and circulars in this concern.

C- Hold general security lectures in the camps and guest houses when necessary.

Fourth: The Host Country and Passports Section:

This section collects all needed information related to the host country needed for operation requirements such as the laws, regulations, the addresses of government offices, addresses and telephone numbers of hotels, getting acquainted with the officials and establish relations with them; the person selected for this task should be fluent in English and capable of socializing with people and develop relations with them.

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The Political Committee

Responsible for spread political awareness among the organization personnel and throughout the Muslim populace; prepare political reports and the required studies for operation; interact with the Jihad movements around the world; and prepare the qualified political personnel in accordance with the general operational policy.

General Objectives:

- 1- Spread political awareness among personnel by preparing a specific plan to include all personnel according to their operational levels in the organization.
- 2- Spread political awareness among the Muslim populace.
- 3- Prepare the political studies and reports required for the operation.
- 4- Interact with the Jihad movements around the world by introducing them and publicize their news, etc.
- 5- Prepare the political personnel required for the operation.

The Political Committee Organizational Structure:

- The Committee Chairman
- The Deputy
- The Shura (Consultative) Council
- The Political Studies Section (political research)
- The External Relations Section (coordination with the foreign media)

Operational Policy (Regulations)

- 1- Fully abide by the religious laws and regulations in all committee's work.
- 2- Manifest the inevitability of Jihad solution as the method for change.
- 3- Unveil and exposing the idols of the world, the nationalistic and secular parties and other enemies of Islam.
- 4- Our relations with the Islamic movements are based on support, advice and approve of what they do of good, and point out their mistakes if required.
- 5- It is prohibited to criticize Islamic movements and scholars except through the religious committee.
- 6- Endeavor to achieve unity between the Islamic Jihad movements.
- 7- Refer to the leadership before taking any decision concerning new developments in order to adopt the proper policy to deal with it.

Characteristics and Conditions of the Committee chairman

- 1- Must be a member in the organization for at least three years, and to be totally devoted to his work.
- 2- Must be at least 25 old.

3- Must have general religious knowledge, and specialized in Islamic jurisprudence politics and Islamic laws.

4- Must be truthful, understanding, fair, farsighted and intelligent.

5- Must be vigilant, specialized and experienced in this kind of work.

6- Must be trustful and known to keep secrets.

7- Must have experienced a Jihad military operation.

8- Must be well versed in the English language and a university graduate.

9- Must have enough good senses to carry out his duties.

The Authorities and Duties of the Committee Chairman

1- Appoint and dismiss his deputy; a member of the Shura (consultative) council.

2- Appoint and dismiss other committee heads.

3- Submit a monthly report to the executive council chairman.

4- Supervise, reward and punish those working for the committee.

5- Prepare the annual operational plan and budget; discuss it with the consultative council, and submit to the executive council chairman.

6- Conduct Foreign consultation for whomever he sees deserving.

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The Deputy

Have the same characteristics as the chairman or close to it.

Authorities and Duties:

Assist during the chairman during his presence, and to act on his behalf during his absence.

The Consultative Council:

The Characteristics of the Consultative Council Member:

1- Must be a member in the organization for at least two years.

2- Must be at least 20 years old.

3- Must have general religious knowledge, and specialized in Islamic jurisprudence politics and Islamic laws.

4- Must be truthful, understanding, fair, farsighted and intelligent.

5- To be able to argue and debate.

6- Must be trustful and known to keep secrets.

7- Must have political inclinations.

8- Must be at least a high school graduate.

The Committee Bylaws:

1- The council is composed of five members: The chairman, his deputy and the three section heads. The Chairman has the right to increase membership to seven.

2- The principle of Shura (consultation) must be adopted but not mandatory.

3- The council meets on a biweekly basis, and the meeting is considered legal if the majority of members are present.

4- In case of emergency, the chairman or the majority of members can convene a meeting.

5- In case the member cannot attend, the secretary should be informed a day or two ahead of time.

The Council Authorities:

- 1- Discuss the semi-monthly reports submitted by division heads.
- 2- Discuss the work problems and find solutions for them.
- 3- Discuss the appointments and dismissals of sections members, and their transfer somewhere else.
- 4- Discuss the committee's annual plan and budget.

In the name of Allah the merciful the compassionate

- 1- In respect to scholars and leaders of Islamic movements, it is prohibited to publish any story, report or declaration that slanders or defames them before the item is verified and approved by the committee chairman.
- 2- Be truthful in transmitting the story text wise, date and source.
- 3- The story title does not contradict the Islamic morals and ethics.
- 4- It is prohibited to broadcast any advertisement in the publication.
- 5- The source is responsible for the truthfulness of the news.
- 6- The religious articles are chosen by the (religion) legal committee.
- 7- The published political articles should be in accordance with the general operational policy and the leadership directives.
- 8- It is prohibited to print anything except the daily and weekly publication, and the weekly political reports without permission from the leadership.

The End of Document / Translation

APPENDIX D
U.S. MILITARY ACADEMY COMBATING TERRORISM CENTER
TRANSLATION OF AL QAEDA CAPTURED GOALS AND STRUCTURE
DOCUMENTS TRANSLATION FROM ORIGINAL TEXT³⁰

AFGP-2002-000078, Continuation of AFGP-2002-000080 ARABIC

In the Name of God the Merciful

The Military Committee:

Announcement: This is the organization entrusted with the responsibility for the preparation of the freedom fighting young men, their training, organizing them for combat, organizing their Jihad participation on the battlefield and its likewise responsible for developing combat skills, military technical skills and composing programs and procedures for a disciplined military in quranic law of Islam and other matters of preparation.

***Goals**

-General Goals

1. Preparation of freedom fighting young men, their training, and organizing them for combat.
2. Organization and supervision for combat participation on the battlefield.
3. Preparation of programs and military procedures.
4. Offering what is needed of military mechanics for combat.

-Special Goals

1. Recruitment of individuals for enlistment in Al Qaida.
2. Upward development in the level of fighting Al Qaida members.
3. Making Al Qaida an establishment for combat and training expertise.

***The Organizational Structure for the Military Committee.**

-President of the committee

-General Section: training-combat

-Special Section: training-operations

-Nuclear Weapons Section

³⁰ Received permission to reproduce translation of the Al Qaeda Goals and Structure from the U.S. Military Academy Combating Terrorism Center.

-Library and Research Section

President of the military committee

Provisions and Specifications:

1. To possess a suitable proportion of Islamic Law.
2. He must have work experience of no less than 5 years and have complete military operational experience in the battlefield and bases in order to be qualified for this job.
3. To be unimpaired in his members and senses on the level that qualify him for performing the burdens of full responsibility.
4. He must not be less than 30 years of age.
5. His scientific knowledge must not be less than university graduate and its preferred that he be a military academy graduate.
6. That his studies of military science be expansive.
7. That he be wise, sober-minded and disciplined.

Competent Authorities and Duties of the Committee President

1. Appointing the relieving of a representative for him out of the leaders of the committee sections.
2. Contacting the presidents of the other committees for drawing up the operation.
3. Looking over the work of the section leaders in the implementation of decisions and establishing the adequacy of their performance.
4. Attendance of periodic and emergency meetings in the military committee.
5. Appointing and releasing section leaders.
6. To post a periodic report of the committee operations to the leadership council.
7. Posting the detailed stage plan to the leadership council, which sets up joint consultation with the section leaders.
8. Examination of the respective periodic reports of the sections leaders.
9. Posting the special yearly plan to the leadership council on the military committee and which sets up in joint consultation with the section leaders.
10. Setting up the politics of the military committee in joint consultation with the section leaders and posting it to the leadership council.

Supervision of the General Training Section

Announcement: He is responsible for completing his assignment from the military committee president and to be in charge of setting up the training programs. Likewise he must oversee the implementation of all of his section's operations.

Specifications of the Training Section Supervisor

1. To have completed at least two years of service in the Jihad.
2. To have possession of the appropriate amount of scientific knowledge, which qualifies him for doing his job.
3. His age must not be less than 25 years.
4. He must not have accomplished less than general high school studies.
5. To have the appropriate knowledge of military sciences.
6. To be distinguished by wisdom, sobriety and military discipline.

Importance of the training section supervisor

1. Political implementation of the military committee in the training field, and taking into account the orders of the military committee supervisor.
2. Following up on the training matters in the bases and rewards and punishment of those in leadership positions within it.
3. Suggestions for the training plan and the military instructional curriculum and proposing it to the committee president for a decision on it.
4. Setting up section work with the combat section in preparation of the Mujahadeen in quantity and suitable conditions.

Supervisor of the general combat section

Announcement: He is a supervisor appointed by the military committee president and he supports the drawing up of the military planning and posting it to the president of the committee. Then he oversees its implementation after its decided on with the following of all of the other section operations.

Specifications for the Supervisor of the combat section

The same specifications for the training supervisor in addition he must have completed a suitable period on the front line of combat and attaining during it enough combat experience to be qualified for undertaking the burdens of his position.

Importance of the combat section supervisor

1. Proposals of military plans for the battlefield front lines and posting it to the president of the committee then following up on its implementation on the front lines after it is decided on.
2. Leadership of the battlefield front lines and disbursement of military regiments for the combat section with the training section in all of the fields.
3. Disbursement of work for the combat section with the training section in all of the fields.

Special Operations Section

Announcement: It is an outfit charged with the responsibility of training, equipment, development of special combat skills in foreign operations and likewise the supervision of special operations implementation and facilitation of all its requirements.

Goals of the Section

1. Preparation of cadre from the mujahadeen young men and their organization for the special operation.
2. Supervision over the implementation of foreign operations.
3. Offer what is needed of the operations from equipment, programs, and training.
4. Choosing the suitable elements for the foreign operation.

Supervisor of the special operation section

Clauses and Specifications

1. He must not have work experience of less than 5 years and to have attained during this time work experience to qualify him for the performance of his job.
2. To be unimpaired in his members and senses on the level, which qualifies him for undertaking the burdens of the responsibility.
3. He must not be less than 30 years old.
4. His scientific knowledge must not be less than university graduate and its preferred that he be a military academy graduate.
5. That his studies of military science be expansive.
6. That he be wise, sober-minded and disciplined.
7. He possesses the appropriate amount of scientific knowledge, which qualifies him for performing his job.
8. To be in possession of praiseworthy strength and character.

Authorities and duties of the section supervisor

1. Supervision of the needed cadre preparation for the job.
2. Following up on the implementation of the special operations.
3. Posting a periodic report every 3 months on the sections work.
4. Posting of the detailed stage plans for the sections work.
5. Set up the politics of the section and post it for the military committee president.
6. Work communications for the cadre from outside of the organization and the utilization of their scientific operation capabilities.

* Representative of the special operations president.

Specifications of the representative for the special operations president

Same specifications at the committee president or close to it

In the Name of God the Merciful

The Political Committee:

Announcement: This committee undertakes in spreading political awareness between working individuals and Islamic republics, preparing political reports and the needed studies for work, interaction with Jihad movements in general, preparation of qualified political cadre and likewise crediting the general politics for the operation in the field of legitimate officers.

*The General Goals

1. Spreading the political awareness between the individuals of the operation in preparation of a fixed plan comprised of the members taking into account their level of organizational work.
2. To spread political awareness between the Islamic republics.
3. Preparation of studies and needed political reports for the operation.
4. Interaction with Jihad movements in the world by communication with them and to spread their news... etc.
5. Preparation of the needed political cadre for the job.

6. Work on good relations with the government of the resident country.

* Organizational structure for the political committee

-The political committee

-President of the committee

-Representative of the president

-The political section

-The operational politics (officers)

1. Complete commitment in judgment of Islamic law and its officers in all work matters of the committee.

2. Demonstrating the importance of the reinforced Jihad solution in god's path like that of a road to change with a lack of negligence of other constituents.

3. Uncovering and revealing the terrain of the land, secular and nationalist parties, and recruits from the enemies of Islam.

4. Our relation with Islamic groups in sustenance and cooperation and which they have from the truth and giving sincere advice in what he saw they have of wrongs.

5. Forbid the exposing of criticism of the Islamic movements and of the erudite if it is not during the Islamic law committee.

6. The endeavor around realization of a union between the Jihad Islamic groups.

7. To return to Al Qaida before taking any decision of establishing a new stance which appears on the surface to take a suitable policy of dealings in its establishment.

Provisions and Specifications for the president of the committee:

1. That his work experience not be less than 5 years and to have full commitment to the job.

2. That his age not be less than 30 years.

3. That he possess general Islamic law knowledge and specialize in matters of Islamic law policy and Islamic systems.

4. That he be in line in sincerity of his manner of speaking, large hearted, mild tempered, to plan ahead, correct in opinion, smart and clever.

5. That he be a master of a specialization in that field and have experience.

6. To be in line with concealment of a secret and keeping security.

7. To have undergone Jihad combat experience.

8. It is preferred that he be proficient in the English language at least and that he has an education level of no less than university level.

9. Unimpaired in his senses enough in order to function in his job.

Competent authorities and duties of the committee president

1. Appointment and release of a representative for him

2. Appointment and release of leaders for the sections under him.

3. Posting a periodic report for the president of the leadership council.

4. Following up on, rewarding and punishment of the workers in the committee.

5. Setting up a yearly work plan, its budget and its discussions with the leaders of the sections and posting it to the president of the leadership council.

6. Foreign consultation for those he sees that are welcome for that.

Representative of the committee president

Same specification of the committee president or close to it

Authorities and Duties: Aid in the time that the president is present and representation of him in case of his absence.

Informational Committee:

Announcement: This is the committee concerned with the everything, means of communications setup in all categories of Islamic people, taking great pains in making it aware of its enemies' plans, aspiring to concentrate all of the scientific, legal, and Jihad capabilities in the first level in order to obstruct one line in front of the alliance of the infidel and the ugly ones.

General Goals:

1. Calling and instigation of Muslims to the Jihad in the word of god for the word of god is the highest.
2. Spreading and embracing concepts and general rules of the Sunnites and the community in all legal affairs of the Jihad.
3. Intellectual and informational prudence with the Islamic Republics.
4. Cooperation with the scientific, legal and Jihad groups – discipline in the manner of the forefathers – Informational.
5. Informational continuance with the government of the resident country.

* Administrative structure for the Information section

- President of the informational committee
- Representative of the committee president
- Computer branch
 1. The layout
 2. The secretariat and the printing press
- Foreign relations branch
- The photography branch
- The phonetics branch
- The translation branch
- The microfiche branch

The General Rules

1. Full commitment to the jurisdiction of Islamic law and its general rules in all work of the committee.
2. Exhibiting the importance of the Islamic Jihad solution in the word of god like a method for change with a lack of negligence of other factors.
3. Uncovering and revealing the terrain of the land, secular and nationalist parties, and recruits from the enemies of Islam.
4. Our relation with Islamic groups in sustenance and cooperation and which they have from the truth and giving sincere advice in what he saw they have of wrongs.

5. Forbid the exposing of criticism of the Islamic movements and of the erudite if it is not during the Islamic law committee.
6. The endeavor around realization of a union between the Jihad Islamic groups.
7. To return to Al Qaida before taking any decision of establishing a new stance which appears on the surface to take a suitable policy of dealings in its establishment.

Provisions and Specifications for the president of the committee:

1. That his work experience not be less than 5 years and to have full commitment to the job.
2. That his age not be less than 30 years.
3. That he posses general Islamic law knowledge and specialize in matters of Islamic law policy and Islamic systems.
4. That he be in line in sincerity of his manner of speaking, large hearted, mild tempered, to plan ahead, correct in opinion, smart and clever.
5. To be in line with concealment of a secret and keeping security.
6. To have undergone Jihad combat experience.
7. Unimpaired in his senses enough in order to function in his job.

Competent authorities and duties of the committee president

1. Appointment and release of a representative for him
2. Appointment and release of leaders for the sections under him.
3. Posting a periodic report for the president of the leadership council.
4. Following up on, rewarding and punishment of the workers in the committee.
5. Setting up a yearly work plan, its budget and its discussions with the leaders of the sections and posting it to the president of the leadership council.

Representative of the committee president

Same specification of the committee president or close to it

Authorities and Duties:

Aid in the time that the president is present and representation of him in case of his absence.

The Administrative and Financial Committee:

Announcement: This is the committee, which undertakes different administrative services for all of the members of the group and their families, undertakes in the work of accommodation, supervision, and implementation and undertaking in the work of accounting, keeping the books, and the finances of the group.

* Goals of the Committee

1. Offering the best of administrative services for all the group members and their families.
2. Undertake the work of hospitality for the guests of different kinds in the most generous possible manner of hospitality.

3. Undertaking the work of accounting, keeping the books on the front, which safeguards the group's general funds.
4. Undertaking in the financial work for the group in which performs in the needs of the group. (Side note written in red ink -- committee performing finance is subdivided in this committee.)

* Financial Policy

First of all: General financial rules:

1. General money is a big trust and responsibility before god the powerful and great so the entire reserve and attention should be in a lack of

APPENDIX E
U.S. MILITARY ACADEMY COMBATING TERRORISM CENTER
TRANSLATION OF CAPTURED AL QAEDA EMPLOYMENT CONTRACT
DOCUMENTS³¹

Document# AFGP-2002-600045, TRANSLATION: Full, DATE: 3/20/2002

This is an employment contract between AL QAEDA and a potential recruit. It contains a definition of AL QAEDA organization, and six main points:

- 1-Duties.
- 2-Holidays.
- 3-Salaries and Travel tickets.
- 4-Advice.
- 5-Reward and Punishment.
- 6-Pledge.

In the name of Allah, Most Gracious, Most Merciful. (T.C: verse from the Koran)
AL QAEDA: An Islamic group with an aim of Jihad. Carrying out Jihad is the main reason the members of AL-QAEDA have gathered , together with performing the different duties of Islam as much as possible, shouldering together the duty of Jihad and preparing the efficient duties during conflicts.

Its belief: The faith of Sunna and Jama'a (group) in general, and in detail following the example of the worthy ancestors.

PAGE 1 of 5

Objectives of AL QAEDA:
Support God's religion, establishment of Islamic rule, and restoration of the Islamic Caliphate, God willing.

AL QAEDA's sphere of activity: International and transitional according to AL QAEDA's policy.

³¹ Received permission to reproduce translation of the Captured Al Qaeda Employment Contract Documents from the U.S. Military Academy Combating Terrorism Center.

Requirements of joining AL QAEDA:

- 1 -Abiding by AL QAEDA rules, its beliefs and objectives as previously mentioned.
- 2 -Obedience to the leaders in charge as much as possible, without disobeying Islamic rules.
- 3 -No connection between AL QAEDA membership and any other Islamic group.
- 4 -Maintain secrecy in work-related issues.
- 5- Physically healthy (except in administrative work).
- 6-The candidate should not be in question when it comes to religion, integrity or his morality.
- 7-Reciting the pledge of AL-QAEDA.

AL-QAEDA's Regulations and Instructions:

First: Duties

- 1- Preserving the unity of AL QAEDA is an important and legitimate goal, which occurs by fearing God in private as well as in public. (Surat 65, 5). This is fulfilled through humbleness and flexibility towards the brothers and the rest of the Muslims, good manners, rejection of disputes, and mutual agreement and settlement of differences. (TC: Koranic verse).
- 2- Preserving Islamic morals and avoiding means of corruption and bad companions, through verification and confirmation of news. (T.C: Koranic verse) To observe good conduct and filial piety even if they were infidels.
- 3- Adherence to eating Islamic Halal food (T.C: Koranic verse).
- 4- Maintaining physical fitness and military exercises as much as possible.
- 5-Do not talk about work assigned by AL-QAEDA with others, even if they are AL-QAEDA members. The only person you can discuss work with is your direct commander (Amir), unless you are asked to do otherwise or if your work demands participation of others, and then through guidance of the leadership.
- 6-The call to adhere to Islam in general, and spreading the concept of Jihad specifically, starts with relatives and friends. (T.C: Koranic verse) You may not be able to do this, if your work demands extreme secrecy, like Naeem IBn Mas'uud (May God bless him).
- 7-Safeguard AL-QAEDA's general funds and do not mishandle these funds. (Albukhairi)
- 8-Sincerity in providing advice to commanders and to your brethren in AL-QAEDA, without harboring deception.

Second: Vacations (T.C: Koranic verse)

PAGE 2 of 5

1-The married have a vacation by rotation for a week every three weeks, and in certain cases AL-QAEDA may deny this vacation for four months.

2-A bachelor can have a vacation by rotation for five days every month. ALQAEDA may deny his request for vacation in certain cases.

3-Request for vacation travel should be submitted two and a half months before the travel date. The request would only be considered if it had been submitted in a timely manner as indicated, except in special cases.

Third: Salaries and tickets (T.C: Koranic verse)

1- The salary of a married Mujahed brother is 6500 Pakistani Rupee, and 500 Rupee for every newborn.

2 Salary of the bachelor Mujahed is 1000 Pakistani Rupee

3- The bachelor Mujahed qualifies for a round trip ticket to his country after one year from joining the organization. He can take a one month vacation. He doesn't get reimbursed if the ticket is not used, but he has the right to change it to a ticket to perform the pilgrimage. This period starts from the date of joining AL-QAEDA.

4-The married Mujahed and his family qualify for round trip tickets to their country of origin after two years, and one month vacation. Tickets can not be reimbursed if unused.

5-The brother who wants to leave AL-QAEDA without a legitimate excuse does not qualify for financial assistance or any of the previously mentioned privileges .

Fourth: Reward and Punishment (T.C: Koranic verse)

And accordingly:

1- AL-QAEDA missions and its different plans proceed according to Islamic law provision.

2- Disputes related to AL-QAEDA missions between member brethren should be judged by qualified personnel, which is carried out by the immediate commander (Amir) of the conflicting parties. He must inform the officials to settle the matter.

3- Personal disputes between member brethren could be judged by qualified members of ALQAEDA or outsiders. Corrupted courts should not judge the matter.

All members commanders as well as subordinates must obey these rules.

Fifth: Advice

A- Maintain provision of legitimate justice, and justice is the establishing the human's behavior in religion. Two points are considered:

1-Piety in religion: Perform religious duties according to certain supererogatory exercises of devotion. Avoid the forbidden, one should abstain from great or minor sins.

2-Practising chivalry: One should adopt whatever makes him look good and avoid what degrades him. (T.C: Koranic verse), (Abu Aldara').

PAGE 3 of 5

B- Exert your utmost and every conceivable effort for the sake of achieving the rightful objectives of ALQAEDA. (T.C: Koranic verse)

The sign of truth is:

1-Your effort in serving your religion is greater than the effort exerted in your worldly matters and your family. (T.C: Koranic verse), (Albukhari).

2-Your effort in serving your religion should be greater than the effort exerted by the infidels to support their lies .

C- Thorough study of legal curricula, and utilizing time in doing this, and thereby providing the Muslim brother with an Islamic vision for contemporary events. Knowledge without work is a burden on the person, and knowledge without work is useless.

D- If you are a specialist in any field, then you have to master your specialization. If you could serve the objectives of AL-QAEDA through your specialization, than inform your leadership of that.

E- The brethren are advised to avoid disagreement and argument in religion, discussing religion without proper knowledge is prohibited , and questions of differences are referred to powerful knowledgeable leaders. (Suraat Alnissa')

Six: The pledge

Its legitimacy and its purpose:

The legitimacy of the pledge: Pledges among Muslims concerning obedience and permissibility is legitimate and conceivable so that every party trusts the other. (Suraat Yuseef). So if a Muslim vows to do something, he must fulfill it. (Suraat Annahl)

The purpose of the pledge: Matters subject to pledge are either legitimate or permissible duties, legitimate duties like Jihad and obedience to leaders is first in importance. A

legitimate duty for a Muslim and a pledge conforms what is a duty by law, and it is a duty even if it is not subject to a pledge. According to what has been previously mentioned, than AL-QAEDA secures the pledge of its followers, which includes commitment to its policies and objectives preceded by the commander's (Amir) pledge.

PAGE 5 of 5

I pledge by God's creed to become a Muslim soldier to support God's religion, and may God 's word be the most supreme. I pledge to adhere to the holy book and Assuna and commit to the brothers committed with us in this mission, so God is my witness.

An oath from the Mujahed brother: In the name of Allah, Most Gracious, Most Merciful. I vow by God's creed to obey those responsible in this mission, in thick and thin, and thereupon may God 's word be most supreme. By supporting God's religion, I am a warrior in this mission regardless of my position, as long as the work is existing. I have to preserve the secrecy of work in AL-QAEDA , so God is my witness.

Seven: Breaking the pledge

The sin of the Breaker of the pledge (Suraat Alraa'd) (Albukhari) (Fath Albari 418/4)
Our last prayer is to thank God the creator of the universe.

Alias:----- Nationality:-----Date:-----
Marital status:----- Signature:-----

APPENDIX F

THE BUSINESS OF TERROR SURVEY

Questions 1 – 6 include administrative and contact information questions.

Questions 7-31 address Al Qaeda's business practices.

Please evaluate each statement and respond as appropriate to your knowledge, awareness or sources of information about al Qaeda's business and operational practices.

7

Leadership sees change imposed on the organization because of external conditions as an opportunity

Strongly Agree

Agree

Disagree

Strongly Disagree

Don't Know

1

2

3

4

5

8

Members view mission execution obstacles as opportunities

Strongly Agree

Agree

Disagree

Strongly Disagree

Don't Know

1

2

3

4

5

9

Management sets priorities

Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

10

Members/affiliates provide input to the organization's priorities

Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

11

Members are encouraged to learn about the entire organization

Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

12

Organization trains its members to take risks and assess the results

Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

13

Organization cultivates an atmosphere that infers members are building something great

Strongly Agree

Agree

Disagree

Strongly Disagree

Don't Know

1

2

3

4

5

14

Members' expectations include a career

Strongly Agree

Agree

Disagree

Strongly Disagree

Don't Know

1

2

3

4

5

15

Members participate because of beliefs

Strongly Agree

Agree

Disagree

Strongly Disagree

Don't Know

1

2

3

4

5

16

Membership increases family respect for the individual

Strongly Agree

Agree

Disagree

Strongly Disagree

Don't Know

1

2

3

4

5

17

Organization aligns its budget, planning and policies to its goals and vision

Strongly Agree

Agree

Disagree

Strongly Disagree

Don't Know

1

2

3

4

5

18

Leadership involves and communicates with the local community in which it operates

Strongly Agree

Agree

Disagree

Strongly Disagree

Don't Know

1

2

3

4

5

19

Leadership encourages its members to find a better way to do everything

Strongly Agree

Agree

Disagree

Strongly Disagree

Don't Know

1

2

3

4

5

20

Leadership is willing to take responsibility for its actions even if the result is not a success

Strongly Agree

Agree

Disagree

Strongly Disagree

Don't Know

1

2

3

4

5

21

Name and reach prevent competition from existing or new terrorist organizations entering

Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

22

Business model is a secular and religious hybrid

Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

23

Functions as a franchise business organization

Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

24

Functions as a profit center business organization

Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

25

Functions as a hybrid of franchise and profit center business organization

Strongly Agree Agree Disagree Strongly Disagree Don't Know

1

2

3

4

5

26

Organized as a spaghetti organization, that is one that relies on multi-skilled employees to function in a project oriented structure.

Strongly Agree

Agree

Disagree

Strongly Disagree

Don't Know

1

2

3

4

5

27

Prefers in-house production of Research and Development projects

Strongly Agree

Agree

Disagree

Strongly Disagree

Don't Know

1

2

3

4

5

28

Has access to Scientists who could and would genetically engineer a Bioweapon that currently has no vaccine

Strongly Agree

Agree

Disagree

Strongly Disagree

Don't Know

1

2

3

4

5

29

Has access to Scientists with the ability to develop Chemical, Radiological and Nuclear agents for dissemination

Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
1	2	3	4	5

30

Prefers out-sourcing production of Research and Development projects

Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
1	2	3	4	5

31

Access to Biological Agent development is not hampered by financial concerns

Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
1	2	3	4	5

Strength Weakness Opportunity Threat Assessment

Al Qaeda, like any other organization, has strengths and opportunities that it exploits and weaknesses and threats that it strives to overcome. Questions 32 to 75 address these organizational concerns. Please categorize the following characteristics as strengths, weaknesses, opportunities or threats for Al Qaeda, using the definitions provided. They are presented in no order of preference or importance to the study.

Strengths - internal favorable characteristics within the control of the business leader

Opportunities- external favorable factors in the business environment

Weaknesses - internal unfavorable characteristics within the control of the business leader

Threats - external unfavorable factors in the business environment

32

Management Functions

Technical expertise

Strength

Weakness

Opportunity

Threat

1

2

3

4

33

Management Functions

Network with customers

Strength

Weakness

Opportunity

Threat

1

2

3

4

34

Management Functions

Network with suppliers

Strength

Weakness

Opportunity

Threat

1

2

3

4

35

Management Functions

Distribution system

Strength

Weakness

Opportunity

Threat

	1	2	3	4
36				
Management Functions				
Diversity of subsidiaries				
Strength	Weakness	Opportunity	Threat	
1	2	3	4	
37				
Management Functions				
Improvements to product delivery				
Strength	Weakness	Opportunity	Threat	
1	2	3	4	
38				
Management Functions				
Access to incendiary device Research and Development				
Strength	Weakness	Opportunity	Threat	
1	2	3	4	
39				
Management Functions				

Use of Technology in executing missions

Strength	Weakness	Opportunity	Threat
<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>

40

Management Functions

Use of technology in communicating with its Stakeholders

Strength	Weakness	Opportunity	Threat
<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>

41

Management Functions

Use of Creative approach to product delivery

Strength	Weakness	Opportunity	Threat
<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>

42

Management Functions

Cost of missions

Strength	Weakness	Opportunity	Threat
<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>

43

Management Functions

Control over raw materials

Strength	Weakness	Opportunity	Threat
<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>

44

Management Functions

Recognition of al Qaeda name

Strength	Weakness	Opportunity	Threat
<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>

45

Management Functions

Emphasis of Shari'a

Strength	Weakness	Opportunity	Threat
<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>

46

Management Functions

Labor relations

Strength	Weakness	Opportunity	Threat
<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>

47

Organization Functions

Ability to manage change

Strength	Weakness	Opportunity	Threat
<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>

48

Organization Functions

Ability to adapt to change in competitors capabilities

Strength	Weakness	Opportunity	Threat
<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>

49

Organization Functions

Managers' experience

Strength	Weakness	Opportunity	Threat
<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>

50

Organization Functions

Training opportunities

Strength	Weakness	Opportunity	Threat
<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>

51

Organization Functions

Dedication of membership

Strength	Weakness	Opportunity	Threat
<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>

52

Organization Functions

Use of e-commerce to finance activities

Strength	Weakness	Opportunity	Threat
<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>

53

Organization Functions

Working capital

Strength	Weakness	Opportunity	Threat
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

	<div>1</div>	<div>2</div>	<div>3</div>	<div>4</div>
54				
Organization Functions				
Turnover of personnel				
Strength	Weakness	Opportunity	Threat	
<div>1</div>	<div>2</div>	<div>3</div>	<div>4</div>	
55				
Organization Functions				
Sources of information				
Strength	Weakness	Opportunity	Threat	
<div>1</div>	<div>2</div>	<div>3</div>	<div>4</div>	
56				
Organization Functions				
Incorporation of Islam into message				
Strength	Weakness	Opportunity	Threat	
<div>1</div>	<div>2</div>	<div>3</div>	<div>4</div>	
57				

Organization Functions

Use of Media

Strength	Weakness	Opportunity	Threat
<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>

58

Policies

Creation of fear in intended audiences

Strength	Weakness	Opportunity	Threat
<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>

59

Policies

Use of violence against followers of Islam

Strength	Weakness	Opportunity	Threat
<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>

60

Policies

Competitors

Strength	Weakness	Opportunity	Threat
<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>

61

Policies

Target Market Demographics

Strength

Weakness

Opportunity

Threat

1

2

3

4

62

Policies

Target Market Demographics

Strength

Weakness

Opportunity

Threat

1

2

3

4

63

Policies

Demand for goods and services identification

Strength

Weakness

Opportunity

Threat

1

2

3

4

64

Policies

Stakeholder Interaction

Strength	Weakness	Opportunity	Threat
1	2	3	4

65

Policies

Availability of products

Strength	Weakness	Opportunity	Threat
1	2	3	4

66

External Influences

US Government policies

Strength	Weakness	Opportunity	Threat
1	2	3	4

67

External Influences

Relationship with Middle East Islamic governments (other than Saudi Arabia)

Strength	Weakness	Opportunity	Threat
----------	----------	-------------	--------

	1	2	3	4
68				
External Influences				
Relationship Saudi Arabian government				
Strength	Weakness	Opportunity	Threat	
1	2	3	4	
69				
External Influences				
Current Iraqi Government Policies				
Strength	Weakness	Opportunity	Threat	
1	2	3	4	
70				
Growth capability				
Asian Markets				
Strength	Weakness	Opportunity	Threat	
1	2	3	4	
71				

Growth capability

African Markets

Strength	Weakness	Opportunity	Threat
<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>

72

Other

US Public Perception of Iraqi War

Strength	Weakness	Opportunity	Threat
<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>

73

Other

Access to Biological Weapons raw materials

Strength	Weakness	Opportunity	Threat
<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>

74

Other

Access to Biological Weapons Expertise

	Strength	Weakness	Opportunity	Threat
	<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>



75

Other

Willingness to Use Biological Weapons

	Strength	Weakness	Opportunity	Threat
	<input type="text" value="1"/>	<input type="text" value="2"/>	<input type="text" value="3"/>	<input type="text" value="4"/>

APPENDIX G **RESULTS OF THE BUSINESS OF TERROR:** **A HUMAN PARTICIPANTS SURVEY**

WELCOME TO
The Business of Terror
A Human Participants Survey
Thank you for your participation
Denise N. Baken Ph.D Candidate Biodefense George Mason University

The Business of Terror
By Denise N. Baken
A Human Participants Survey In partial fulfillment of Requirements for Dissertation for Doctorate of Philosophy in Biodefense
Dissertation Chair Dr. Arnaud Nicogossian

Survey Arrangement
This survey has 75 statements, arranged in four distinct parts.
Section 1. The consent form on which you need only indicate if you agree with the consent statements or disagree. If you choose to disagree, the system will skip to the end. If you choose to agree, you will proceed to number 2 to complete some general participant information
Section 2 is indicated by numbers 3-6. These ask simple demographic information.
Section 3 presents statements 7-31 to which you are asked to respond based on your general knowledge of al Qaeda's business and management practices.
Section 4 provides numbers 32-75. You are asked to assess each statement presented to determine if it is an al Qaeda strength, weakness, opportunity or threat, based on your knowledge of al Qaeda's policies and leadership practices.
The entire survey should take only 20 minutes.
1. *INFORMED CONSENT FORM

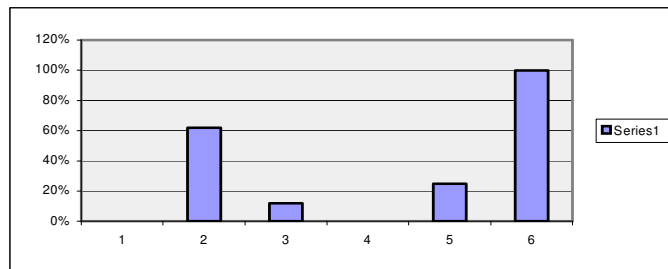
<p>RESEARCH PROCEDURES The aim of the research project is to further understanding of terror organizations as a business entity and the impact of homeland security policy on that business. The purpose of this questionnaire is to survey policy analysts to obtain their perceptions of al Qaeda management style and business practices. Participation is random and voluntary. The researcher is a doctoral candidate from the Biodefense Program under the Molecular and Microbiology Department at George Mason University. If you agree to participate, you will be asked to complete a survey that takes approximately 20 minutes to finish.</p>		
<p>RISKS There are no foreseeable risks to the interview participants.</p>		
<p>BENEFITS There are no benefits to you as a subject other than further understanding al Qaeda organizational business practices.</p>		
<p>CONFIDENTIALITY The demographic data in this study will be kept confidential. The survey data will be kept in a secure location and only the researcher and her advisor will have access.</p>		
<p>PARTICIPATION Your participation is voluntary, and you may withdraw from the study at any time and for any reason prior to thesis submission and defense. If you decide not to participate or if you withdraw from the study, there is no penalty or loss of benefits to which you are otherwise entitled. There are no costs to you or any other party.</p>		
<p>CONTACT This researcher conducting this project is Denise N. Baken, College of Science at George Mason University. She may be reached at dbaken@gmu.edu for questions or to report a research related problem. You may contact the George Mason University Office of Sponsored Programs at 703-993-2295 if you have questions or comments regarding your rights as a participant in the research. The research has been reviewed according to George Mason University procedures governing your participation in this research.</p>		
<p>CONSENT I have read this form and agree to participate in this study.</p>		
<p>Name _____</p>		
<p>Date _____</p>		
<p>(In lieu of signature, click drop down box for choices)</p>		
I agree	8	100%
I disagree	0	0%
Total	8	100%

2. Type Name		
8 Responses		
The aim of the research project is to obtain a better understanding of terrorist organizations business practices, particularly al Qaeda, and determine the impact these practices have on U.S. homeland security policy development.		
The purpose of this questionnaire is to survey policy analysts to obtain their perceptions of al Qaedas management style and business practices. Participation is random, voluntary and confidential.		
The researcher is a doctoral candidate from the Biodefense Program under the Molecular and Microbiology Department at George Mason University.		
Perception of Leadership of al Qaeda Survey		
This 74 multiple-choice-question survey takes less than 20 minutes to complete. The demographic information of each responder, along with all individual responses, will be kept confidential. All information obtained from the survey will be combined and subjected to proper statistical analysis and reported as averages.		
3. Age		
8 Responses		
4. Sex		
8 Responses		
5. Occupation		
8 Responses		
6. Education (please check the highest achieved)		
Less than High School	0	0%
Hgh School	1	12%
Undergraduate	0	0%
Graduate	3	38%
Postgraduate	4	50%
Total	8	100%

Questions 7-31 address Al Qaeda's business practices. Please evaluate each statement and respond as appropriate to your knowledge, awareness or sources of information about al Qaeda's business and operational practices.

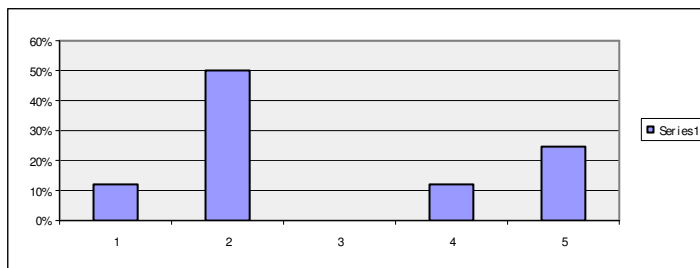
7. Leadership sees change imposed on the organization because of external conditions as an opportunity

Strongly Agree	0	0%
Agree	5	62%
Disagree	1	12%
Strongly Disagree	0	0%
Don't Know	2	25%
Total	8	100%



8. Members view mission execution obstacles as opportunities

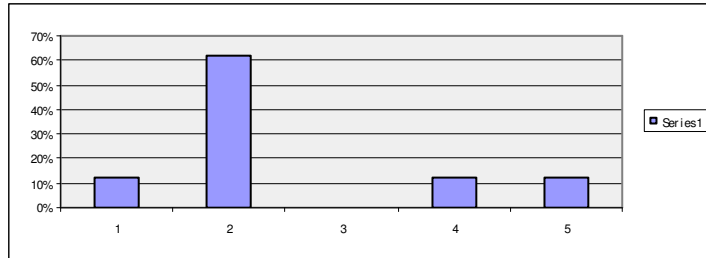
Strongly Agree	1	12%
Agree	4	50%
Disagree	0	0%
Strongly Disagree	1	12%
Don't Know	2	25%
Total	8	100%



9. Management sets priorities

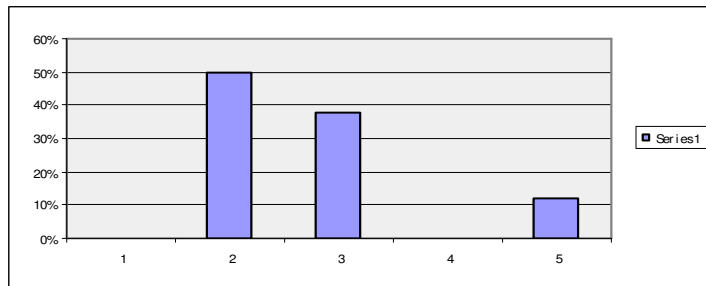
Strongly Agree	1	12%
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Agree	5	62%
Disagree	0	0%
Strongly Disagree	1	12%
Don't Know	1	12%
Total	8	100%



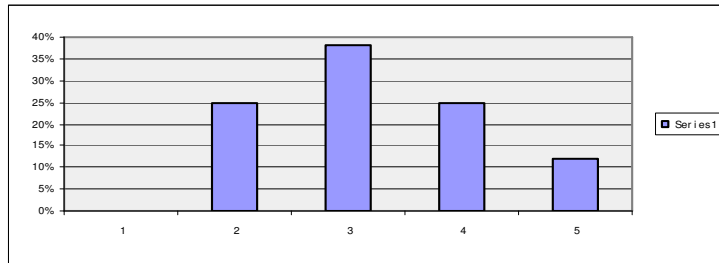
10. Members/affiliates provide input to the organization's priorities

Strongly Agree	0	0%
Agree	4	50%
Disagree	3	38%
Strongly Disagree	0	0%
Don't Know	1	12%
Total	8	100%



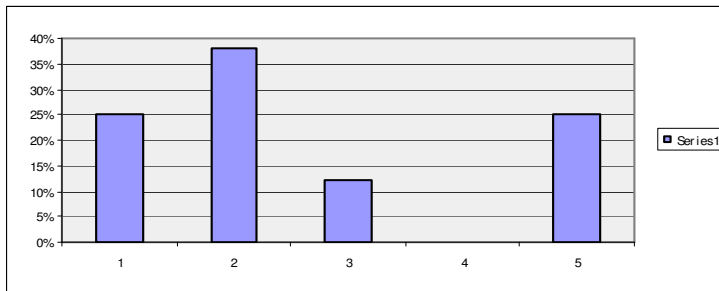
11. Members are encouraged to learn about the entire organization

Strongly Agree	0	0%
Agree	2	25%
Disagree	3	38%
Strongly Disagree	2	25%
Don't Know	1	12%
Total	8	100%



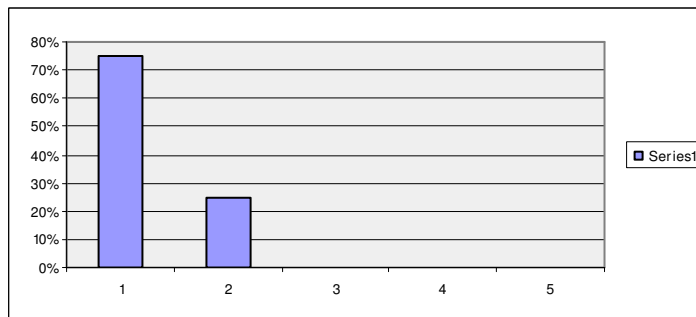
12. Organization trains its members to take risks and assess the results

Strongly Agree	2	25%
Agree	3	38%
Disagree	1	12%
Strongly Disagree	0	0%
Don't Know	2	25%
Total	8	100%



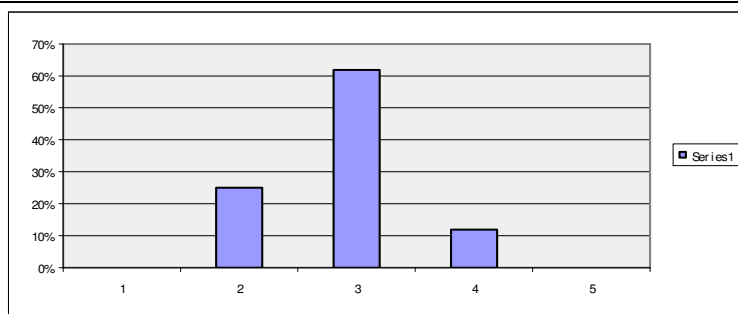
13. Organization cultivates an atmosphere that infers members are building something great

Strongly Agree	6	75%
Agree	2	25%
Disagree	0	0%
Strongly Disagree	0	0%
Don't Know	0	0%
Total	8	100%



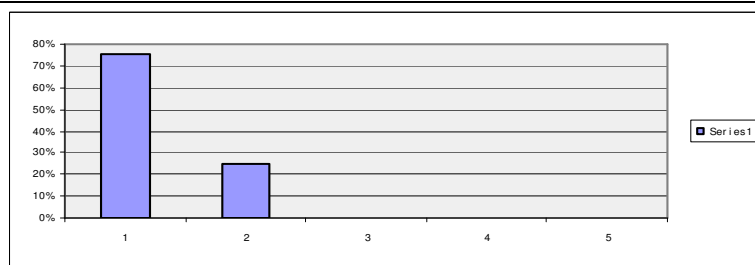
14. Members' expectations include a career

Strongly Agree	0	0%
Agree	2	25%
Disagree	5	62%
Strongly Disagree	1	12%
Don't Know	0	0%
Total	8	100%



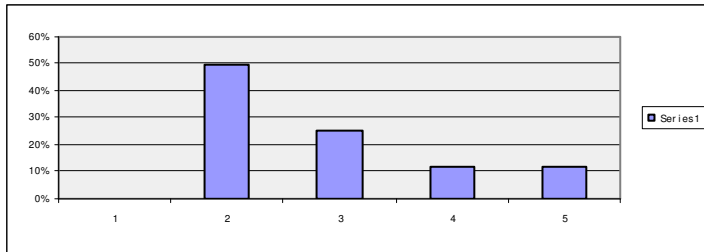
15. Members participate because of beliefs

Strongly Agree	6	75%
Agree	2	25%
Disagree	0	0%
Strongly Disagree	0	0%
Don't Know	0	0%
Total	8	100%



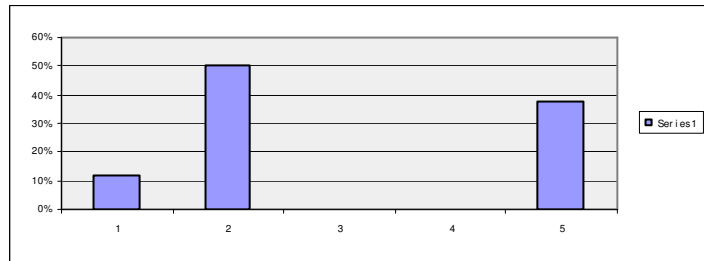
16. Membership increases family respect for the individual

Strongly Agree	0	0%
Agree	4	50%
Disagree	2	25%
Strongly Disagree	1	12%
Don't Know	1	12%
Total	8	100%



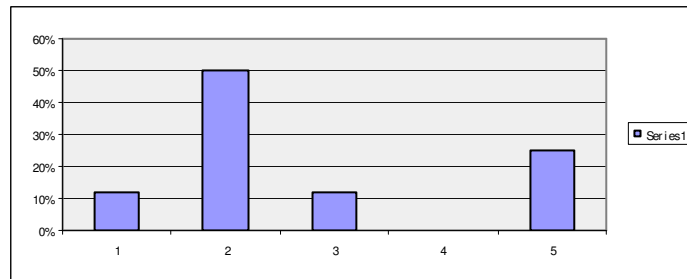
17. Organization aligns its budget, planning and policies to its goals and vision

Strongly Agree	1	12%
Agree	4	50%
Disagree	0	0%
Strongly Disagree	0	0%
Don't Know	3	38%
Total	8	100%



18. Leadership involves and communicates with the local community in which it operates

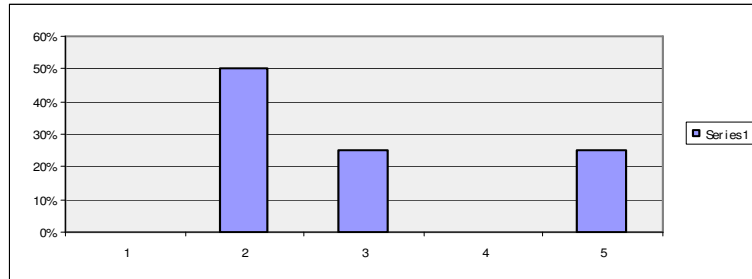
Strongly Agree	1	12%
Agree	4	50%
Disagree	1	12%
Strongly Disagree	0	0%
Don't Know	2	25%
Total	8	100%



19. Leadership encourages its members to find a better way to do everything

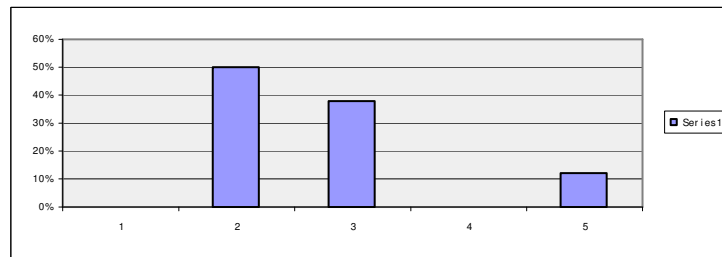
Strongly Agree	0	0%
Agree	4	50%

Disagree	2	25%
Strongly Disagree	0	0%
Don't Know	2	25%
Total	8	100%



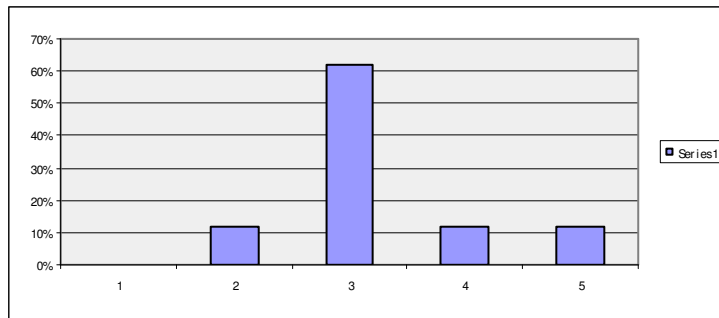
20. Leadership is willing to take responsibility for its actions even if the result is not a success

Strongly Agree	0	0%
Agree	4	50%
Disagree	3	38%
Strongly Disagree	0	0%
Don't Know	1	12%
Total	8	100%



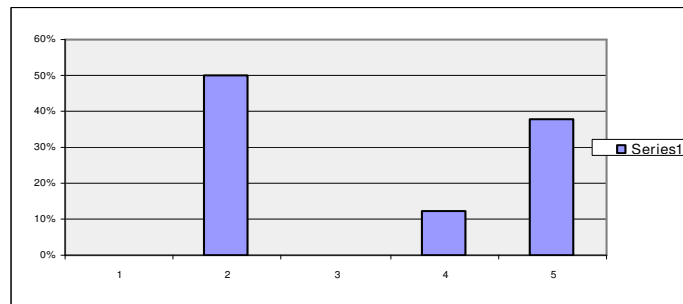
21. Name and reach prevent competition from existing or new terrorist organizations entering

Strongly Agree	0	0%
Agree	1	12%
Disagree	5	62%
Strongly Disagree	1	12%
Don't Know	1	12%
Total	8	100%



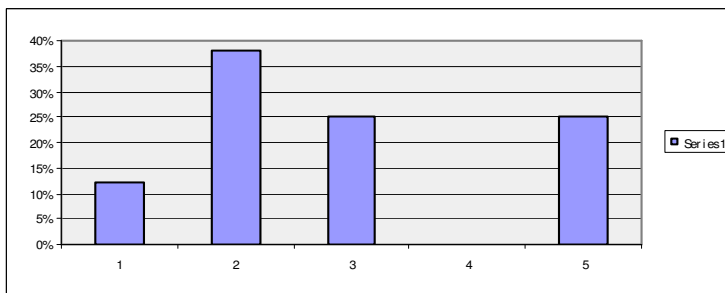
22. Business model is a secular and religious hybrid

Strongly Agree	0	0%
Agree	4	50%
Disagree	0	0%
Strongly Disagree	1	12%
Don't Know	3	38%
Total	8	100%



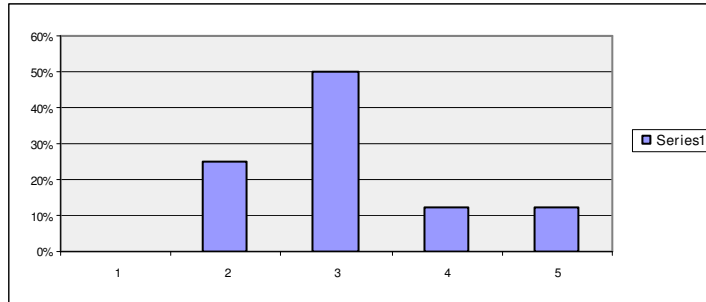
23. Functions as a franchise business organization

Strongly Agree	1	12%
Agree	3	38%
Disagree	2	25%
Strongly Disagree	0	0%
Don't Know	2	25%
Total	8	100%



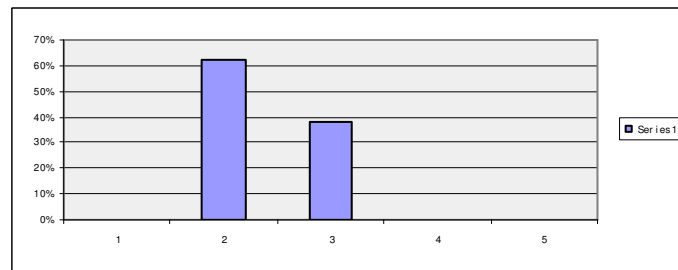
24. Functions as a profit center business organization

Strongly Agree	0	0%
Agree	2	25%
Disagree	4	50%
Strongly Disagree	1	12%
Don't Know	1	12%
Total	8	100%



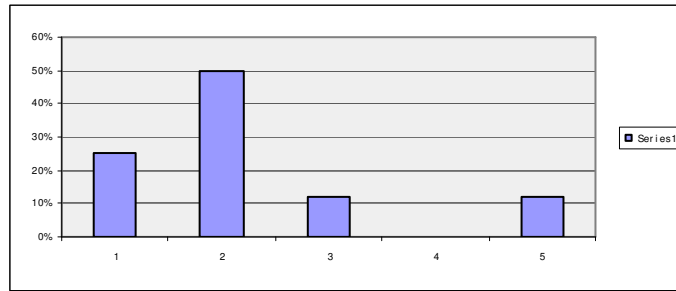
25. Functions as a hybrid of franchise and profit center business organization

Strongly Agree	0	0%
Agree	5	62%
Disagree	3	38%
Strongly Disagree	0	0%
Don't Know	0	0%
Total	8	100%



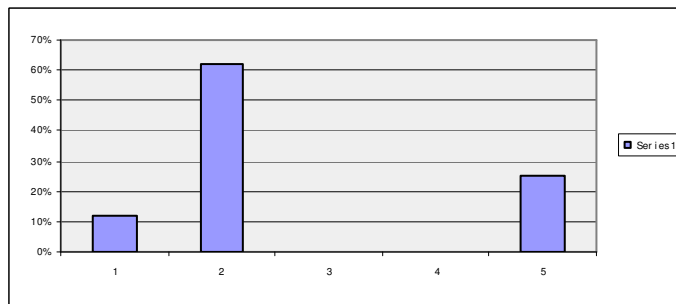
26. Organized as a spaghetti organization*, that is one that relies on multi-skilled employees to function in a project oriented structure.

Strongly Agree	2	25%
Agree	4	50%
Disagree	1	12%
Strongly Disagree	0	0%
Don't Know	1	12%
Total	8	100%



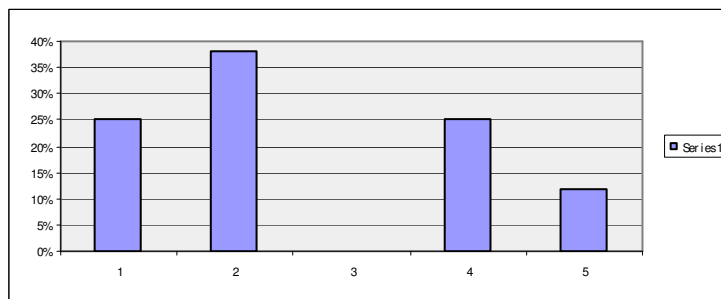
27. Prefers in-house production of Research and Development projects

Strongly Agree	1	12%
Agree	5	62%
Disagree	0	0%
Strongly Disagree	0	0%
Don't Know	2	25%
Total	8	100%



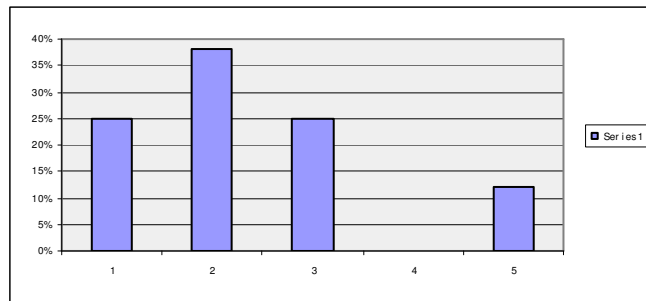
28. Has access to Scientists who could and would genetically engineer a Bioweapon that currently has no vaccine

Strongly Agree	2	25%
Agree	3	38%
Disagree	0	0%
Strongly Disagree	2	25%
Don't Know	1	12%
Total	8	100%



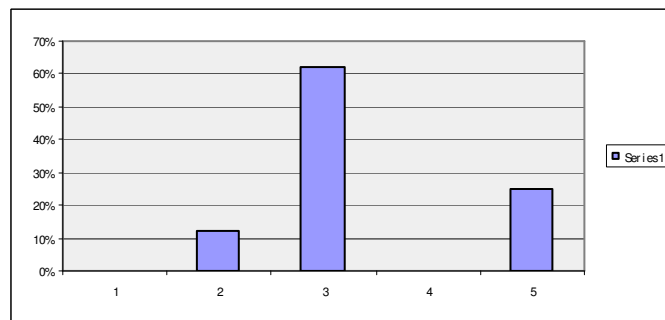
29. Has access to Scientists with the ability to develop Chemical, Radiological and Nuclear agents for dissemination

Strongly Agree	2	25%
Agree	3	38%
Disagree	2	25%
Strongly Disagree	0	0%
Don't Know	1	12%
Total	8	100%



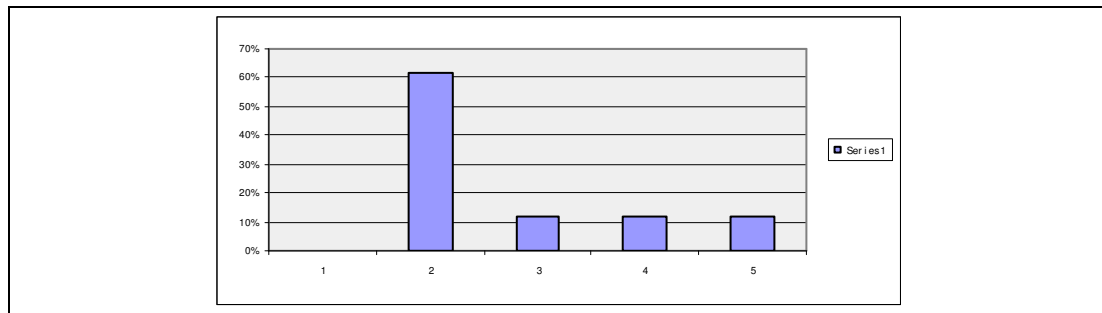
30. Prefers out-sourcing production of Research and Development projects

Strongly Agree	0	0%
Agree	1	12%
Disagree	5	62%
Strongly Disagree	0	0%
Don't Know	2	25%
Total	8	100%



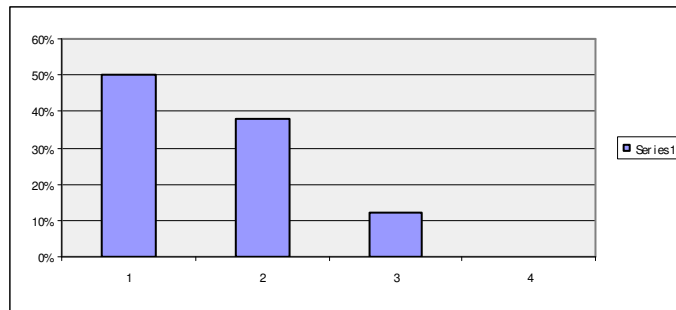
31. Access to Biological Agent development is not hampered by financial concerns

Strongly Agree	0	0%
Agree	5	62%
Disagree	1	12%
Strongly Disagree	1	12%
Don't Know	1	12%
Total	8	100%



Strength Weakness Opportunity Threat Assessment
<p>Al Qaeda, like any other organization, has strengths and opportunities that it exploits and weaknesses and threats that it strives to overcome. Questions 32 to 75 address these organizational concerns. Please categorize the following characteristics as strengths, weaknesses, opportunities or threats for Al Qaeda, using the definitions provided. They are presented in no order of preference or importance to the study.</p>
<p>Strengths - internal favorable characteristics within the control of the business leader</p>
<p>Opportunities - external favorable factors in the business environment</p>
<p>Weaknesses - internal unfavorable characteristics within the control of the business leader</p>
<p>Threats - external unfavorable factors in the business environment</p>

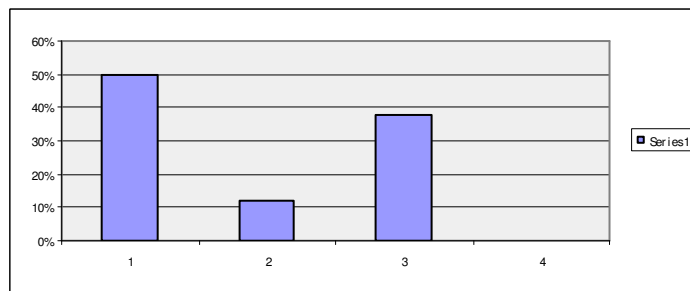
32. Management Functions			
Technical expertise			
Strength	4	50%	
Weakness	3	38%	
Opportunity	1	12%	
Threat	0	0%	
Total	8	100%	



33. Management Functions

Network with customers

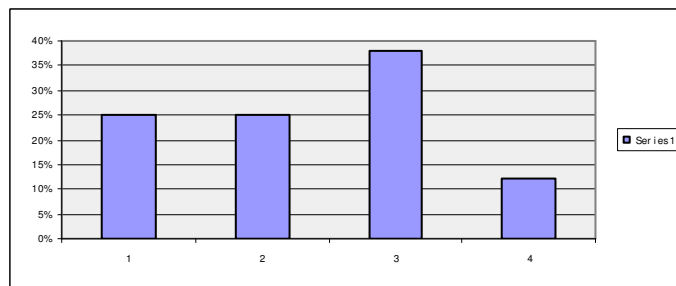
Strength	4	50%
Weakness	1	12%
Opportunity	3	38%
Threat	0	0%
Total	8	100%



34. Management Functions

Network with suppliers

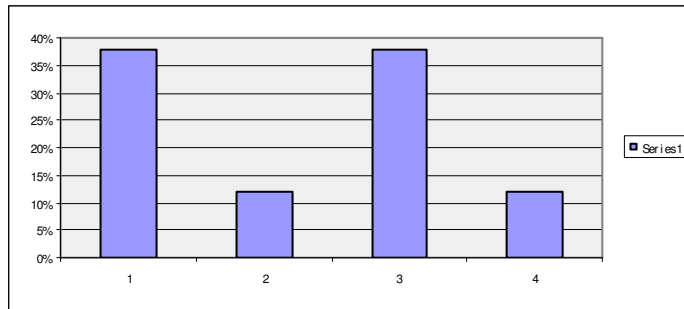
Strength	2	25%
Weakness	2	25%
Opportunity	3	38%
Threat	1	12%
Total	8	100%



35. Management Functions

Distribution system

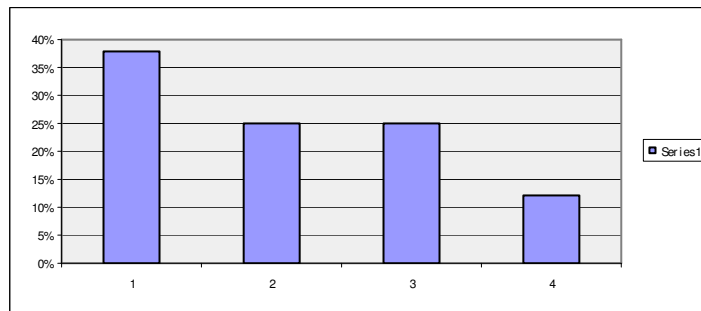
Strength	3	38%
Weakness	1	12%
Opportunity	3	38%
Threat	1	12%
Total	8	100%



36. Management Functions

Diversity of subsidiaries

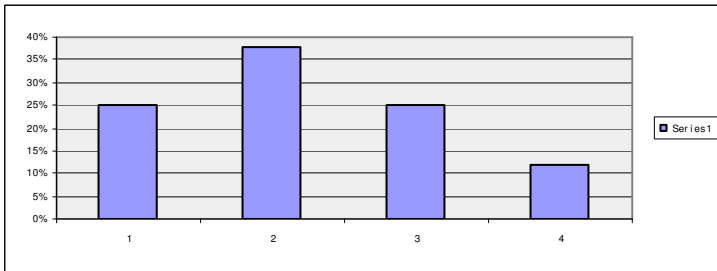
Strength	3	38%
Weakness	2	25%
Opportunity	2	25%
Threat	1	12%
Total	8	100%



37. Management Functions

Improvements to product delivery

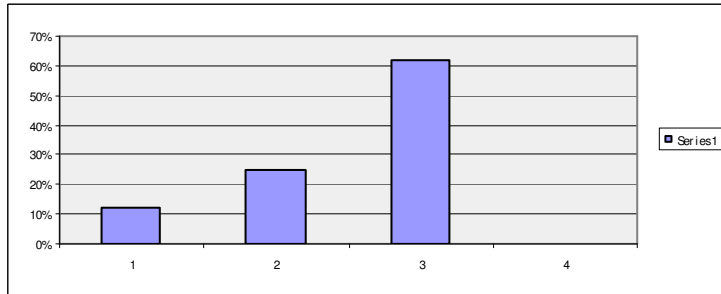
Strength	2	25%
Weakness	3	38%
Opportunity	2	25%
Threat	1	12%
Total	8	100%



38. Management Functions

Access to incendiary device Research and Development

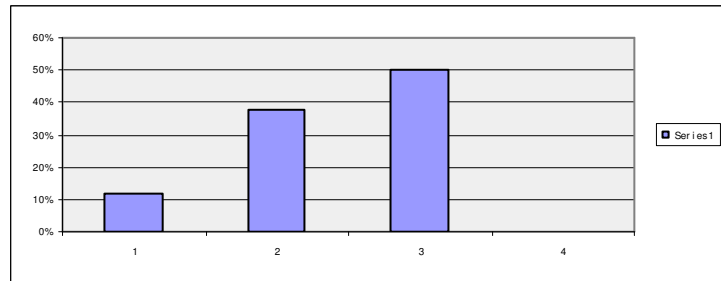
Strength	1	12%
Weakness	2	25%
Opportunity	5	62%
Threat	0	0%
Total	8	100%



39. Management Functions

Use of Technology in executing missions

Strength	1	12%
Weakness	3	38%
Opportunity	4	50%
Threat	0	0%
Total	8	100%

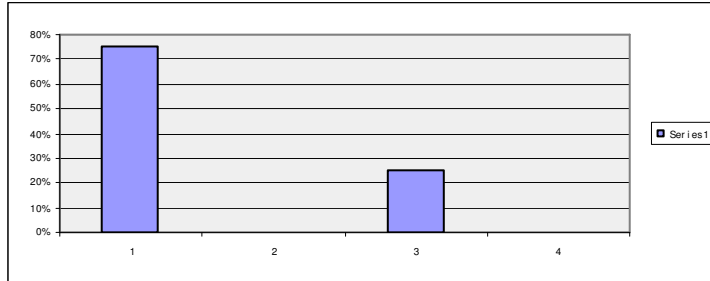


40. Management Functions

Use of technology in communicating with its Stakeholders

Strength	6	75%
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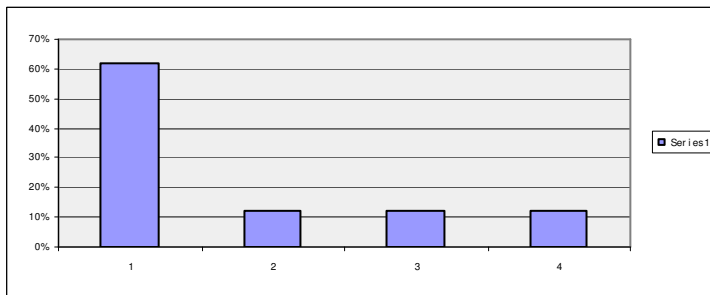
Weakness	0	0%
Opportunity	2	25%
Threat	0	0%
Total	8	100%



41. Management Functions

Use of Creative approach to product delivery

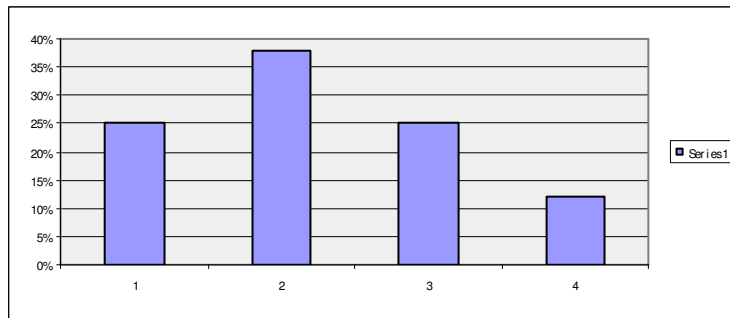
Strength	5	62%
Weakness	1	12%
Opportunity	1	12%
Threat	1	12%
Total	8	100%



42. Management Functions

Cost of missions

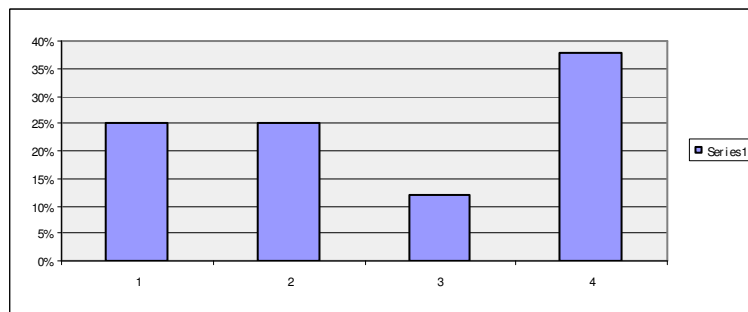
Strength	2	25%
Weakness	3	38%
Opportunity	2	25%
Threat	1	12%
Total	8	100%



43. Management Functions

Control over raw materials

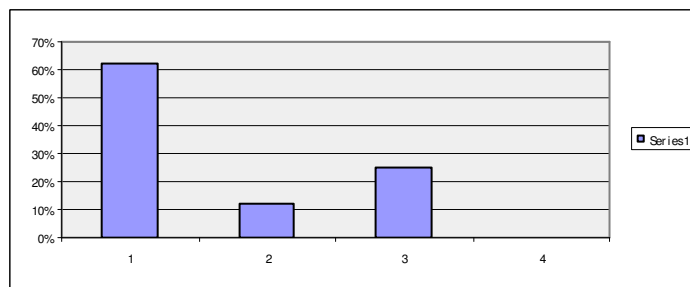
Strength	2	25%
Weakness	2	25%
Opportunity	1	12%
Threat	3	38%
Total	8	100%



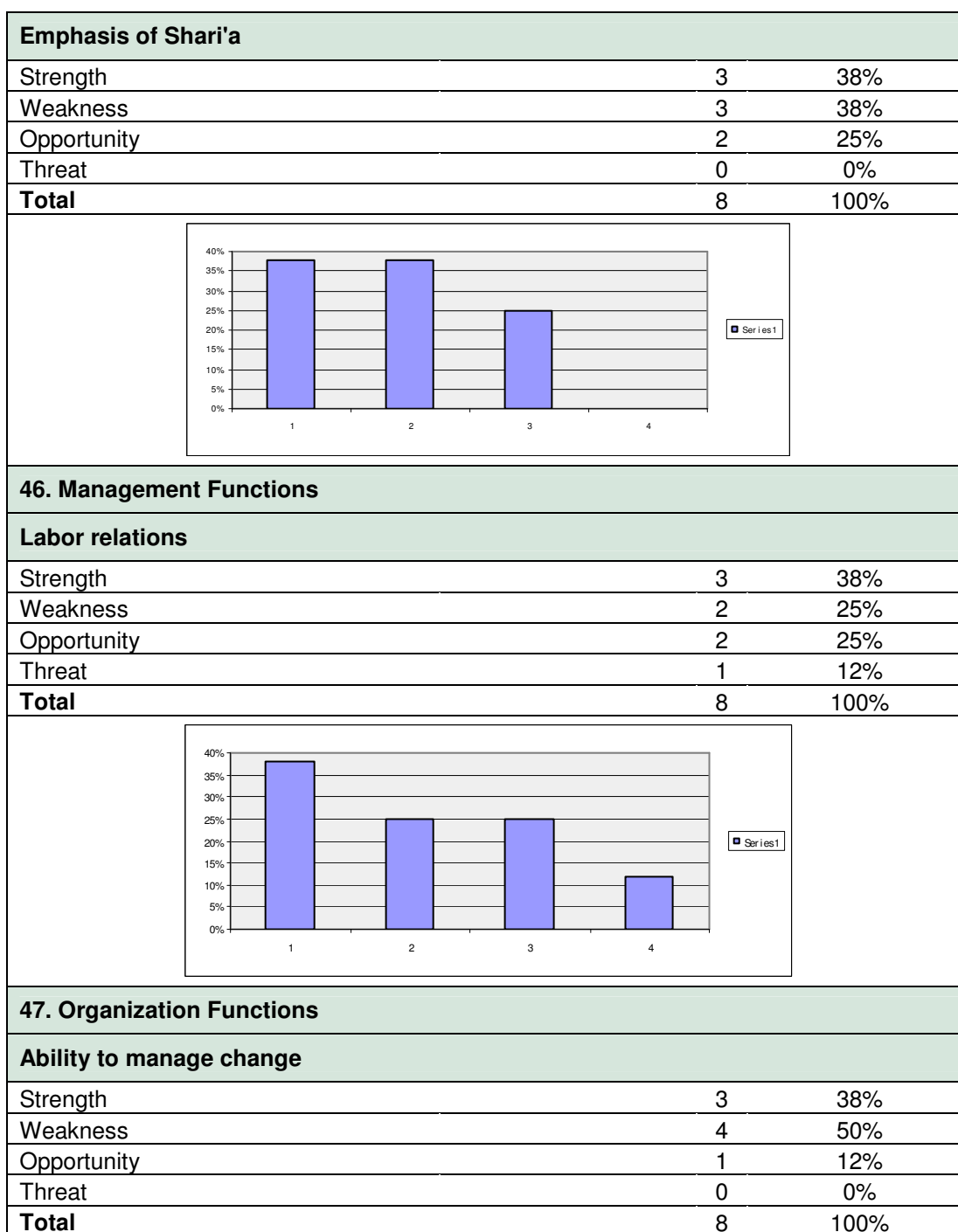
44. Management Functions

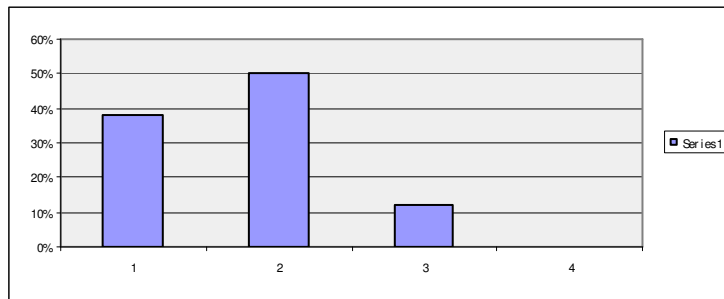
Recognition of al Qaeda name

Strength	5	62%
Weakness	1	12%
Opportunity	2	25%
Threat	0	0%
Total	8	100%



45. Management Functions

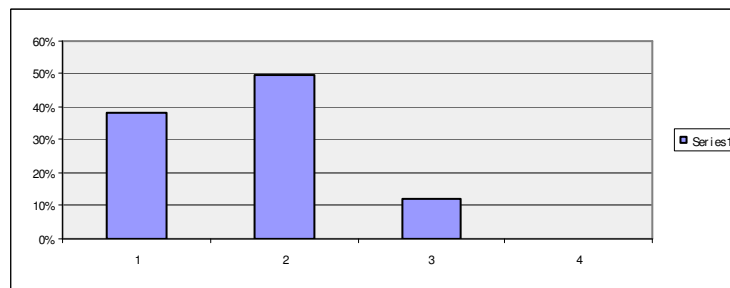




48. Organization Functions

Ability to adapt to change in competitors capabilities

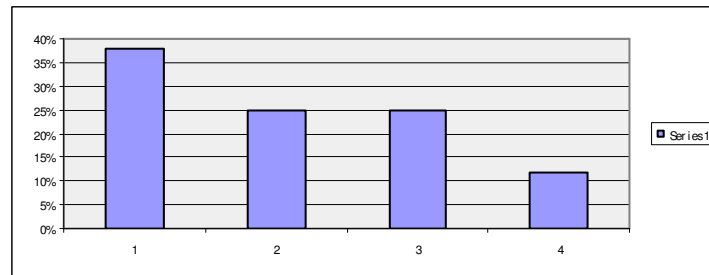
Strength	3	38%
Weakness	4	50%
Opportunity	1	12%
Threat	0	0%
Total	8	100%



49. Organization Functions

Managers' experience

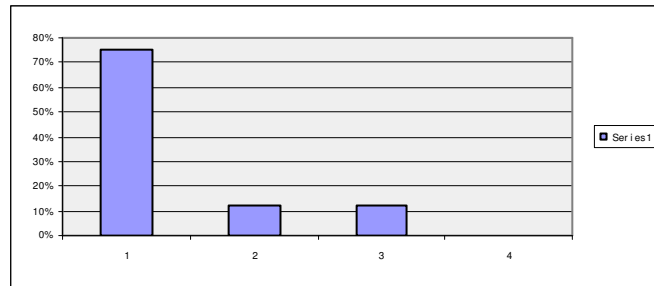
Strength	3	38%
Weakness	2	25%
Opportunity	2	25%
Threat	1	12%
Total	8	100%



50. Organization Functions

Training opportunities

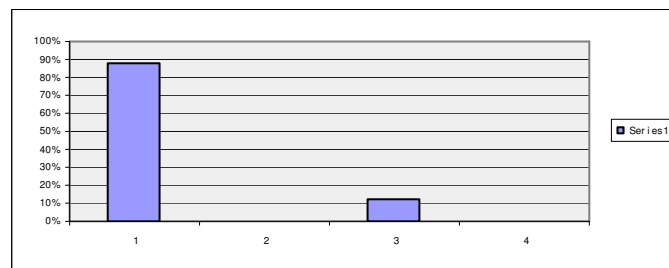
Strength	6	75%
Weakness	1	12%
Opportunity	1	12%
Threat	0	0%
Total	8	100%



51. Organization Functions

Dedication of membership

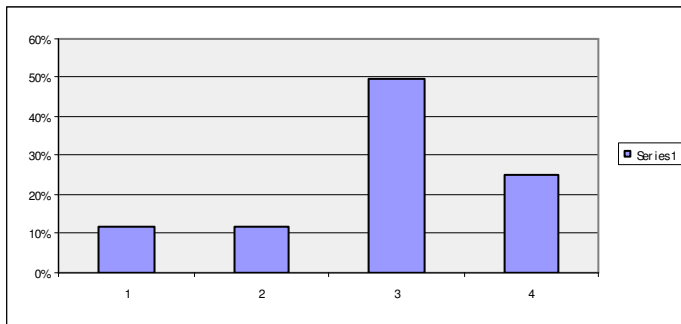
Strength	7	88%
Weakness	0	0%
Opportunity	1	12%
Threat	0	0%
Total	8	100%



52. Organization Functions

Use of e-commerce to finance activities

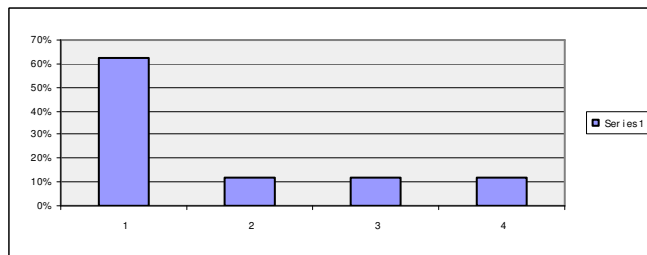
Strength	1	12%
Weakness	1	12%
Opportunity	4	50%
Threat	2	25%
Total	8	100%



53. Organization Functions

Working capital

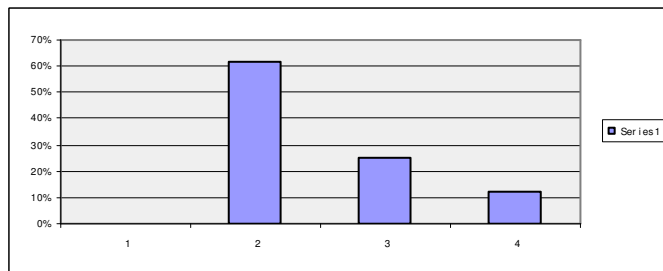
Strength	5	62%
Weakness	1	12%
Opportunity	1	12%
Threat	1	12%
Total	8	100%



54. Organization Functions

Turnover of personnel

Strength	0	0%
Weakness	5	62%
Opportunity	2	25%
Threat	1	12%
Total	8	100%

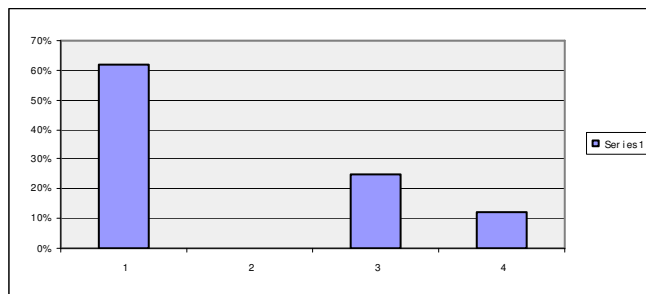


55. Organization Functions

Sources of information

Strength	5	62%
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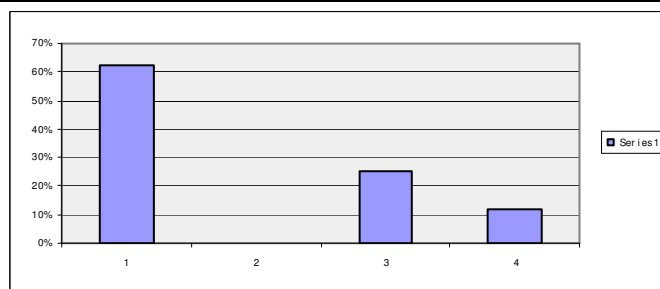
Weakness	0	0%
Opportunity	2	25%
Threat	1	12%
Total	8	100%



56. Organization Functions

Incorporation of Islam into message

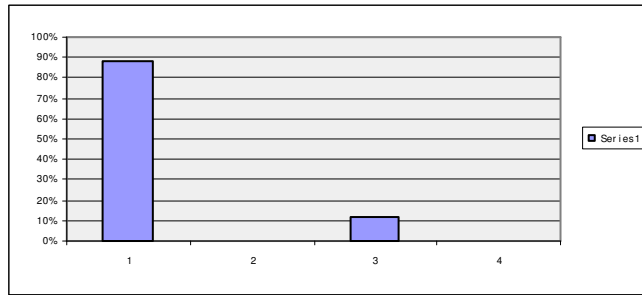
Strength	5	62%
Weakness	0	0%
Opportunity	2	25%
Threat	1	12%
Total	8	100%



57. Organization Functions

Use of Media

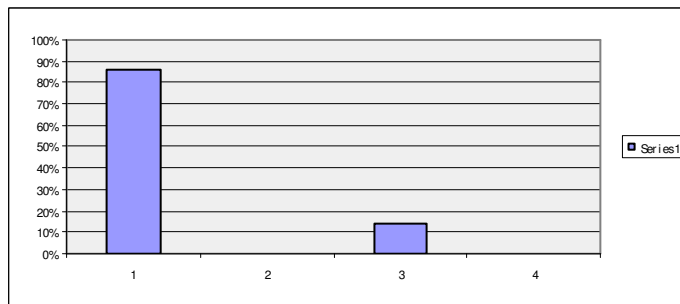
Strength	7	88%
Weakness	0	0%
Opportunity	1	12%
Threat	0	0%
Total	8	100%



58. Policies

Creation of fear in intended audiences

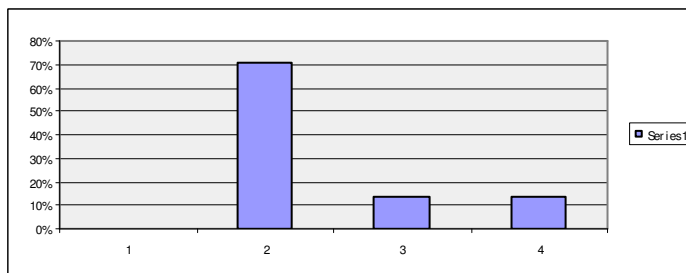
Strength	6	86%
Weakness	0	0%
Opportunity	1	14%
Threat	0	0%
Total	7	100%



59. Policies

Use of violence against followers of Islam

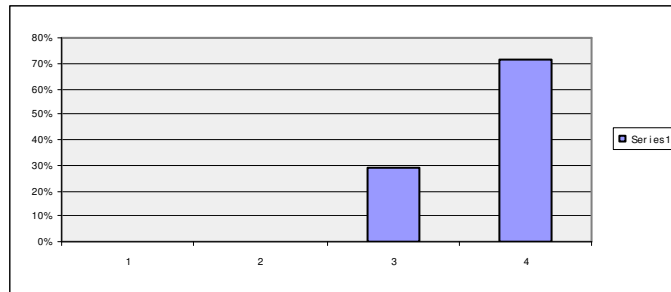
Strength	0	0%
Weakness	5	71%
Opportunity	1	14%
Threat	1	14%
Total	7	100%



60. Policies

Competitors

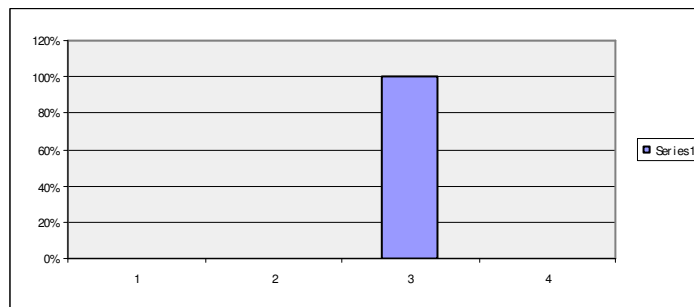
Strength	0	0%
Weakness	0	0%
Opportunity	2	29%
Threat	5	71%
Total	7	100%



61. Policies

Target Market Demographics

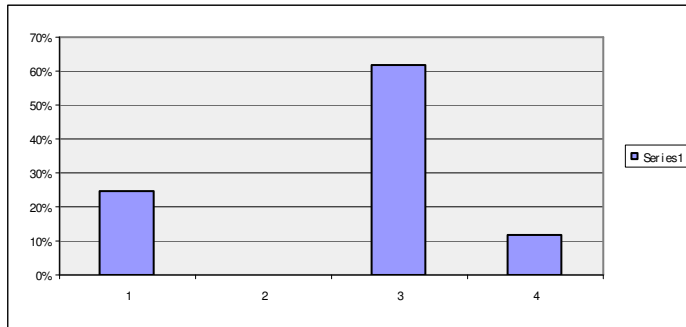
Strength	0	0%
Weakness	0	0%
Opportunity	7	100%
Threat	0	0%
Total	7	100%



62. Policies

Target Market Demographics

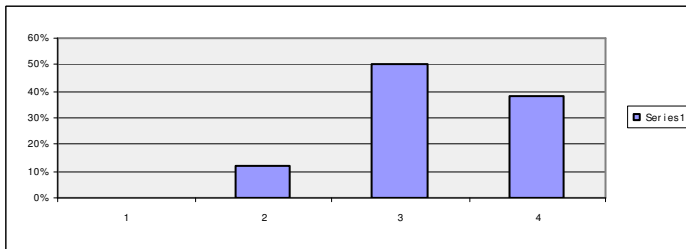
Strength	2	25%
Weakness	0	0%
Opportunity	5	62%
Threat	1	12%
Total	8	100%



63. Policies

Demand for goods and services identification

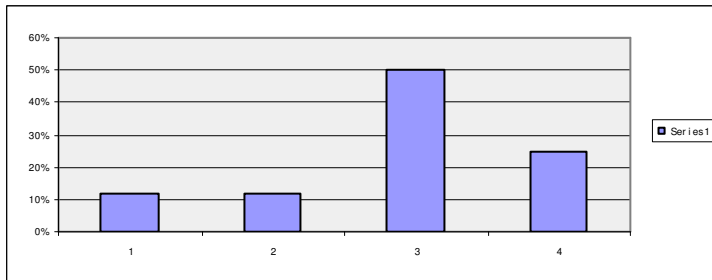
Strength	0	0%
Weakness	1	12%
Opportunity	4	50%
Threat	3	38%
Total	8	100%



64. Policies

Stakeholder Interaction

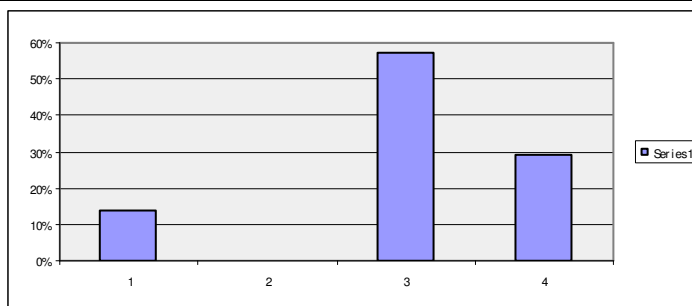
Strength	1	12%
Weakness	1	12%
Opportunity	4	50%
Threat	2	25%
Total	8	100%



65. Policies

Availability of products

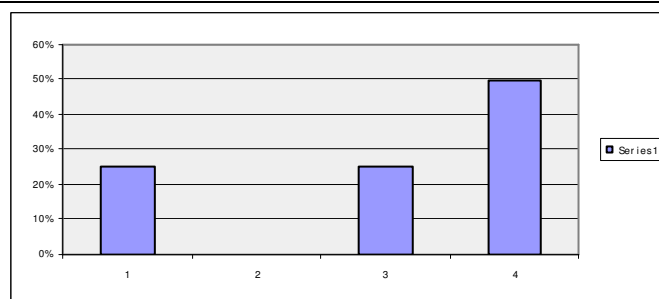
Strength	1	14%
Weakness	0	0%
Opportunity	4	57%
Threat	2	29%
Total	7	100%



66. External Influences

US Government policies

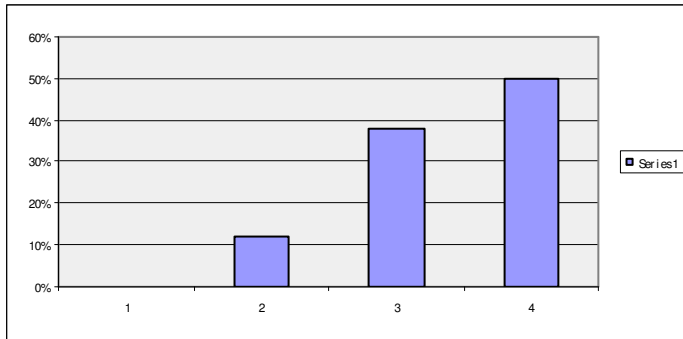
Strength	2	25%
Weakness	0	0%
Opportunity	2	25%
Threat	4	50%
Total	8	100%



67. External Influences

Relationship with Middle East Islamic governments (other than Saudi Arabia)

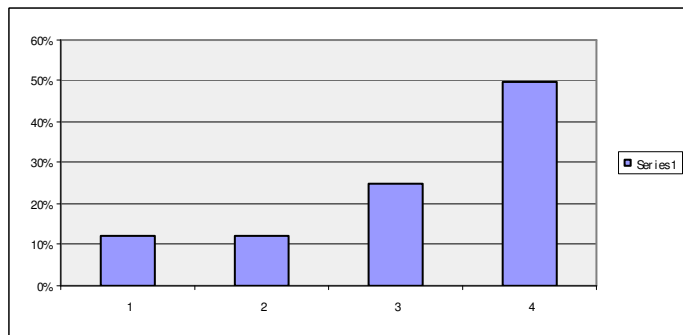
Strength	0	0%
Weakness	1	12%
Opportunity	3	38%
Threat	4	50%
Total	8	100%



68. External Influences

Relationship Saudi Arabian government

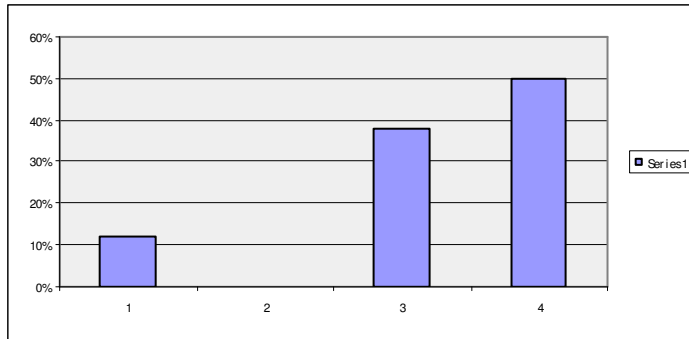
Strength	1	12%
Weakness	1	12%
Opportunity	2	25%
Threat	4	50%
Total	8	100%



69. External Influences

Current Iraqi Government Policies

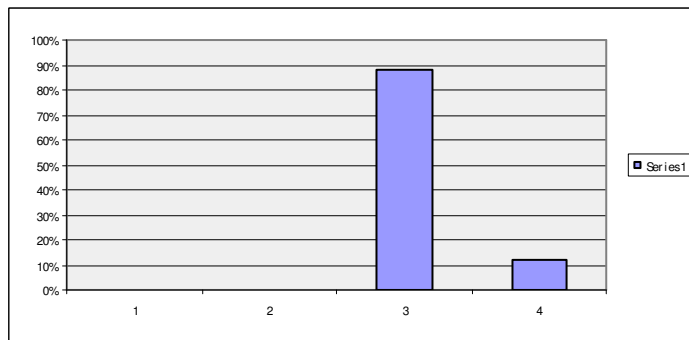
Strength	1	12%
Weakness	0	0%
Opportunity	3	38%
Threat	4	50%
Total	8	100%



70. Growth capability

Asian Markets

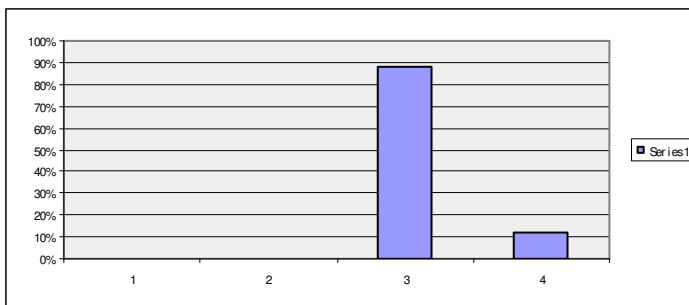
Strength	0	0%
Weakness	0	0%
Opportunity	7	88%
Threat	1	12%
Total	8	100%

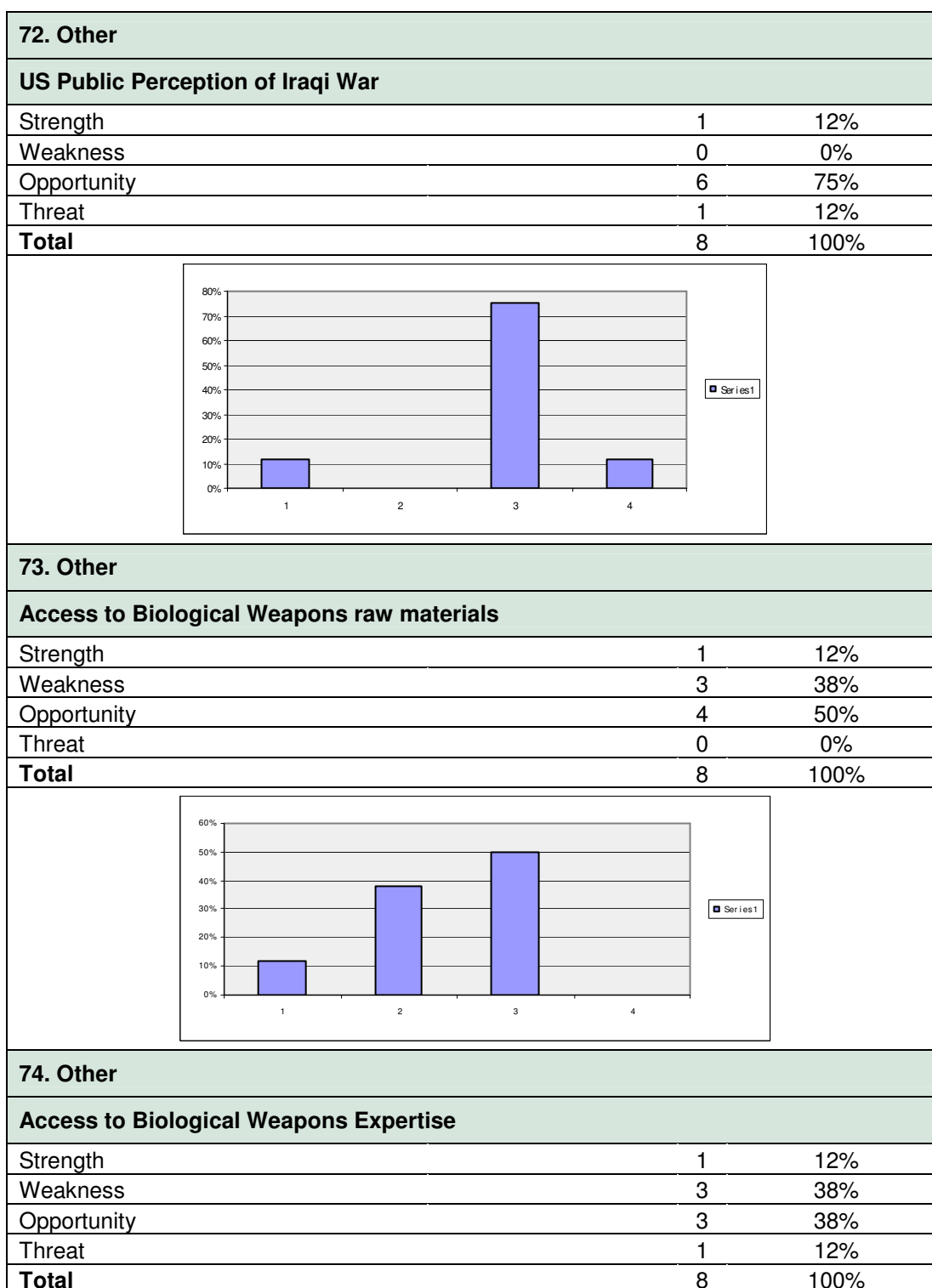


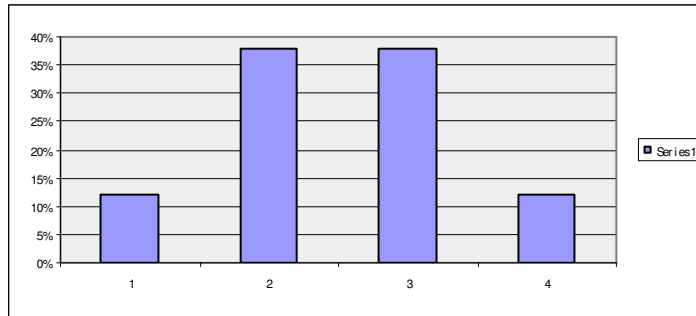
71. Growth capability

African Markets

Strength	0	0%
Weakness	0	0%
Opportunity	7	88%
Threat	1	12%
Total	8	100%



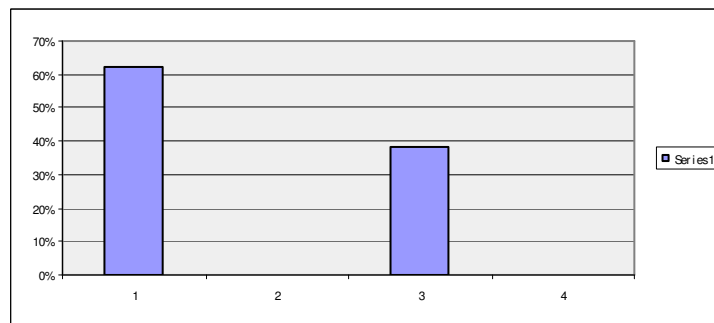




75. Other

Willingness to Use Biological Weapons

Strength	5	62%
Weakness	0	0%
Opportunity	3	38%
Threat	0	0%
Total	8	100%



APPENDIX H

COMMUNICATION INFLUENCE INDEX (CI_INDEX)

The Communication Influence index seeks to capture the potential exponential influence each actor can exert on other members of the network. It combines direct and indirect agent to agent interaction to permit visualization of strong and weak ties as actors move toward subset closed systems within the organization.

The CI_Index is an estimator of the qualitative and quantitative influences operating on organizational or network actor's decision making processes. It retains the meta-matrix relationship reasoning captured in dynamic social network models and then superstructures onto the process social and cultural influences that are difficult to reduce to mathematical formula. This superstruct activity evolved from attempts to capture the social and economic impact Islam has on the business decision making process of al Qaeda as missions are designed and training is accomplished. This very much "decentralized" organization maintains significant control over a global network of independent agents yet the funding provided to those agents is kept to a minimum. Meta-matrix data provides a statistical approximation of a point in time for the organization, not really one person. In a multi-agent simulation, the bounded rationality of the decision making is emulated and real world decisions are insinuated. As the meta-matrices are developed their binary (0,1) responses are captured and weighted influences from the other agents relationships to all agents is essentially captured in a large "agent-by-agent" matrix. This matrix emulates projected influences through the weighted

network and the agent-to-agent behavioral responses are approximated. These however, do not capture the influence of the pervading force throughout the jihad – Islam. Nor does it capture the interpersonal and organizational trust perspective that permeates the network for it to function as effectively as it does.

Because this is a simulation of a covert operation and is approximating a relationship contained in uncertainty, the result is one of satisficing and not one of optimizing.

The Communication Influence Index hypothesis is one that assumes covert network influence can be estimated by representing the network dyad-triad as a neighborhood with accessibility between neighbors. In general the concept is one of:

Relationship factor x distance x trust

where

Relationship factor = estimate of the coefficient representing influence one actor has on a specific member of the network

Distance = shortest distance between specific dyad or triad

Trust = equivalent to the relationship factor estimated by initial dyad entry to network.

As such, the

CI = measure of the intergroup communication capability of an actor

n = number of actors

i = relationship coefficient

j = geodesic distance

CI = each actor has a unique *ij* for each of the other network actors, therefore for n actors there are n *ij* relationships

Collinearity is not a problem because no two variables are measuring the same range within the neighborhood. Each agent has a unique relationship with each of the other agents, therefore each of the measurements is unique.

The methodology indirectly captures the influence one actor may have on the processes needed for a network to function. It is a key element in the Virtual Influence Environment Model³² that was developed to accommodate the multi-facet information flow process inherent in a terror network.

The CI_Index is more than a key player analysis. It is an indicator that acknowledges the breadth of an actor's influence on an activity, even if that actor is not physically present. There is no assumption that removal of an agent removes the agent's influence. These are seen as two separate actions. The index also acknowledges that the influence exercised by a removed agent, could be significant enough that it increases rather than decreases at the time of removal. For example, Mustafa Setmariam Nasar was physically removed from the al Qaeda network in November 2005, however, the influence he continues to wield is exemplified in the analysis conducted on the Egyptian attacks on the Taba Hilton hotel and the Sharm al-Sheikh resort near the Red Sea. Al Qaeda supporter Abu Muhammad al Hilali, critiqued the attacks using Nasar type criteria and instruction for improvement

The index is a gauge that estimates an actor's ability to induce actions in others, either as a single response or tendency in approach.

³² Virtual Influence Environment Model – concept developed by Baken to reflect the significant direct and indirect influences on network decision and planning process. This is discussed in Chapter 4.

Relationship Matrix

CI_Index focuses on one aspect of the network actor's relationship to the other network members and then estimates a tendency for those other actors to imitate or reflect this same actor's espoused position on an issue in their future behavior. This influence gauge follows a logic that physical removal from the network does not necessarily diminish an actor's index. To develop this influence gauge, the index first identifies the initial network actor's relationship with each of the other actors and establishes a numeric representation of that relationship. For instance, if a network included Nasar and Abu Muhammad al Hilali, the CI_Index relationship scale would permit a .5 for Hilali and .75 for Nasar or a .5 for Hilali and a .9 for Nasar because his analysis indicates a tacit "acceptance" of Nasar's template for mission execution as the standard for a "quality mission". If open source data indicated the two had met and there was some subordinate supervisor relationship, then a .5-.75 relationship would result. If however there is not indication of the subordinate supervisor relationship then a .5-.9 student-mentor scale would be applied.

Once the relationship matrix is populated, a geodesic is calculated. The results are then multiplied by the relationship matrix. The second multiplication provides an estimate of the positive rate of increase the duplicative dyad-triad relationship connections can have across their geodesic distances. This weighted actor-to-actor estimate is examined in inverse order, in deference to the geodesic factor, which by definition employs a preference for the shortest distance.

The index is also an indicator of the actor's tendency to extend any direct influence through mentorship, family or supervisor ties. This extends the range of the actor and creates a stronger CI_Index. This also provides a means to estimate the mental model that is possible as well as the patterns of interaction that could occur during a decision process before the ultimate mission execution.

Current social network indices estimate the impact of a node remaining in the network or leaving the network. They assume communication and influence cease when the node is removed. The CI_Index differs because it focuses on the potential total influence transmission between the dyad-triad relationships.

APPENDIX I

GLOSSARY OF TERMS

Adjacency: Distance based information analysis used to determine relationship between dictionary and rule based words.

Agent: Individual actor within a network; information processor involved in an interactive cycle.

Asymmetric Tie: One directional ties.

Attribute: Characteristics, traits.

Bounded Rationality: Behavior exhibited by a rational choice made within the limited knowledge or capability of the decision maker.

Bridge: An edge with the same characteristics as a cut point that is its removal disconnects the graph and increases the components.

Caliphate: Title of the Islamic leadership that results when rulership affects that which existed with the successors who ruled Muslim immediately after the death of Mohammed.

Cellular: Several core cliques with ties to various core nodes (small world ties).

Central Graph: Union of all graphs with the purpose of finding the most central edges.

Clique: A maximally complete subgraph of a graph.

Cohesion: Strong bonds or relationships.

Communication/Influence Index: numerical estimate that represents the potential exponential influence one actor may have on others in a network.

Complete Subgraph: Subset of nodes and ties such that all nodes and ties are connected.

Component: Maximally connected subgraph.

Confirmed Network Tie: Reciprocal network tie.

Core-Periphery: Core subset of nodes with ties and then outliers connected.

Cut Point: Point in the graph whose position is such that when it is removed it results in an increase in the number of components in the graph.

Cycle: A start and end at the same point.

Density: Number of ties divided by the maximum number of nodes.

Dyads: Two actors exchanging messages.

Dynamic Network Analysis: Models that bring social network analysis, link analysis and dynamic movement of network nodes to simulate movement within large networks.

Edge: Connection between two vertices; ordered or unordered pair of nodes.

Edge Pairs: Two actors linked or tied in a graph.

Equivalence: Two nodes that have the same linkages and relationships to the same other nodes.

Fragmentation: Pairs of unconnected nodes in a network.

Geodesic: Shortcut path between two nodes.

Graph: Set of points and lines; each graph is a relationship of at least two node sets.

Group: Mechanism used to categorize nodes and their relationships and connections.

Hamming Distance: Measure of similarities between two maps.

Islamic Economics: System of economic activity considered an alternative to Western systems. It defines its rules based on the rules of Shar'ia law.

Jihad: A term that literally means "to struggle". There are four major types of struggle: the heart, the tongue, the hand, and the sword.

Knowledge Network: Agent has connection to some piece of information.

Matrix: Construct that provides a means to present the actor-to-actor relationships.

Maximally Complete: Subgraph whose node count cannot be increased; fully connected.

Meta-Matrix: Entology used to illustrate the relation between resources.

N-Gram: String of words that convey one concept.

Node: Representation of network actors at edge ends, usually illustrated as a filled or unfilled circle.

Opportunism: Condition result of actions or decisions made from self-interest with guile usually from information not known by all affected parties.

Path: Trail with no repeated vertices.

Pendant: Actor with only one connection to the network.

Principle of Wealth: Equitable distribution of wealth.

QAP: Resampling based method for determining statistical error.

Resource: Network support system entities that enhance, add to, change or in some way affect the network's activities.

Rububiyah: Absolute Lordship of Allah.

Scale Free: Relationship that presents a few nodes with many ties and many nodes with a few ties.

Shar'ia Law: code of law adhered to by followers of Islam that is derived from the Holy Qur'an and the sayings of the Prophet Mohammad.

Simmelian Tie: A tie imbedded in a clique.

Small World: Consistent relationship with close neighbor nodes, but random connection of nodes.

Social Capital: Benefits of social interaction.

Social Network: Illustration used to identify the links between individuals and resources in an organization.

Source: Provider of network function requirements.

Stemming: Deletion of characters in phrases and words to conserve space, but still retain concept for idea communication.

Symmetric Tie: Reciprocated tie.

Target: Actor toward whom efforts are directed.

Task: Mission.

Thesaurus: Collection of words, dates, events and identification terms relevant to network relationship examination and management.

Trail: Walk with no repeated edges transaction cost economics costs associated with opportunisms, negotiation and enforcement of contracts.

Triads: Three actors interacting and/or exchanging messages.

Value Function: Assessed worth of process outcome after calculating cost, time, quality and functionality of inputs.

Vertex: End of an edge usually represented by a dot.

Walk: Movement along the dyads on a graph.

Windowing: Network based analysis of information used with computer based communication techniques like computer bulletins, newsletters or chat boards.

Zakah: A term that literally means "to purify". Offering zakah acknowledges that all wealth is from Allah and that setting aside a portion of one's possessions for those in need purifies those possessions.

APPENDIX J

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