An Implementation Model for Open Sources Evaluation

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ABSTRACT

Open sources contain publicly available information at a low cost. The amount of open sources information an individual has access to has increased dramatically in the 21st century. The question is how to evaluate these diversified open sources in producing intelligence- supporting the policymakers in making their decisions by providing them with the necessary information. To retrieve the actionable intelligence from huge amounts of open sources information, and to do source validation are big challenges.

In this study, an open sources intelligence (OSINT) integrated intelligence model is proposed, explained and compared with the traditional intelligence model. The contemporary intelligence analyst and his/her OSINT making process is explained. A case study of OSINT is prepared, analyzed and the analysis results are given.

ÖZ

Açık kaynaklar herkese açık, düşük bir maliyetle elde edilebilecek bilgi içerir. Bir kişinin erişebileceği açık kaynak bilgisinin miktarı 21. yüzyılda çok büyük bir oranda artmıştır. Temel soru bu çok çeşitli açık kaynakların, istihbarat -karar verenlerin karar verme sürecinde gerekli bilgi ile desteklenmesi- üretmede nasıl değerlendirilmesi gerektiğidir. Çok büyük miktardaki açık kaynak bilgisinden işe yarar istihbaratın elde edilmesi ve bu bilgi üzerinde kaynak doğrulaması yapılması temel problemler olarak göze çarpmaktadır.

Bu çalışmada açık kaynak istihbaratı ile bütünleştirilmiş bir istihbarat modeli önerilmekte, açıklanmakta ve geleneksel istihbarat modeli ile karşılaştırılmaktadır. Çağdaş istihbarat analisti ve analistin açık kaynak istihbaratı yapma süreci de açıklanmaktadır. Bir açık kaynak istihbaratı durum incelemesi analizi ve analiz sonuçlarının tartışılması da ayrıca sunulmaktadır.

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INTRODUCTION TO INTELLIGENCE

1.1 Basic Definitions

Intelligence is one of the government functions that supports the policymakers in making their decisions by providing them with the necessary information. The product produced by intelligence analysts in order to fulfill the policymaker demands is also named as intelligence. It is so crucial that what intelligence means for a government is the same as what food means for an organism. Without it, the government couldn't survive.

Intelligence is of two kind: continuous and discrete.

In the continuous intelligence case, the policymakers define the main concern areas for the government and demand steady information flow from the intelligence analysts regarding these areas. In forming the steady information flow; the intelligence analysts, in order to provide useful intelligence should be informed about the priorities and the attitudes of the government in the defined concern areas.

Discrete intelligence, on the other hand, is requested by the policymakers for a specific decision at a specific time and usually puts a time pressure upon the intelligence analysts' shoulders. Continuous intelligence whether delivered or not forms the background for the discrete intelligence.

Intelligence activities coordinated by the government form a recurring process which runs in both managerial and executive levels. The representatives of these levels are the policymakers and the intelligence analysts respectively.

The intelligence process is stimulated by the question or request of the policymaker. Whenever the request arrives to the intelligence analyst, the analyst comprehends the request, checks the resource capabilities of the agency and exploits some of the resources for the problem at hand. (The policymakers determine the total intelligence budget and its allocation over the intelligence issues thus do the resource management.) The analysis begins as soon as the analyst gets the request. Most of the time, the information repository in the agency is not sufficient to respond the

policymakers' requests so the intelligence analyst needs to collect more information via the various collection disciplines. The collection disciplines are the means by which one gets access to the information.

The basic groups of collection disciplines are the following:

- Technical collection disciplines.
  - Signals Intelligence-SIGINT.
  - Imagery-IMINT.
  - Measurement and Signature Intelligence-MASINT.
- Human Intelligence-HUMINT.
- Open Sources-OSINT.

The technical collection disciplines capture the information in transmission, are leaded by technological developments, and require special training and expertise for the personnel.

1.1.1 SIGINT

SIGINT is an extremely valuable capability, allowing the observation of activity through the content and pattern of signals and giving insights into intentions. SIGINT actually comprises several different types of intercepts. The term is often used to refer to the interception of communications between two parties, which is also known as communications intelligence (COMINT). SIGINT can also refer to the pickup of data relayed by weapons during tests, which is sometimes called telemetry intelligence (TELINT). Finally, SIGINT can refer to the pickup of electronic emissions from modern weapons and tracking systems, which are useful means of gauging their capabilities, such as range and frequencies on which systems operate. This is sometimes referred to as electronic intelligence (ELINT).

1.1.2 IMINT

Imagery intelligence refers to the production of images via airplanes, imagery satellites, radars etc. The utility of imagery is dependent on the size and the resolution

of the images. High resolutions are needed for precision-targeting purposes. IMINT is most often associated with indications and warning, and military operations.

1.1.3 MASINT

MASINT images are built by reflections from several bands across the spectrum of light, some visible, some invisible. It will become increasingly important in providing unique scientific or highly technical information contributions to the intelligence community. It can provide specific weapon identifications, chemical compositions and material content and a potential adversary's capability to employ weapons.[1]

Technical collection disciplines need common standards and protocols for the best utilization in an electronic base.

1.1.4 HUMINT

Human intelligence activities are what most people think about when they hear the word "intelligence". Human Intelligence (HUMINT) collectors (spies) are people carrying out covert action. HUMINT is needed as a major means of getting access to plans and intentions.

1.1.5 OSINT

Means obtaining intelligence from publicly available sources that are legally and ethically accessed and are available at low cost. OSINT is gaining greater emphasis since the number of exploitable open sources has increased after the Cold War and the intelligence products started to be based mostly on open sources thus providing efficient use of the resource capabilities of the intelligence community.

The collection disciplines, the capabilities, and their development are managed also by the policymakers. The exploitation of them for the given problem is determined by the intelligence analysts. The availability, the cost, and the reliability of the

[1] Mark M. Lowenthal, Intelligence From Secrets to Policy (USA: CQ Press, 2000) 61-66.

collection means vary so the intelligence analyst should make a balance in their usage, collect from as many sources as possible, producing an all-source intelligence product.

In the collection phase, the intelligence analyst should collect as much as he/she can evaluate. The collected materials become useful when they are read, sorted, classified and placed in the repository of the intelligence agency. Otherwise the collection resources are wasted. Before adding new information to the repository or doing an update, the analyst should make source validation by comparing the information from the different collection means.

All along the intelligence process, the intelligence analyst plays an active role, all the time communicating with the policymakers at the top and the infrastructure support personnel at the bottom. He/she executes the intelligence process and the success of the product-intelligence is determined by his/her analytical skills, experience, and expertise. The intelligence analyst produces the intelligence with his/her understanding, using his/her knowledge and wisdom and thus adds value to the information converting it into intelligence.

The intelligence product is presented to the intelligence customer-the policymaker. The policymaker evaluates the submitted intelligence and with his/her feedback to the intelligence analyst the intelligence process continues.

The key activities in the intelligence process can be listed as resource allocation, collection, analysis, and evaluation. All of these key activities except analysis should be dealt with by both the policymaker and the intelligence analyst. Thus there is a need for a transparency between the managerial and executive levels.

Analysis is the job of the intelligence analyst and prevails all along the process. The policymaker is the consumer of the intelligence effort and has a right to interrogate the intelligence product. For an intelligence product, an intelligence analyst should state the points where his/her estimations begin and end versus the collected material, the collection means, the source validation efforts. Thus the policymaker should be given a chance to make his/her own analysis with the given inputs executing the intelligence process on his/her own.

As a result, a good intelligence product is[2]:

- Timely,

[2] Mark M. Lowenthal, Intelligence From Secrets to Policy (USA: CQ Press, 2000) 93-94.

- Tailored: Responsive to the policymaker's request,
- Digestible: Brief, in ideal size for policymaker to read,
- Objective: Not biased by the policy views of the intelligence analyst,
- Clear regarding the known and the unknown: States the points of assumption, interpretation, estimation.

1.2 The Intelligence Process

From the old times to these days, a lot of states and empires have been abolished and new ones have emerged. There have always been conflicts, controversies and wars on Earth and always will. The key question is that in this never ending competition what states will be winners, what principles and strategies will be useful, how to guide the changes on Earth, is it enough to preserve the status quo?

Every government tries to find and shape its own route and support this route with the principles and strategies. A government cannot be successful in its goal unless it communicates with the other governments, it builds up the necessary relations. Isolation cannot be a solution in the global environment in the 21st century. A government should protect its integrity and the way of protection is to monitor the internal and external information flows and make interpretations and reach decisions, executing an intelligence process.

A government establishes an intelligence organization for coordinating the intelligence activities. The intelligence activities comprise a theoretical and an operational part. These two parts complement each other. The theoretical activities in the intelligence process are:

- Requirements Definition.
- Resource Allocation.
- Collection.
- Analysis.
- Production.
- Evaluation.

Counterintelligence and covert action form the operational part. Counterintelligence and covert action represent defensive and offensive operations respectively.

1.2.1 Counterintelligence

The counterintelligence function involves protecting the country, as well as intelligence agencies, from the activities of foreign intelligence services.

Counterintelligence is an integral part of the entire intelligence process. All agencies that undertake intelligence collection, whether through human or technical means, must be constantly on guard that what they are collecting is genuine. This requires continuous evaluation of their sources as well as the information gathered from them.[3]

Information verification and source validation have become more problematic with extensive use of open sources in collection. Although the amount of information available via open sources has increased dramatically, the usable part has remained the same.

Information verification and source validation activities are performed along the collection and analysis phases of the intelligence process. During the collection phase, the co-utilization of various collection disciplines provides a verification mechanism and the analysis helps to find the anomalies in the collected material. Thus, counterintelligence activities go in parallel with the collection and analysis work of the intelligence process.

1.2.2 Covert Action

Covert actions (as distinguished from the covert collection of information) are used to influence political, military, or economic conditions or situations abroad, where

[3] "Preparing for the 21st Century: An Appraisal of U.S. Intelligence," Commission on the Roles and Capabilities of the United States Intelligence Community, 1996, <http://www.access.gpo.gov/su_docs/dpos/epubs/int/index.html>.

it is intended that the role of the government will not be apparent or acknowledged publicly. [4]

The use of such operations is an outgrowth of policymakers' need for so-called "quiet" and "middle" options (that is, tools that are more powerful than diplomacy but short of using military forces) to counter dangerous adversaries.[5]

Covert actions are proactive measures performed by the intelligence organization and are offensive. Offensive actions in nature violate the moral rules and in democratic governments need appropriate reasoning, proof for public approval.

There are two legitimate reasons for carrying out an operation covertly rather than overtly. One is when open knowledge of responsibility would make an operation infeasible. The other reason for carrying out an operation covertly is implicit, but just as important: to avoid retaliation or control escalation. [6]

When an intelligence organization includes covert action to its intelligence cycle, it should take into consideration:

- The strategies to keep the secrecy of the operation,
- If the secrecy couldn't have been kept, the rules for deniability,
- If the deniability fails, the ways to convince public of the validity of the operation performed.

The range of covert action options can be summarized as follows:

- Paramilitary Operations
  Providing military support with a foreign group or country in order to support the national interests in the region of that group or country.
- Propaganda
  Utilization of media to construct an image or opinion that is in support of the foreign policy.

[4] "Preparing for the 21st Century: An Appraisal of U.S. Intelligence," Commission on the Roles and Capabilities of the United States Intelligence Community, 1996, <http://www.access.gpo.gov/su_docs/dpos/epubs/int/index.html>.
[5] Bruce D. Berkowitz, Allan E. Goodman, Best Truth Intelligence in the Information Age (New Haven and London: Yale University Press, 2000) 124-129.
[6] ibid 129-130.

- Political and Economic Influence Operations

  Trying to change the political and economic conditions abroad in support of the foreign policy.
- Assassination

  The killing of a prominent, hostile person by surprise attack for political reasons.
- Coups

  Advanced versions of political influence operations which cause the collapse of the existing government by the opposition forces.
- Information Warfare

The intelligence process can be depicted as an information flow occuring in the different analytical levels of a target organization:[7] (Figure 1.1)

[7] "IC21: The Intelligence Community in the 21st Century," 1996, U.S. Congress House Permanent Select Committee on Intelligence, <http://www.access.gpo.gov/congress/house/intel/ic21/ic21_toc.html>.

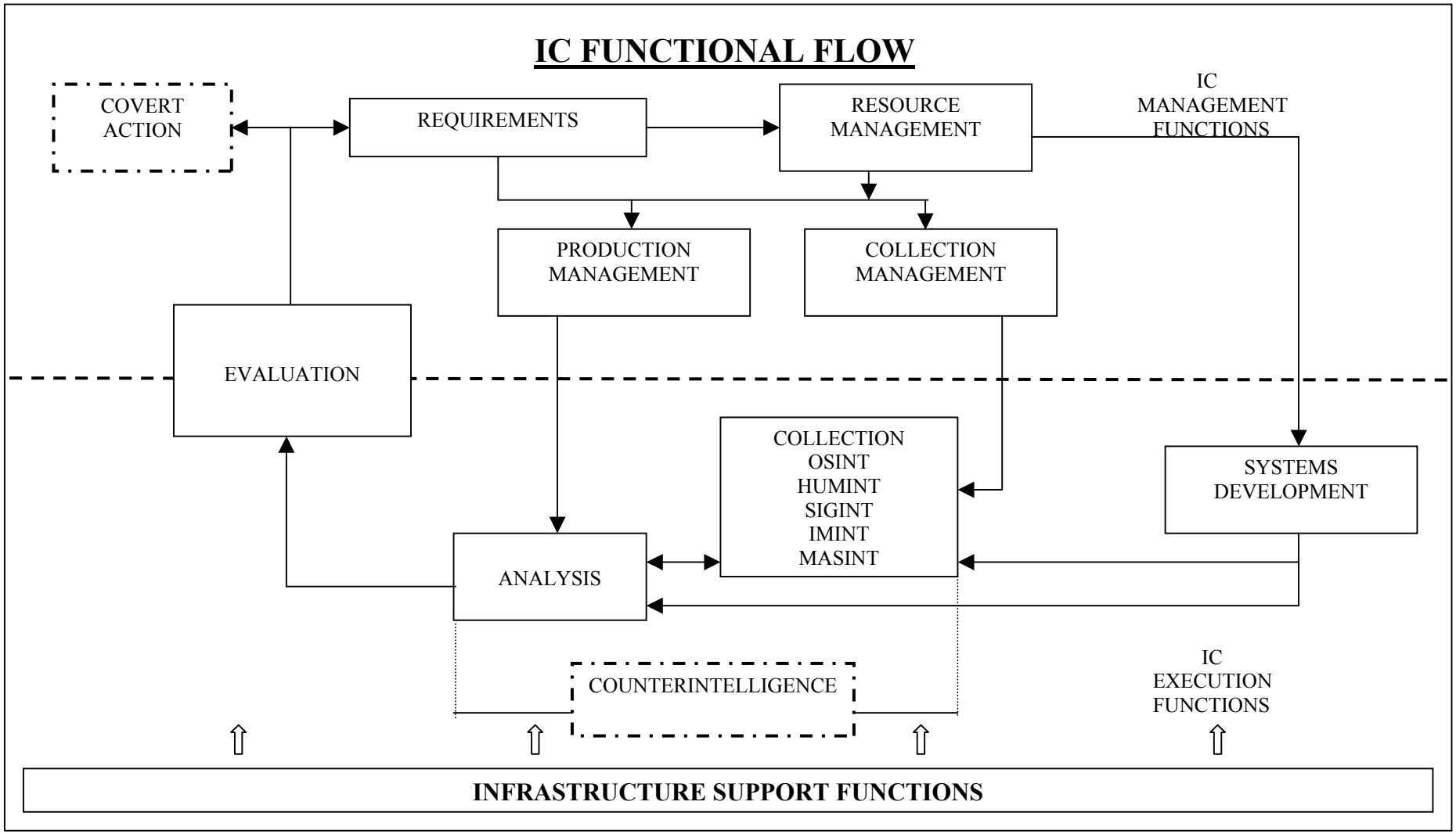

Figure 1.1 The intelligence process information flow.

Chapter 2

INTELLIGENCE ANALYSIS

2.1 Definition

Analysis is defined as

- The separation of an intellectual or material whole into its constituent parts for individual study.
- The study of such constituent parts and their interrelationships in making up a whole.
- A spoken or written presentation of such study.[8]

An analysis work starts with a goal in mind. As for intelligence analysis, the government strategy, the policy goal in the given issue is the driving factor of the analysis. Intelligence analysis is division of an intelligence issue into its small parts and the realization of the relationships between these small parts and the issue itself, the cause and effect links. In short, it is the effort of extracting the nature of intelligence issue.

The natural response to the policymakers as a result of their intelligence requests is the report prepared by the intelligence analysts. In preparing a report, intelligence analysts do analysis on the collected material and this analysis should add value to the collected material.

The consumers of the reports prepared by the intelligence analysts are the policymakers and they should see the contribution of the intelligence analysts to the intelligence product and appreciate the added value to the collected material provided by intelligence analysts.

Intelligence analysts are the producers of intelligence, the brain team of the intelligence process. Within the intelligence organization hierarchy and in different

[8] The American Heritage® Dictionary of the English Language, 2000, <http://www.bartleby.com/61/94/A0279400.html, Fourth Edition>.

departments, there are intelligence analysts with different backgrounds, different expertise fields, different analytical skills and experiences.

The mission of the intelligence analysts is all the time to add value to the collection output. It's a very difficult mission because in the international dynamic environment, the main concern-mission areas of the intelligence tend to have new requirements for analysis. In addition to the changes that have taken place in the requirements for analysis in traditional missions, the intelligence community is faced with some requirements for analysis that are almost entirely new.[9]

The causes of this great change in the intelligence work can be stated as follows:

- With the collapse of the walls between the countries, the blocks, market economies have become dominant in the world and economic dependencies have become more important. A global economic awareness has arisen.
- Knowledge has become the most important asset in the world, communication facilities increased, computer networks have been constructed and computer-based systems have been common. However, these developments have not become homogeneously on Earth. The North America and Europe have been the leaders. The gap between the developed, developing and under-developed countries has expanded, the diversities have increased.
- The increased diversities, the welfare differences on Earth have made the ideological movements stronger.
- The new technological developments, the relatively inexpensive ways of communication, travel have made the individual more capable to mobilize and the developments in information technology have created a new type of warfare, information warfare-*the activities undertaken by governments, groups, or individuals to gain electronic access to information systems in other countries either for the purpose of obtaining the data in such systems, manipulating or fabricating the data, or perhaps even bringing the systems down, as well as activities undertaken to protect against such activities*[10], the

[9] Bruce D. Berkowitz, Allan E. Goodman, Best Truth Intelligence in the Information Age (New Haven and London: Yale University Press, 2000) 111.
[10] "Preparing for the 21st Century: An Appraisal of U.S. Intelligence," Commission on the Roles and Capabilities of the United States Intelligence Community, 1996, <http://www.access.gpo.gov/su_docs/dpos/epubs/int/index.html>.

developments in medicine and medical informatics have provided the new ways of constructing weapons (chemical and biological) in addition to nuclear ones.

- Media has become a very effective power and countries that control the main communication channels have manipulated media to support their interests.
- One problem for example, a disease in any part of the world raised a global concern because of its spreadability.
- Threat types have become much more variant.
- The public consciousness has raised, democracies have increased, the governments started to be strongly interrogated by the public and the number of exploitable open sources have increased.

Therefore, in our era,

- new approaches to analysis should be developed,
- intelligence analysts' qualifications should be redefined,
- intelligence analysis missions should be redefined.

2.2 Contemporary Intelligence Analysis & Analyst

Contemporary intelligence analysis differs from the old one in some ways.

In the first place, there has always been an issue classification in the intelligence community and a hierarchical organization of intelligence analysts. When the policymaker determines an intelligence issue to be analyzed, he/she gives the job to the intelligence analyst responsible for that issue and a top-down analysis process begins. In the top-down analysis, the analysis job is separated into sub-tasks and every sub-task is accomplished by the intelligence analyst who is responsible for that sub-category. At the end of the process, the analysis tasks are joined from the bottom to the top to form the issue analysis product. In the past, intelligence organization was not capable to store all the documents from the bottom to the top and almost in every case the top-down analysis should occur repeating itself many times. Today, thanks to the computerized systems, due to the huge storage capabilities and short data access times, the intelligence analyst responsible for the given analysis issue can apply to the documents

previously produced by the sub-level intelligence analysts to have the background information, he/she contacts the sub-level intelligence analyst when necessary and the intelligence analysis job can be performed in a relatively short time thus utilizing less resources. However, this advantage can be gained only if the intelligence analysts are computer literate, at ease using the electronic search facilities.

Electronic open sources should be made reachable directly by policymakers giving the policymaker the chance for making his/her own intelligence analysis on the given intelligence issue and for verification purposes also. They must be computer literate as well.

Secondly, the available open sources and services outside the intelligence community have dramatically increased and intelligence analysts should find a way to provide the information flow from these open sources and services to the intelligence organization. Thus in the contemporary situation open sources should be exploited as much as possible.

Additionally; today, intelligence issues have become multi-dimensional, closely related to the other intelligence issues. Thus, in evaluating an intelligence issue, one should make the evaluation taking into consideration as much other issues as possible. For a given issue, there should be a quite large database of related intelligence issues. In order to effectively handle this multi-issue problem;

- Horizontal (issue to issue) information flow should be strongly supported,
- Better-qualified intelligence analysts should exist. (Have more than one expertise field.)

In our international dynamic environment the intelligence analysts must **be able** to sense the environment, the policymaker needs and keep track of the changes. The relationship between the intelligence analysts and the policymakers should be much closer. The required qualifications for an intelligence analyst are listed below:

2.2.1 Job Qualifications of an IntelligenceAnalyst

Has wisdom

Knowledge of: History, geography, international relations, law, mathematics, geometry, languages, information technology, psychology, communication, political science, religion, forensics.

Ability to: speak languages, foresee, use emotional intelligence[11], make inferences, deductions, inductions (analytical thinking).

Education: (university) information technology, international relations, law, political science

Useful leisure time activities: Puzzle making, chess, speed reading

The countries define their intelligence missions in order to provide the intelligence analysts with the purpose they need in their analysis work. The intelligence missions are common all over the world. The identification of them and the accomplishment methods make the distinction.

Intelligence missions can be summarized as follows:

- Support to Military Operations

  Military power is a guarantee for a country and is used when a conflict exists and cannot be solved by the diplomatic practices. (A high-intensity conflict that threatens the main building blocks of a particular government.) Military operations need detailed strategic and tactical planning and intelligence support helps to follow the strategic plan. Through the intelligence services, a military power monitors the battlefield, the opponents etc. The arrival of the obtained intelligence to the target bodies in a timely fashion with its integrity increases the possibility of success.
- Political Intelligence

  In order to keep the status quo or change it to the advantage of the government, a government should monitor world politics, make future predictions and take

[11] Comprised of personal intelligence skills such as self-conscience, managing the state of mind (character), self-motivation, empathy and management of relationships. (Daniel Goleman)

appropriate measures to influence events, happenings to its benefit. (Covert action)

Making future predictions for different political regimes are also very different. Political developments in authoritarian states are driven by a relatively small circle of leaders, most of whom usually have similar backgrounds. Democracies often have more complex internal politics. Rapidly changing coalitions and shifts in popular opinion can be difficult to predict. [12] In addition to this, it's difficult to track counter-regime groups, terrorists etc.

- Economic Intelligence

  Economic power is the indicator of all the other power bases and is the determining factor of having a dominant foreign policy execution. Due to open market economies, import-export relationships, all the economies are tied together and dependent on each other. Therefore, there is a need to keep a global economic balance. To accomplish this, economic intelligence is required. Also intelligence organizations should detect industrial espionage, corrupt or illegal practices in international trade, and critical technologies with military applications.[13]

- Support to Monitoring of Treaties and Other Agreements

  Countries sign international treaties and accept agreements to control the adversaries' behavior by obeyed rules or protect itself from the potential enemies and have some allies. Once an agreement has been reached, there should be a control mechanism that checks whether any side is acting opposed to the accepted rules. In some cases, one contractor does not break the accepted rules but tries to make a deception. Thus intelligence analysis is needed for monitoring the treaties and agreements. Nowadays, the international treaties and agreements are the bodies that act in favor of the stronger contractors unlike the treaties between the two poles in the Cold War Era.

- Collecting and Analyzing Environmental Information

  Environmental threats and failures in any part of the world may result in similar environmental situations in other parts and also can have political and economic

[12] Bruce D. Berkowitz, Allan E. Goodman, Best Truth Intelligence in the Information Age (New Haven and London: Yale University Press, 2000) 106.
[13] ibid 111.

consequences that affect the other countries as well. As a result, analysis of the environmental information emerges as a new intelligence mission.

- Collecting and Analyzing Information on World Health Problems

  Intelligence reports should be prepared about world health problems so that some preventive measures can be constructed against the diseases and the spread of the diseases can be blocked.

- Collecting Information about Information Warfare

  Information warfare has become a very serious threat in the 21st century. Intelligence analysis is required for measuring the dependency of the country to the computerized systems, identifying the vulnerable points of the infrastructure, applying security mechanisms and implementing the counter activities when necessary.

Chapter 3

OPEN SOURCES INTELLIGENCE

3.1 Open Sources Intelligence and Information Society

Open sources intelligence has started being used as an intelligence term with the advent of information technologies. Information technologies and huge communication facilities have facilitated the possibility of one individual/one organization to reach information; the number of open sources and services available to any consumer has dramatically increased.

In order to understand open sources intelligence and the importance of it in the 21st century, it is useful to look at the information creation, use and transfer ways in the past and present.

The nations have gone mainly through three periods and each period represents a different kind of society. The societies can be stated as agrarian society, industrial society, and information society.

In the agrarian society, the main possession was land and people used to cultivate it. Thus, people provided the main source of energy. Hand-made products were common, the production was in limited numbers and varieties. The knowledge had been created by individual experience spending years of time with the masters. There has been restricted distribution of knowledge mainly for two reasons:

- The knowledge masters were reluctant to transfer their knowledge immediately, the knowledge retrieval was a very long process.
- The only way of knowledge transfer was through face-to-face communication. Because of restricted travel opportunities, people used to live in restricted environments. The knowledge transfer was limited with the environment.

This restricted distribution of knowledge blocked social and technological progress in the agrarian society.

The agrarian society was followed by the industrial society. The industrial society introduced the steam power and the power of electricity to the life. These new forms of energy had enabled the people to arrive in distant locations in shorter times at a lower cost; the big cities had been formed, the nations had founded states, mass production of various goods had been started and public infrastructures had been constructed. As a result of the new sources of power, a lot of people had lost their jobs that depended on human labor. With these optimized conditions, the concept of science was born. In the industrial society science created knowledge and education distributed it. Two different groups appeared as scientists and educators. Science enabled the scientists to transform their knowledge into the written material and with the invent of the printing house these materials had been reproduced and the books had been the main materials of education.

As the last period, the information society is characterised by the computers and telecommunications. With the information revolution, the information systems have started to be based on computers, the communication facilities have dramatically increased, the national boundaries have started to disappear, the globalization appeared as a new trend, global corporations have been founded, economic dependencies have increased. Science has continued to create knowledge; education opportunities have been greatly improved. Distant education has been an alternative, electronic documents and software started to contest with the printed material in education. Internet dominated the education world.

Most importantly, computers deprived humans of their monopoly on intelligence. Computers are incomparable in power for performing activities that are deterministic and are explicitly defined. However, they do not have decision-making skills; lack the ability to create knowledge. Therefore, creativity alone defines an individual's place in the information society. [14]

The information society has introduced the openness concept to the world. Open sources and services have been available with little cost. Thus, the intelligence analysts lost their role as the main intelligence collectors because the sources and services reaching the policymakers surpassed that of the intelligence analysts. Effective and efficient evaluation of open sources have become important, the added-value introduced

[14] Wojciech Cellary, "The profession - The profession's role in the global information society," IEEE Computer 36.9 (Sept. 2003).

to the collected material defines the intelligence analysts' place in the new intelligence organization and the intelligence analysts have required a new role as the manager of the all-source collection process.

3.2 Definitions

After creating knowledge, people transform it into different forms in order to ease the knowledge use and transfer. The forms of knowledge are: [15]

- Hard copy – on paper, the medium most people are used to, and poor for quick search and retrieval purposes.
- Microfiche - the medium used in the patent and archival worlds.
- Electronic form and software - relatively low cost and very suitable for diverse storage and retrieval requirements. It's the principal medium of the information age.
- Human knowledge – the main source which provides real-time access to the other mediums--the human expert responsive to tasking can rapidly collect, process, and disseminate essential information from the other mediums, on demand.

Knowledge creation is a very resource-consuming task and done by humans as an individual or a group. The people have different motivations for creating knowledge. Self-satisfaction, money, serving the society; are among them. If the knowledge request comes from the external bodies such as the intelligence organization, knowledge creation work can be described as dependent. Academicians generally produce the independent knowledge.

The access to the knowledge can be made restricted in order to ensure that it is transferred to only those who have paid for it and/or prevent misuse and/or abuse of it. "Need to know" rule is commonly used to define the access rights. Open and closed accesses are the two ends of the access spectrum.

[15] Robert D. Steele, "Open Source Intelligence: Professional Handbook 1.0," Proceedings of the Fifth International Symposium on Global Security & Global Competitiveness Open Source Solutions Sept. 1996, Appendix C 8-9.

The use and transfer of the knowledge require some expenses to be paid. In the knowledge world as well "you get what you pay for".

The credibility, reliability, and origin of the knowledge are also concerns for the knowledge retrievers. If there is enough information of these concerns then the knowledge source can be described as known. Otherwise it remains as unknown.

The organization of knowledge strongly affects its use. Well-organized, structured knowledge has more service than the unstructured one.

Ethical and legal concerns, international obligations have also effect on knowledge use and transfer. The knowledge retrieval methods are between least intrusive to peoples' freedom and privacy and highly intrusive ones.

The risks taken to get and use knowledge, and the nature of the channels used (overt/covert) for having the knowledge are very important concerns of the knowledge world as well.

Thus, the above stated the dimensions of the knowledge sources could be summarized as below:

- open to closed access,
- cheap to expensive,
- unknown to known,
- independent to dependent,
- unstructured to structured,
- low risk to high risk,
- least intrusive to highly intrusive,
- overt to covert.[16]

By taking into consideration the above dimensions, information is grouped into five major categories: (Figure 3.1)

[16] Jason L. Brown, "Open Source Information and the Intelligence Based Decision Model," Optimising Open Source Information Conference 7-8 Oct. 1998, 9-10.

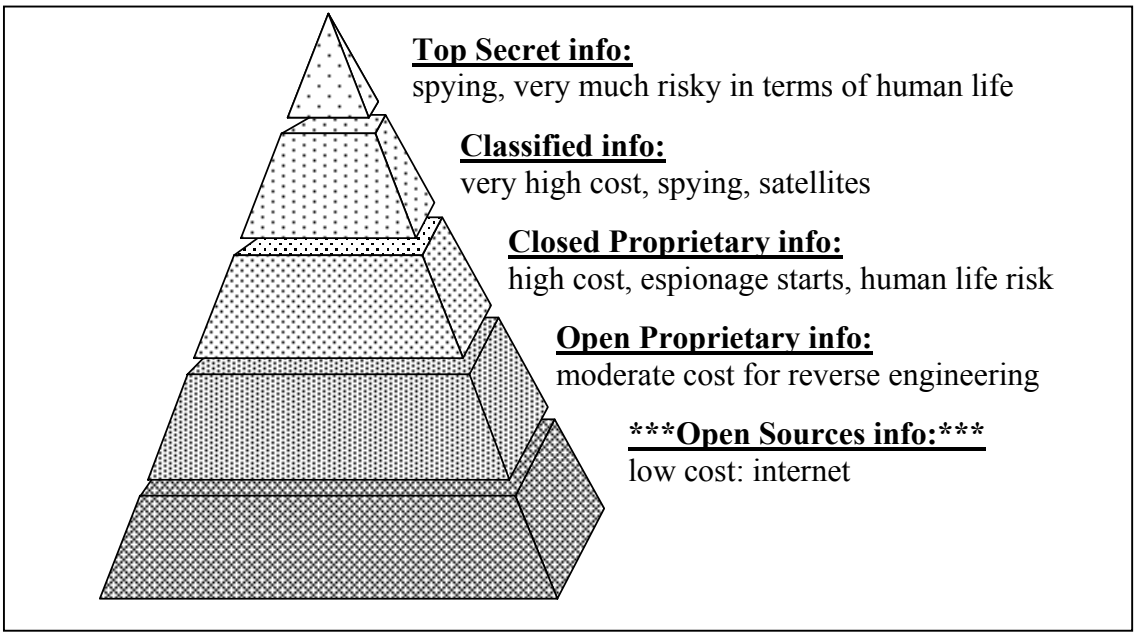

Figure 3.1 The information pyramid representing the five information categories.

- Open Sources Information (OSI) is legally and ethically available, at a low cost. It contributes the understanding of the problem, tells the current situation and the context. Evaluation of the OSI in the first place for the intelligence collection provides a good background and helps the effective and efficient tasking of the other, more difficult collection disciplines saving much of the resources.
- Open Proprietary Information, can be legally and ethically obtained, but requires a moderate cost to commission reverse engineering studies to extract the information from the product. This is a good alternative to riskier and higher cost espionage intended to steal the information from within the target organization. Examples: buying a French missile to study the missile guidance software and hardware; buying Russian imagery to calculate their overhead technical capabilities.
- Closed Proprietary Information is only available from within the secure areas of the target organization, and requires espionage, at high cost, to obtain. Examples: stealing source code for major computer applications; stealing designs for delicate machinery used to create scientific & technical instruments.

- Classified information, collected by spies and satellites, is very expensive, and in the cast of Human Intelligence (HUMINT), often very risky. It does, however, have a very special value to the all-source analyst as its accuracy and reliability is high--this is especially the case with Signals Intelligence (SIGINT) products.
- Top Secret Information is the peek point of the information pyramid. It represents the most reliable and expensive information obtained through the riskiest, the most intrusive, and covert ways.[17]

The official Open Source definition comes from the US Director of Central Intelligence Directive dated 1 March 1994 as follows:

"Open source information is publicly available information, including official yet unclassified information of limited public distribution or access. Open source information also includes any information used in an unclassified context without compromising a country's national security or intelligence sources and methods. If the information is not publicly available, certain legal requirements relating to acquisition, retention, and dissemination may apply." [18]

Open sources intelligence covers the open sources information.

Open sources intelligence has been introduced as a separate collection discipline and in producing an intelligence product; it should be the first discipline to exploit for providing the baseline. Actually, at the collection step, the information gathered from the open sources and services is not the intelligence yet, it is open sources information that has been clipped from various sources, organized and distilled but still generic, not responsive to the specific policymaker requests.

Open sources information is transformed into open sources intelligence by means of the analysis work, without analysis it is impossible to describe it as intelligence that is responsive to the policy-maker requests. In making the analysis, in order to present a reliable, an accurate, and a tailored product, the intelligence analysts should do source validation. After the source validation, open sources intelligence

[17] Robert D. Steele, "Open Source Intelligence: Professional Handbook 1.0," Proceedings of the Fifth International Symposium on Global Security & Global Competitiveness Open Source Solutions Sept. 1996, Chapter 2 2-3.
[18] "November 1995 - OS-Pro List Monthly Topic," Open Source Quarterly 1.1 (1995), <http://www.osint.org/osq/v1n1/defining.htm>.

becomes validated open sources intelligence. One important thing here is that although it is validated **open sources intelligence**, the intelligence analysts utilize all kinds of sources and services not only the open ones in the validation task.

Policymakers' job requires making the best future predictions in order to direct the policy effectively. Best future predictions are the natural consequences of the good intelligence products, good intelligence jobs. An intelligence job tries to reveal the invisible part of an issue by the help of the visible, to find the unknown by means of the known things. Working on the visible part, going over the known things require a good strategy as well. In shaping this strategy, it's a good starting point to utilize the open sources & services for understanding the issue, the problem at hand and thus to determine what to collect, from where / whom, and when.

Low-cost open sources intelligence is the tool for planning and managing the utilization of the other expensive collection disciplines and thus the scarce resources. Dr. Joseph Nye likens open sources to the outer pieces of the jigsaw puzzle, without which you can neither begin nor complete the puzzle. Classified sources, however, were essential to fill in the hardest to understand middle of the puzzle, and to complete the picture.

The role of open sources intelligence in the final intelligence product is an important measure in evaluating the importance of open sources intelligence in today's intelligence environment. The following figures strengthen the position of open sources intelligence in the all-source intelligence work:

> At the Central Intelligence Agency, the general rule of thumb is that open source data comprises **40%** of the final all-source intelligence product.
>
> Within the Defense Intelligence Agency, the general percentage, according to one graduate thesis survey, is **30%**.
>
> In Canada, according to Mr. Ward Elcock, the director of the Canadian Security and Intelligence Service, open sources comprise **80%** of the final all-source product. [19]

[19] Robert D. Steele, "Open Source Intelligence: Professional Handbook 1.0," Proceedings of the Fifth International Symposium on Global Security & Global Competitiveness Open Source Solutions Sept. 1996, Chapter 1 11.

3.3 Open Sources

The requested knowledge for a given intelligence problem resides in one of the following objects that represent the information continuum (knowledge terrain) in a country:

- Schools and Universities,
- Libraries,
- Businesses,
- Private Investigators and Information Brokers,
- Media,
- Government,
- Intelligence Community,
- Defense.

Today, intelligence analysts have good capabilities in terms of the range of open sources. (listed below) [20] The electronic search capabilities have greatly increased the speed. The Internet, commercial online services, and limited access electronic databases are the main electronic open sources.

- **The Internet** is the global network of computers and is reachable by millions of people around the world and the connection fees are being less. The main problem of the free Internet environment is that there is no common accepted organization for the information, there is no global index and thus there are no efficient and effective search facilities. As a result of these poor search facilities, after a search you're faced with huge amounts of information that are impossible to process and exploit. Although it seems to be free, all the exclusive information providers are available if you have a valid username and password for their systems. They require this in order to be certain that the information is not serving the malicious purposes, to form the profiles of people using the system, and to ensure that the system is used

[20] Robert D. Steele, "Open Source Intelligence: Professional Handbook 1.0," Proceedings of the Fifth International Symposium on Global Security & Global Competitiveness Open Source Solutions Sept. 1996, Chapter 2 3-4.

by only those who have paid the subscription fees. The reliability of the information on the Internet is a big problem as well.

- **Commercial online services** are knowledge banks of different kinds of issues, are accessible online, and require payment. Some are good for academic publications, some are useful in trade publications, others are helpful in specialized technical areas etc. Therefore, it's important to identify the right services for the specific issue at hand.
- **Limited access electronic databases** are owned by schools and universities, libraries, industrial associations and businesses. They are available in the boundaries of the target organization thus special contact is necessary for reaching the information and identification of these databases require experience. In short, overt human contacts are the best means of identifying pertinent databases that are not in the public domain but are accessible.
- **Published literature and "grey literature "** (limited edition publications) represent relatively old material and are hard copy. In general, they are published in the native language of the target country and thus analysts should overcome the foreign language problem at first.
- **Speeches and briefings** are oral and are ways of acquiring the timely knowledge. Speakers' body language helps the evaluation of the information very much. The written versions of them can be accessed through the media and other organizations.
- **Direct interviews** are oral as well and have the same advantages as speeches and briefings. More, the analysts are free in asking their key questions and guiding the communication but can be costly.
- **Sponsored external research** is requested to take the benefit of the private expertise and to overcome the foreign language problem. Private investigators and information brokers are the people who perform the search and identification of the key personalities for the given topic requires experience and good human contacts as well.

Chapter 4

OPEN SOURCES INTELLIGENCE VS. THE TRADITIONAL INTELLIGENCE MODEL

4.1 The Traditional Intelligence Model

New dynamics in the 21st century have introduced mainly two distinguishing influences to the world community as well as the intelligence community. The first one is the amount of information exposed and the second one is the time pressure upon the action. Open sources intelligence is the new concept introduced for dealing with this new situation. It should recommend ways to handle the information flood and to be successful in finding the needle in the haystack. Additionally, it should respond just-in-time.

The traditional intelligence model was created in a period in which the information sources were scarce, the threats monolithic, and the actions, the responses not immediate. The exchanges between the intelligence collaborators were relatively restricted, linear when it's compared with today's huge, diverse communication facilities. The intelligence model is bureaucratic in nature. Its construction is based on the Max Weber's Theory of Bureaucracy.

In his theory of bureaucracy, Max Weber defines an organizational structure to maximize the efficiency, calculability, and predictability; and he terms it as bureaucratic. Weber identifies three key features of bureaucratic organizations. Firstly, bureaucracies have a formal and unambiguous hierarchical structure of power and authority. Secondly, bureaucracies have an elaborate, rationally derived and systematic division of labor. Thirdly, bureaucracies are governed by a set of general, formal, explicit, exhaustive and largely stable rules that are impersonally applied in decision-making; moreover, all decisions and communications are recorded in permanent files and such records are used to refine existing rules and derive new ones.

The key features of Weberian bureaucracy can be summarized as;

- hierarchy,
- division of labor,

- rigidity of rules. [21]

The ability of the intelligence community to absorb the new demands, be responsive to the policymaker in a timely manner is the main issue. Some of the other issues can be declared as:

- Can a highly stable, static intelligence organization can satisfy the requests of today's and future's dynamic environment?
- Does it need to be reorganized or some additions and/or corrections are necessary and/or sufficient?
- What it means to include the open sources intelligence to the intelligence cycle? How to make the integration?
- With the open sources intelligence is it necessary to reevaluate the model?

In stating the above queries, it is assumed that the intelligence community works according to the Weberian bureaucracy. Is it exactly that? Are there any flaws in the bureaucratic flows? It seems that the intelligence organizations should interrogate this point in the first place.

In the intelligence community, the bureaucratic model manifests itself in two central concepts. The first concept is that of the "intelligence cycle".[22] Every intelligence product is the result of a cyclic process. The execution of this cyclic process is directed by well-established rules. These rules define the phases, the staff in charge in each phase, and the missions of the staff. Everything is already planned and static in this execution. Each phase has linear relationships with the preceding and the succeeding phases.

The second concept the intelligence community borrows from the classical bureaucratic model is the "coordination process". [23] The coordination process is based on the concept that "the intelligence product represents the corporate view of the

[21] Aby Jain, "Using the lens of Max Weber's Theory of Bureaucracy to examine E-Government Research," Proceedings of the 37th Hawaii International Conference on System Sciences 2004, 2-3.
[22] Bruce D. Berkowitz, Allan E. Goodman, Best Truth Intelligence in the Information Age (New Haven and London: Yale University Press, 2000) 68.
[23] ibid 70.

intelligence organization" and an exhaustive review process should be executed along the hierarchy from the bottom to the top before the submission of the final product.

The issue of whether the intelligence community should express an "individual view" or a "corporate view" raises the broader issue of whether coordination improves intelligence, and whether organizational consensus is a good indicator of objective truth. The traditional model assumes that coordination improves analysis. It assumes higher levels of authority are more likely to be correct, and that greater participation by more experts and more agencies is more likely to reveal the truth. [24]

One of the shortcomings of the bureaucratic model is related to its hierarchical structure. In the hierarchical structure the intelligence consumer can communicate only the intelligence analysts at the sub-level. The intelligence consumer communicates the requirements of the intelligence task only one top analyst and this top analyst propagates the requirements to the sub-level analyst and this propagation goes down like this. One flaw in this communication is that if the top analyst fails to evaluate the correct intelligence requirements, there is no chance for a responsive, tailored intelligence product. The other flaw is that linear propagation of the intelligence message can cause many misunderstandings and this weakens the possibility of a good intelligence product.

The people at one level in hierarchy have direct relationships with only two levels: one sub and one top. This communication model is not satisfying and does not make use of today's great communication facilities.

Additionally, hierarchies are difficult to manage. The criteria that are to be used to promote individuals to the top levels should be well established and fair.

In the intelligence organization, the colleagues that are at the same level in the hierarchy in competition with each other and each one tries to have his/her view accepted in the final intelligence product because of his / her ego and / or in order to get promoted. If there is no promotion or other kind of reward then there is no stimulating factor for people to work.

In forming the hierarchical structure of an intelligence organization people are placed in the hierarchy according to their expertise fields and experiences. Thus, when

[24] Bruce D. Berkowitz, Allan E. Goodman, Best Truth Intelligence in the Information Age (New Haven and London: Yale University Press, 2000) 95.

an intelligence task is defined, the issue experts for the defined task are assigned to the work.

This means that for the intelligence tasks within the same issue, the same people work and coordinate the final intelligence product. This highly static grouping of people for the specific issues violates the creativity and is not suitable for serving against multi-player threats.

4.2 OSINT Integrated Intelligence Model

In constructing an intelligence product, open sources intelligence are complemented with the other classified, more specialized capabilities. In this integration, some key questions are:

- The open sources exploitation facilities should be distributed evenly along the hierarchy?
- Which individuals in hierarchy can decide to task the classified, more specialized capabilities after evaluating the open source product?

The inclusion of the OSINT to the traditional intelligence model does not change its bureaucratic nature, a revision can be useful.

Firstly, the collection tasking is influenced. With the low-cost open source collection capabilities, intelligence analysts can be set more free to task the necessary collection, the external control over collection should be loosened. In fact, all people along the hierarchy should be their own master in open source collection tasking. Open sources exploitation facilities should be distributed evenly at all the hierarchical levels. Collection management for open source collection loosens.

The distinction between collection and analysis weakens. The introduction of OSINT makes the intelligence analyst an intelligence collector as well. He/she no longer depends on others for collection. He/she only can request help in contacting the information sources he/she identifies. The collaboration and communication should be developed between the co-workers for identifying the information sources and having good contacts with them.

Source validation is positively affected. Declaration of the sources becomes less problematic. The knowledge of the utilized sources makes the intelligence consumers more comfortable. Reliability of the sources is shared and this meta-information becomes common among the intelligence analysts.

In order to maximize the benefits with the OSINT:

The development of private information providers should be supported and the intelligence organization should take the benefit of the private expertise when necessary.

There should be collaborative development between the private information brokers and the intelligence analysts. Collaborative development provides the efficient and effective use of the resources. The principle is that if the intelligence agency can get the required open source intelligence on-time and at a very low cost compared to in-house production, it should contact the private information brokers. In this collaboration, the intelligence community saves part of its resources and the broker earns money in return to continue its business.

The intelligence consumer should have diversified sources of information. Information, intelligence self-reliance (dependance on the in-house open source capabilities) is not relevant. Direct contact with the information brokers, sources is required. Everyone in the intelligence hierarchy should be free to exploit the open sources and select its own customized desktop, working environment. There should be a technology tracking personnel that give advice to the intelligence analysts about the new information services, customized information retrieval choices, opportunities.

The revision on the traditional intelligence model can be summarized as follows:

Hierarchies are unavoidable. Every organization on Earth has a top decision-maker and this means that at least two levels of hierarchy are present. Hierarchical structures are static in nature, some dynamism should be introduced. Purely static and purely dynamic solutions are not appropriate for the organizations involving people.

There is a tradeoff between these two extremes. The following example pairs are good indicators of this tradeoff as well:

- Central economy vs. market-based economy
- Centralized government vs. decentralized system
- Public vs. private sector

- Corporate vs. individual
- Traditional programming vs. extreme programming

Organizations in traditional bureaucracies have an incentive to focus and exclude. Companies in the competitive market, on the other hand, have an incentive to search and expand. [25] These two powerful incentives should be combined in a common model. The key feature of this model can be stated as autonomy. Giving individuals great autonomy-search and expand facility and arriving at judgments at the corporate level by focusing and excluding.

The classical intelligence hierarchy is shown below (Figure 4.1) as a multi-level tree:

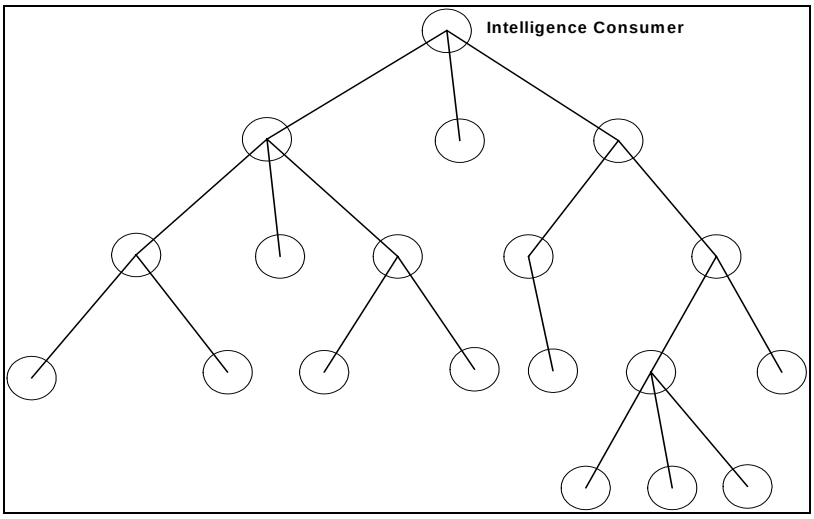

Figure 4.1 The traditional intelligence hierarchy.

After the definition of an intelligence task by the intelligence consumer, the intelligence analysts to be worked on the defined intelligence task are selected. The selection should be made randomly out of a defined subgroup of people. In forming this subgroup there should be a balanced mixture of people from the different hierarchical level of the intelligence organization. (Figure 4.2-The selected members are highlighted)

[25] Bruce D. Berkowitz, Allan E. Goodman, Best Truth Intelligence in the Information Age (New Haven and London: Yale University Press, 2000) 84.

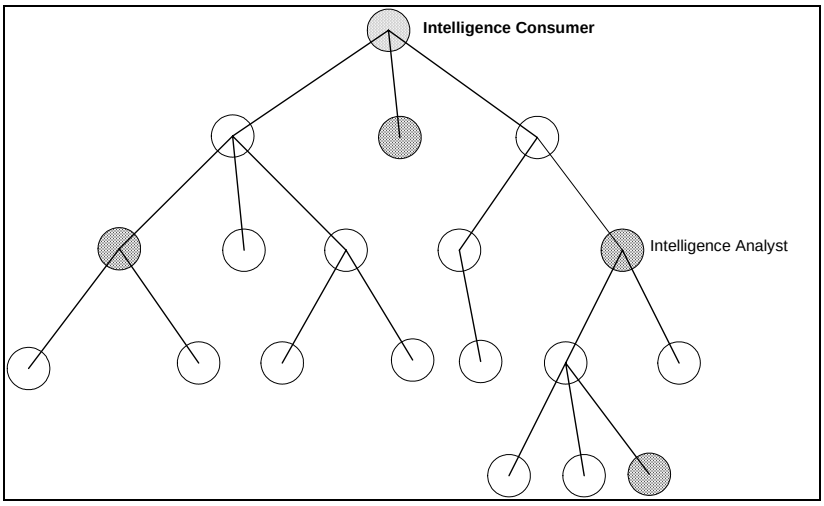

Figure 4.2 Selection of a subgroup to perform the intelligence task.

After determining the intelligence team for the defined intelligence task, one can think of the intelligence collection and analysis works of the assigned intelligence analysts the rings one within the other around the intelligence consumer. (Figure 4.3) In this representation the intelligence analyst has great autonomy in his/her OSINT exploitation and management and connection with the central authority. This direct connection increases the possibility of preparing a responsive, tailored intelligence product for the intelligence consumer.

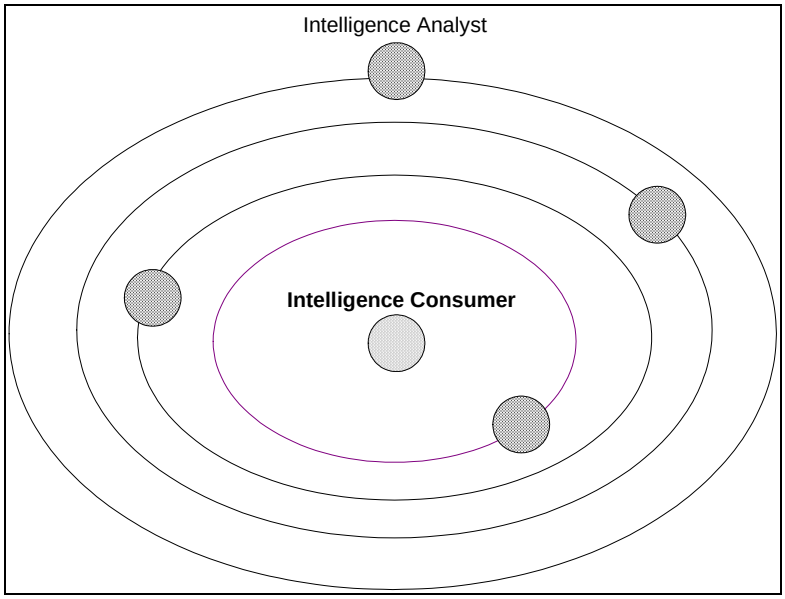

Figure 4.3 Proposed intelligence structure with OSINT.

In this configuration, the intelligence analysts can be evaluated as interfaces between the intelligence organization and their accessible information continuum.

The OSI model vastly increases the number of analysts and makes the forum public. [26]

In the proposed model, a team of analysts of different degrees of expertise is constructed. Each analyst in this team is equally distant from the intelligence consumer and exploit and manage its own information continuum and present his/her individual view to the intelligence consumer. Coordination process is executed among the team members with the contribution of the intelligence consumer.

The intelligence team members access to one another through a common medium, the intelligence consumer returns a rapid feedback in this configuration. There is no hierarchy for the individual participants and information sources accessible in the intelligence analysts' information continuum.[27]

This new intelligence team construction is especially suitable for the discrete intelligence. As for the continuous intelligence, the intelligence team should be changed at some intervals although not so frequent as for the discrete intelligence.

The contribution of the issue experts to an intelligence task is necessary but not sufficient. Thus, unlike the classical intelligence model, the intelligence model with OSINT included recommends the inclusion of the other intelligence analysts to the intelligence team as well.

With the introduction of OSINT, in addition to train the intelligence analysts as issue experts, some personnel should be trained so that they have moderate level knowledge of various issues. Because both an intensive study of a single subject (becoming one of the subject experts) and having moderate level knowledge of various subjects approaches one person to the excellency. (having the wisdom).

In intelligence, it is useful to distinguish among "known facts", "secrets", and "mysteries". Known facts can be readily observed. Secrets are facts that actually exist, but which an opponent is trying to hide. In principle, (if not in practice) secrets can be ascertained with enough effort and the right collection resources. Mysteries are things that cannot be discovered even in principle, because there are too many variables that may affect future events, or because a decision that will determine a future event has not

[26] "Implementing Open Source Intelligence:A Distributed Contribution Model," Open Source Quarterly 1.4, <http://www.osint.org/osq/v1n4/implementing.htm>.
[27] ibid.

yet been made. Known facts and secrets are amenable to analysis. The assessment of mysteries almost always depends on judgment. [28]

The new model's intelligence analysts coordinate to arrange the known facts and to discover secrets. (The other collection tasking) Each analyst presents his/her own judgment to the intelligence consumer thus the intelligence consumer evaluates the known facts and secrets and makes an overall judgment taking into consideration the analysts' assessments of mysteries.

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[28] Bruce D. Berkowitz, Allan E. Goodman, Best Truth Intelligence in the Information Age (New Haven and London: Yale University Press, 2000) 74-75.

Chapter 5

A CASE STUDY OF OSINT:

"XINJIANG UIGHUR AUTONOMOUS REGION:

INCREASING INVESTMENT OPPORTUNITIES"

China's new regional policy to increase collaboration with the Central Asian States and attract foreign investors to provide the necessary capital offers great investment opportunities in Xinjiang Uighur Autonomous Region.

5.1 Background

5.1.1 Xinjiang Uighur Autonomous Region

Xinjiang Uighur Autonomous Region is China's northwest province. It borders with the newly independent Central Asian States in the west (Tajikistan, Kyrgyzistan) and northwest (Kazakhstan); Afghanistan, Pakistan in the southwest, Russia in the north. (See Figure 5.1 and Figure 5.2)

The major cities of it (for example Kashgar-Kashi) were once the trade, culture centers located on the famous Silk Road. The discovery of the new alternative transportation routes over sea and existent instability problems had caused the region to lose its importance. During recent years, however, because of its rich natural resources and its geographic location, it has come to the world's attention again.

The region is not one of the Chinese dominated areas in China. The population consists of a large number of ethnic minorities such as Uighurs of Turkic origin, Kazakhs etc. For a long time, Uighurs has dominated the population but Chinese have ruled the area.

The region seeks great autonomy, independence from China. It suffers from the political and economic pressures of China. During the Chinese Civil War between 1944-1949, the region claimed its independence and was named as East Turkestan. However, with the end of civil war, People's Republic of China (PRC) regained its control over Xinjiang and Xinjiang has been declared as an autonomous region,

Figure 5.1 Map of Asia. [29] (China marked)

Figure 5.2 Map of China. [30] (Xinjiang Uighur Autonomous Region marked)

[29] "The World Factbook-Asia," 2004, <http://www.odci.gov/cia/publications/factbook/reference_maps/asia.html>.
[30] "The World Factbook-China," 2004, <http://www.odci.gov/cia/publications/factbook/geos/ch.html>.

province, district within which the various ethnic groups were promised "equality" with the Chinese majority. [31]

However, the promise has not been kept yet. Quite a few Hans do not respect local minorities' customs and way of life. Many big- and medium-scale enterprises, referring to all possible pretexts, refuse to employ minorities. As far as living standard is concerned, there is a big gap between minorities and Hans. Thus, a number of uprisings have been observed in different areas of Xinjiang. [32]

Xinjiang is located in Central Asia-one of the geopolitically critical areas of the world. It's an indispensable part of Central Asia and Central Asian conditions have strong influences on the region. Thus, it's useful to know the Central Asian environment before going further on.

5.1.2 Central Asia

The term "Central Asia" can be interpreted in many ways. In this context, it refers to the entire subregion — comprising the former Soviet Central Asian Republics of Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan, and the Xinjiang Uighur Autonomous Region of the People's Republic of China.

Central Asia has some important characteristics:

- The area is vast. It's nearly 4,500 km from east to west.
- It is landlocked and a long way from the leading international markets of Western Europe, North America, and the Pacific Rim.
- The terrain varies from the second-lowest point on Earth, in the Turpan basin (154 meters [m] below sea level, in Xinjiang), to mountain peaks that rise to more than 7,400 m only a few kilometers away on the PRC-Kyrgyz Republic border. Inhospitable deserts cover much of Kazakhstan and western Uzbekistan. Thus, harsh conditions prevail.
- The area is sparsely populated – the population of Kazakhstan, Kyrgyzstan, Uzbekistan, and Xinjiang PRC is about 61.9 million.

[31] "China: Uighur Muslim Separatists - Updated Special Report," Mar. 2003, Virtual Information Center, <http://www.vicinfo.org/RegionsTop.nsf/cd9253f54ef331048 a25682e00065544/c8a851e5a7f3d35f0a256cef000b7ce9?OpenDocument>.
[32] Felix K. Chang, "China's Central Asian power and problems," Orbis 41.3 (1997), 415-416.

- It has a low population density (12.4 inhabitants per square kilometer) and it has an average per capita income that is quite low at $598 in 1995. [33]
- Central Asia has vast, largely untapped energy potential. Thus, energy projects and pipeline routes are of significant economic concern.
- However, regional oil is not likely to have a significant impact on Western energy security or world oil prices. In comparison to the global energy resource base, regional oil and gas reserves represent a tiny fraction of overall supplies. The region accounts for only 2 percent of the world's proven oil reserves. [34]
- Because of its location in the heart of Eurasia and its energy resources, the West has an interest in preventing any single country from establishing hegemony over the region.
- Although Russia, Iran, Turkey, and China each have large geopolitical ambitions in the region, all of them lack the capability to establish an exclusive sphere of influence or achieve over-whelming dominance. There is no "vacuum" for ambitious neighbors to fill, and a multi-polar regional balance of power is evolving that will make it extremely difficult for any single country to establish regional hegemony. [35]
- Because of the substantial differences in history, culture, and economic status between the former Soviet Republics and the People's Republic of China, these two parts of the Central Asian subregion are far more dissimilar than similar, making it impossible to apply broad generalizations to Central Asia. [36]
- The region comprises weak, fragile, and unstable states (the former Soviet Republics). The greatest danger to regional order and stability is the possibility that one or more states will collapse under the crushing burden of internal problems. [37]

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[33] "Second Workshop on Economic Cooperation in Central Asia: Challenges and Opportunities in Energy," 1999, Asian Development Bank, <http://www.adb.org/Documents/Conference/CAREC/Energy/default.asp>.
[34] R. Sokolsky, T. C. Paley, "Look before NATO leaps into the Caspian," Orbis 43.2 (1999), 7, 12.
[35] ibid 3.
[36] "First Workshop on Economic Cooperation in Central Asia: Challenges and Opportunities in Transportation," 1999, Asian Development Bank, <http://www.adb.org/Documents/Conference/CAREC/Transportation/default.asp?p=carcpub>.
[37] R. Sokolsky, T. C. Paley, "Look before NATO leaps into the Caspian," Orbis 43.2 (1999), 12.

5.2 Recent Developments

5.2.1 Central Asia

Two major developments that have occurred in Central Asia in the recent past are:

- The collapse of the Soviet Union.
- The administrative vacuum in Afghanistan.

These two developments have brought about some situational changes:

With the collapse of the Soviet Union; new, independent Central Asian States have been founded. The foundation of these new independent national states has had influences on China. One influence is that the inhabitants in the Xinjiang Uighur Autonomous Region hoped they could claim their independence as well. Fears of Kazak nationalism among Chinese citizens, the Pan-Turkic movement and the Xinjiang Uyghur minority have appeared. Thus, there has been rise in ethnicity; and separatist movements have become a more significant threat for China.

The breakup of the Soviet Union left the new, independent countries with few sources of manufactured goods and industrial inputs, little demand for their products, and an inadequate administrative and political framework to cope with the challenges of independence. Their economic future depends on developing new trading partners within their region, and new trading routes to markets outside their immediate neighborhood.

Xinjiang PRC shares borders, economic interests, and cultural ties with former Soviet Central Asia. Lying along the historical “Silk Road,” the people in this region shared commerce and trade for centuries. The collapse of the Soviet Union makes it possible once again to develop economic cooperation and economic linkages within the region.

Because of the transition from the central economy in the Soviet Union to the unplanned market economies, the Central Asian States have faced with big economic crisis and the economic influence of China has been more probable in the area. The border restrictions have been loosened.

Initiatives have been taken to create stable, prosperous, and independent nation-states. International organizations such as the European Union, the World Bank, the European Bank for Reconstruction and Development, the International Monetary Fund, the United Nations, and various nongovernmental relief and humanitarian agencies have used their comparative advantage to take responsibility in these initiatives. The measures to be utilized are defined as to support democratic reform, nation building, and market-led economic growth. In order to ensure the regional stability, these organizations try to control

- access to energy supplies,
- prevention of hegemony,
- containment of conflict, and
- prevention of Weapons of Mass Destruction (WMD) proliferation. [38]

The administrative vacuum in Afghanistan has caused the instability problems in the region. The ethnic minorities in Central Asia have moved to Afghanistan and there has been a rise of fundamentalist Islam especially when it is linked to separatist activity. Particularly after the 11th of September event in 2001 and its claimed links with Afghanistan, the United States has been introduced as a new power in Central Asia. Counter-terrorism has been a common mission for all the neighboring countries and major power sources.

5.2.2 China

China inside have gone through some changes as well:

China has been a communist state that utilized strict political and economic controls. With the decline of communism, these controls particularly the economic ones have been more flexible. The market-oriented reforms and decentralized decision-making have been introduced.

The economic growth has become very important to Chinese leaders and the legitimacy of their rule, in light of the decline of communism as a unifying ideology. [39]

[38] R. Sokolsky, T. C. Paley, "Look before NATO leaps into the Caspian," Orbis 43.2 (1999), 12-13.
[39] Felix K. Chang, "Chinese Energy and Asian Security," Orbis 45.2 (2001), 2.

Sustained economic development has been the number one policy goal. PRC realized that it lacks the necessary capital to fulfill the requirements of all the regions. Thus, energy self-reliance principle has been broadened to include controlling remote energy resources and transportation links as well as discovering and processing the native resources.

5.3 Consequences

5.3.1 Evidences

China's influence is growing fast in Central Asian States. Political realities in Central Asia might be seen just by looking at street signs: in 1997, one of the leading boulevards in Bishkek – the Lenin Prospekt – had had a large section renamed to the Deng Xiaoping Prospekt. [40] [41] Also, Central Asian markets are full of inexpensive, low-quality Chinese goods. [42]

In the frame of the cooperative development policy in Central Asia, China has taken the lead in forming the Shanghai Five consultative group (composed of China, Russia, Tajikistan, Kazakhstan, and Kyrgyzstan) that later evolved into the Shanghai Cooperation Organization (SCO) after the addition of Uzbekistan. The SCO's stated objectives for China are as follows:

- Resolving long-standing border issues with Russia and the newly independent Central Asia nations;
- Creating a security mechanism for containing the chaos on the other side of its borders and isolating its own problems in Xinjiang;
- Laying the groundwork for trade with and access to the key economic resources of Central Asia—including the increasingly important prospect of energy resources, and;

[40] "Forum One: The Current State of China-Central Asia Diplomacy and Implications for U.S. Foreign Policy-China's Emergence in Central Asia: Security, Diplomatic, and Economic Interests," 2003, Center for Strategic & International Studies, <http://www.csis.org/china/030205_ce_forum01.pdf>.
[41] Mark Burles, "Chapter Four: Prospects for China's Influence in Central Asia," 1999, <www.rand.org/publications/MR/MR1045/MR1045.chap4.pdf>, 3.
[42] ibid 9.

- Establishing itself as a significant player in Central Asian affairs before the United States becomes too entrenched through NATO and Partnership for Peace initiatives and before the Russians attempted to reassert itself into its "near abroad." [43]

The SCO' s mission has been declared as to cooperate more thoroughly to deal with the "three evil forces"–terrorism, separatism, and extremism.

The establishment of the SCO, largely spearheaded by the Chinese, is seen by many observers as part of a security strategy to prevent Kazakh or Uighur separatists from using Central Asian states as a safety zone to plot separatist activities in Xinjiang. It is also seen by some analysts as an organization that the Chinese have used to spread their sphere of influence, both economic and geopolitical, throughout Central Asia. [44]

China has taken a military exercise with the Kyrgyz military in October 2001. It has been noted as the first combined exercise in the history of the PRC.

China has focused on transportation and energy projects. Multiple long-term infrastructure projects, including oil and gas pipelines, roads, and railroads, have been initiated.

There are amazing changes taking place in the restructuring of China's oil and gas sector including the inflow of foreign capital. [45]

5.3.2 Policy Details

Recent developments, events in Central Asia have forced the big powers (for example China) to adapt new policies that are consistent with the new regional and global realities.

China defines two essential national policy objectives as:

- Maintaining the territorial integrity.

[43] "Forum One: The Current State of China-Central Asia Diplomacy and Implications for U.S. Foreign Policy-China's Emergence in Central Asia: Security, Diplomatic, and Economic Interests," 2003, Center for Strategic & International Studies, <http://www.csis.org/china/030205_ce_forum01.pdf>, 3-4.
[44] "China's Relations with Central Asian States and Problems with Terrorism," Dec. 2001, The Library of Congress, <http://fpc.state.gov/documents/organization/7945.pdf>, 16.
[45] A. A. Parra, "Oil and gas in Central Asia and Northwest China James P Dorian; CWC Publishing Limited, London, UK, 174pp," Energy Policy 30.15 (Dec. 2002).

China's primary objective in the region is to maintain its own territorial integrity by ensuring that the Xinjiang Uighur Autonomous Region, historically a venue of Turkic and Muslim separatist agitation, remains firmly under Beijing's control. [46]

Three principal attributes make Xinjiang vital to China: its potentially rich hydrocarbon and mineral assets, its strategic location, and its relationship to the national legitimacy of the Chinese Communist Party (CCP). The rise of regionalism in China threatens to undermine the CCP's new legitimacy. The capability of China or the CCP in response to the ethnic groups like the Uighurs in Xinjiang that continue to agitate for greater autonomy is a very important concern. [47]

Looking beyond their western border, Chinese leaders' principal concern is that a rising tide of religious and ethnic turbulence in Central Asia might spill over into China. Thus, China's international interests in Central Asia are firmly intertwined with its domestic interests in Xinjiang. Chinese policy is designed to maintain stability and contain ethnic, religious, and nationalist separatism through economic development of the region.

Beijing remains hopeful that a combination of military force and economic prosperity brought about by reform and foreign investment in the region will help assuage the Uighurs' antipathy toward China. [48]

- Sustained economic development.

With the weakened Russian influence in Central Asia since 1991, China has become a more active player, has growing interests. China evaluated regional concerns, its regional policy and has determined the short-term and long-term regional goals:

China aims at creating a balance of power in the region that factors in itself, Russia, Iran, the United States, and other South Asian countries. This balance of power ensures for China that no power perceived to be hostile to China dominates the region. [49]

[46] R. Sokolsky, T. C. Paley, "Look before NATO leaps into the Caspian," Orbis 43.2 (1999), 6.
[47] Felix K. Chang, "China's Central Asian power and problems," Orbis 41.3 (1997), 2.
[48] ibid 20.
[49] "Forum One: The Current State of China-Central Asia Diplomacy and Implications for U.S. Foreign Policy-China's Emergence in Central Asia: Security, Diplomatic, and Economic Interests," 2003, Center for Strategic & International Studies, <http://www.csis.org/china/030205_ce_forum01.pdf>, 6.

China's Central Asian policy priorities involve:

- Avoiding instability in the region.

One of the Chinese objectives can be stated as border demarcation. China wants to ensure its security in the border regions. [50]

The administrative vacuum in Afghanistan and the 11th of September attacks and their claimed links have affected the Chinese plans as well. With the introduction of the United States as a new power and a leader in counter-terrorism, China has chosen to collaborate with the United States and containing terrorist threats has become a mission in China's policy.

Current Chinese leaders, though mindful of their country's long tradition of energy self-reliance, are acutely aware that the legitimacy of their rule requires sustained economic growth, and that growth would be imperiled by regional instability. [51]

China tries to keep a stabilized environment to go on with the economic growth. In this regard, PRC uses communication and diplomacy to resolve the discussions and disputes between the neighboring states and the other countries. China will not undertake military action solely over energy resources unless and until its access to those it has already developed through commercial agreements and diplomacy is seriously threatened. [52]

- Securing access to energy resources.

China evaluates the Central Asia as of critical importance for energy needs. PRC tries to ensure access to trade and natural resources in the region. Besides being as a source of energy supply, Central Asia is a means of transit to markets in Europe and the Middle East for China.

The Chinese, moreover, want to prevent trouble in Central Asia from interfering with Beijing's access to the region's energy resources, including China's potentially vast oil reserves in the Tarim Basin, or from hindering efforts to integrate neighboring Central Asian countries into the Chinese market.

[50] "Forum One: The Current State of China-Central Asia Diplomacy and Implications for U.S. Foreign Policy-China's Emergence in Central Asia: Security, Diplomatic, and Economic Interests," 2003, Center for Strategic & International Studies, <http://www.csis.org/china/030205_ce_forum01.pdf>, 6.
[51] Felix K. Chang, "Chinese Energy and Asian Security," Orbis 45.2 (2001), 29.
[52] ibid 30.

- Expanding economic cooperation. [53]

PRC has realized that in the 21st century the concept of cooperative development is valid. There is no true development in isolation from the neighbors and the rest of the world.

China's current policy is to make the best use of international resources. China will be even more active [in] international market because there is not so much [recoverable] oil at home. [54]

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[53] Mark Burles, "Chapter Four: Prospects for China's Influence in Central Asia," 1999, <www.rand.org/publications/MR/MR1045/MR1045.chap4.pdf>, 51.
[54] Felix K. Chang, "Chinese Energy and Asian Security," Orbis 45.2 (2001), 29.

5.4 Investment Making (General Conditions)

In the new global environment, investments are made within the frame of economic cooperation. With economic cooperation, nobody loses – each country can benefit. Economists refer to "zero sum games" and "non-zero sum games". In a zero sum game, if one person wins, it is because somebody else has lost. In a non-zero sum game, it is possible for both sides to gain equally. And that is precisely the aim of economic cooperation. The challenge, though, is to understand and respect each other's strategic interests and concerns, and to find strategies that allow each government to advance its own interests within the framework of a common action. [55]

Economic cooperation can mean a lot of things to different people. It can be looked at as a continuum. At one end it is what is going on right now in Western Europe with an attempt to merge the economy, merge currencies, merge political institutions, and merge legal systems into a single entity. Or economic cooperation can be nothing more than an agreement between two countries to permit cars to pass across the borders or to reduce tariffs and other barriers to trade.

The private sector usually consists of investors, the contractor, and lenders. The investment players are not merely the investors, the contractor, and lenders, but also include the government.

A good investment environment is a cooperative environment between the government and the private sector. The success of a partnership for investment requires mutual benefit of the private sector and the government. It is based on the government's acceptance and need to provide strategic infrastructure, combined with the private sector's ability and willingness to operate such a service for profit. The private sector looks for the following criteria in making the investments:

- Infrastructure,
- Transport and communications,
- Energy,
- Policy environment.

[55] "Second Workshop on Economic Cooperation in Central Asia: Challenges and Opportunities in Energy," 1999, Asian Development Bank, <http://www.adb.org/Documents/Conference/CAREC/Energy/default.asp>.

If there is no dependable infrastructure, transport and communications, and energy in a country or region, investments are made to make them available in the first place.

In today's environment, countries are not limited with their own finance and know-how capabilities. There are private bodies that want to help to finance projects and make business using their know-how. This investor willingness presents a wonderful opportunity. However, to attract such capital and know-how, there must first be the right economic, financial, and governance environment.

Clear policies, transparency, probability of commercial success and stability are crucial factors for attracting private sector financing in projects.

Key constraints for private sector participation in investments are as follows:

- Governments view infrastructure as state or national assets.
- Little desire by governments to privatize.
- Unclear administrative procedures.
- Protracted negotiations.
- Underdeveloped legal and regulatory environment.
- Currency risk.
- Market risk.
- Poor rate of return on investment: Lack of planning (there might be too much of one service and not enough of another) and excessive transaction costs can be the causes. [56]

Among the key elements for attracting private finance are: [57]

- Rules of law and contract enforceability;
- Creditworthiness both at the macroeconomic and enterprise levels. (country credit ratings);

[56] "First Workshop on Economic Cooperation in Central Asia: Challenges and Opportunities in Transportation," 1999, Asian Development Bank, <http://www.adb.org/Documents/Conference/CAREC/Transportation/default.asp?p=carcpub>.
[57] "Second Workshop on Economic Cooperation in Central Asia: Challenges and Opportunities in Energy," 1999, Asian Development Bank, <http://www.adb.org/Documents/Conference/CAREC/Energy/default.asp>.

- Sector policies

  The clear and strong support of the host government is an essential precondition for the flow of private sector investment into large capital-intensive projects. The government should address the following policies for sectors: [58]

  - Maintenance of infrastructure: There must be a proper program of maintenance and there must be a budget for maintenance.
  - Technical standards: Sector-specific technical standards should be well determined.
  - Customs regulations: Customs have a key function in any country's economy. They have a preventive function to stop things coming in that country does not want. They have a tax collecting function to collect revenue, to which the government is entitled, import duty, taxes, and so on. But those procedures and regulations need to be simple and clear so that every trader understands them. Issues of harmonization of customs procedures between the countries are issues that are critical for economic cooperation.
  - Security and control points: Every country needs security on its borders. Security means checking and controlling people and traffic whether it is at the airport or at the border point. What that is not needed is a whole series of unofficial control points or internal control points within the country. Government policy should combine an effective order of security with a freedom of internal travel.
  - Border crossing procedures: The border crossing procedures should be as simple and as clearly defined as possible. They complement the previous two regulations by providing the facilities for the passengers and vehicles crossing the border.

[58] "First Workshop on Economic Cooperation in Central Asia: Challenges and Opportunities in Transportation," 1999, Asian Development Bank, <http://www.adb.org/Documents/Conference/CAREC/Transportation/default.asp?p=carcpub>.

- Trade facilitation: Trade facilitation means improving methods of payment for goods. It means having an effective and efficient banking system that will issue letters of credit, and provide efficient credit transfers and payment. It usually means allowing a free flow of currency across borders. It also means reduction of import and export restrictions to allow a free flow of goods between one country and another. That is combined wherever possible with a reduction or elimination of import tariffs to encourage economic cooperation and trade development between the participating countries.
- Customer orientation: Customer requirements should be taken into consideration so that investments in sectors should provide the customers more choices.
- Service provision: The three basic requirements of the provided services are they must be efficient, they must offer acceptable levels of comfort and safety, and they must be affordable.
- Performance standards: The investment partners should agree on a basic standard of performance. This provides the consistency of service that will be available.

- Transparent legal and regulatory frameworks to signal pricing/tariff policies;

The regulatory framework can perhaps be divided into phases:

- First phase: This would be to attract investment by adopting a clear and transparent regulatory framework;
- Second phase: This is in the actual processing of project proposals. It should demonstrate that the rules will remain the same and constant – that again generates certainty; and
- Third phase: This, perhaps the most important is sustainability.

- Bankability of investments (Guaranteed to bring profit);
- Creation of effective domestic capital markets and institutional capabilities; and
- Government commitment to sustain an effective action to reform, long-term planning, and change.

5.5 Investment Making Criteria vs. Current Policies in Xinjiang-Central Asia

Xinjiang PRC and the former Soviet Central Asian States try to attract foreign investors by providing a proper policy environment for the transportation and energy sectors at first.

Transportation and energy are the two main sectors that are very critical for Xinjiang and Central Asia. A country/region cannot grow or develop without transportation. It is especially important for Central Asia because of the distances involved, and also because the countries are landlocked and must go through another country to export. [59]

Transport and energy sectors require a powerful infrastructure. However, Xinjiang and Central Asia lack the necessary infrastructure. Thus, there are tremendous opportunities to build infrastructure in Central Asia. [60]

The region has valuable energy resources. Therefore, most private foreign investment in Central Asia has focused on providing technology and expertise for developing the potential of the subregion's oil and gas fields. [61]

China aims at sustained economic growth and this requires more energy because there is a simple and straightforward relationship between economic and energy growth – when an economy grows, more energy is consumed. A powerful infrastructure and developed transportation facilities in Central Asia means the easier links to Middle East (full of valuable energy resources) for China and of highest priority.

Xinjiang PRC has developed a preferential policy environment for encouraging foreign investment. Following are the factors and evidences in Xinjiang, which increase the probability of successful investments:

- Xinjiang PRC, which has many ethnic groups, is remotely located and is a comparatively backward place. Some people have a low standard of living

[59] Felix K. Chang, "China's Central Asian power and problems," Orbis 41.3 (1997).
[60] "First Workshop on Economic Cooperation in Central Asia: Challenges and Opportunities in Transportation," 1999, Asian Development Bank, <http://www.adb.org/Documents/Conference/CAREC/Transportation/default.asp?p=carcpub>.
[61] "Second Workshop on Economic Cooperation in Central Asia: Challenges and Opportunities in Energy," 1999, Asian Development Bank, <http://www.adb.org/Documents/Conference/CAREC/Energy/default.asp>.

and infrastructure is poor. As a result, people show their enthusiastic and strong support for those projects they believe could help them reduce poverty. This important factor makes for the smooth implementation of key projects.

- In recent years the PRC has strengthened exchanges and cooperation with other countries in the transportation field. The Central Government and Xinjiang PRC's Regional Government have signed about 10 bilateral or multilateral transportation agreements with neighboring countries, paving the way for regional cooperation.
- The Central Government and Region's Legislative Department have also passed a series of regulations and laws to protect investors. [62]
- Xinjiang PRC passed Electric Power Law (1995) and Highway Law (1989) to encourage private sector participation in energy and transportation sectors.
- The PRC is encouraging foreign investment and participation in domestic oil activities as part of the country's open-door policy and to facilitate the renovation of its energy industry. Government officials of Xinjiang PRC have even more leeway to solicit foreign investment because of the autonomous status of the province and its remoteness. [63]
- Global capital in the form of foreign direct investment is to flow to Xinjiang and Central Asia. The organizations such as ADB, IMF, and World Bank have great willingness to invest in Xinjiang because of its strategic importance and rich energy reserves. There are also other private investors that want to sell their know-how exploiting the region's poor know-how capability, underdeveloped situation.
- China seems to advance in the sustained economic growth goal. According to Euromoney, GDP (Gross Domestic Product) growth accelerated to 7.3% in 2001, and although slightly lower than the 8% in 2000, China was still the star growth country globally. Total nominal GDP rose from US$1.08 trillion

[62] "First Workshop on Economic Cooperation in Central Asia: Challenges and Opportunities in Transportation," 1999, Asian Development Bank, <http://www.adb.org/Documents/Conference/CAREC/Transportation/default.asp?p=carcpub>.
[63] "Second Workshop on Economic Cooperation in Central Asia: Challenges and Opportunities in Energy," 1999, Asian Development Bank, <http://www.adb.org/Documents/Conference/CAREC/Energy/default.asp>.

in 2000 to US$1.16 trillion in 2001, as China implemented expansive fiscal and monetary policies in order to stimulate weak private investment and consumption.

Signaling strengthening foreign interest in China, the nation's accession into the WTO (World Trade Organization) and the opening up of the mainland market helped boost foreign direct investment into the country by 14.9% year-on-year in 2001. China's accession is expected to bring with it wide ranging reforms, which will further open its economy and lead to greater global integration and increased access to foreign investors. Moreover, according to government estimates, China's successful bid to host the 2008 Olympic Games could add an average of 0.3% to 0.4% to its annual growth in the next seven years. In a bid to maintain its high growth rates, China lowered key interest rates for the first time since June 1999. [64]

In the Euromoney rankings for March 2004, China has been ranked 45 out of 185 countries. [65]

Typically, these credit ratings rank countries in terms of their ability to pay back loans, or their ability to raise finance. The indicators used to come up with this rating system are as follows: economic performance, political risk, investment and tax legislation, debt indicators (how much the government of that country is in debt), and access to international finance.

These and other rankings cannot claim absolute accuracy, but companies do look at this kind of table in order to ensure that they are familiar with the risks of the individual countries that they are about to invest in. [66]

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[64] "China," 2004. Euromoney Institutional Investor PLC, <http://www.euromoney.com/default.asp?page=888&/public/regions/eastasia/china/header.html&/public/regions/eastasia/china//briefings/china.html>.

[65] "Country Risk - Results&Methodology," Euromoney Mar. 2004.

[66] "Second Workshop on Economic Cooperation in Central Asia: Challenges and Opportunities in Energy," 1999, Asian Development Bank, <http://www.adb.org/Documents/Conference/CAREC/Energy/default.asp>.

However, some evidences are not in favor of investment making in Xinjiang:

- The PRC has a very rigorous screening process, which must be followed for projects. As an example; there are no transport projects in Xinjiang PRC in the Asian Development Bank's country program. To put projects in the country program, the Xinjiang PRC authorities will have to liaise very closely with the State Planning Commission and the People's Bank of China. Without their agreement, ADB cannot finance transport projects in the Xinjiang PRC region. [67]
- The newly independent republics along Russia's southern border are potentially weak and unstable. Over the next ten to fifteen years the states will face serious internal and intraregional threats: tribal, ethnic, and clan disputes; severe poverty and growing disparities in income distribution; immature political institutions, civil societies, and national identities; environmental degradation; political repression and a lack of constitutional mechanisms for the orderly transfer of power; rapid population growth; mass urbanization; conflict over land, water, energy, and mineral resources; ethnic separatism; and pervasive corruption, crime, and cronyism. In brief, the region displays all the problems that can result in "failed" states, and the area's potential instability could lead to crisis and perhaps even chaos, especially since regional institutions for cooperation are still tenuous and largely ad hoc." [68]
- In Xinjiang PRC, national policies restrict government officials' ability to attract foreign investors. Until recently, for example, the PRC did not permit foreign electricity projects to earn reasonable rates of return for fear of opposition by local electricity consuming industries. The restrictions were relaxed only in 1997 because few foreign companies were considering making electricity investments. The Central Government remains reluctant to privatize the country's power sector, however, given the difficult valuation and ownership issues and the fact

[67] "First Workshop on Economic Cooperation in Central Asia: Challenges and Opportunities in Transportation," 1999, Asian Development Bank, <http://www.adb.org/Documents/Conference/CAREC/Transportation/default.asp?p=carcpub>.
[68] R. Sokolsky, T. C. Paley, "Look before NATO leaps into the Caspian," Orbis 43.2 (1999), 10.

that the sector is considered key to the country's national security strategy. Therefore, notwithstanding the recent opening of Tarim to foreign investors, Xinjiang PRC officials were not able to offer investors the most promising areas of the basin because of Central Government restrictions.

- Unstable and untested policies in the region jeopardize the investments in Xinjiang. The biggest concerns for potential investors in Central Asia, whether private companies or international lending agencies, are the unstable tax, currency, investment, and environmental policies that could jeopardize their investments.
- Instability in government would reduce the attractiveness of the investment environment. Potential investors in the sector are concerned about the rise of nationalistic and separatist movements that may threaten ownership rights and subregional political stability. The extended civil disturbance in Tajikistan and continued armed conflict in nearby Afghanistan constitute a permanent backdrop to development in the subregion and increase the risks associated with investing in the energy sector. [69]

In conclusion, Xinjiang PRC offers increasing investment opportunities in particular in infrastructure, transportation and communications, and energy sectors. China has great willingness and decisiveness to preserve the regional stability, to develop Xinjiang, to sustain its economic growth. Thus, China is ready to do its best to provide a proper investment environment, reduce the risks. The other Central Asian States are highly influenced by China and behave in cooperation with China to develop Central Asia as a whole. Thus, there are more legitimate reasons for an investment being successful than failed if investors select the appropriate sectors and take into consideration the general and sectorial policy issues

[69] "Second Workshop on Economic Cooperation in Central Asia: Challenges and Opportunities in Energy," 1999, Asian Development Bank, <http://www.adb.org/Documents/Conference/CAREC/Energy/default.asp>.

Chapter 6

OSINT MAKING:

ANALYSIS OF THE CASE STUDY

In the contemporary intelligence model, an individual intelligence analyst is his/her own manager in OSINT making, arranges his/her customized environment to exploit open sources, and has direct relationship with the policymaker.

The objective of this chapter is to define some general rules in OSINT making that were used in OSINT case study previously.

6.1 OSINT Case Study

In the OSINT case study, a single unit with temporal and spatial boundaries is chosen [70] and with the application of OSINT techniques and intelligence reporting principles on the defined unit, a final open sources intelligence product is produced. (Chapter 5 is comprised of the prepared OSINT case study.)

The definition of the intelligence problem starts the OSINT process. The defined problem for the case study is as follows:

"The feasibility of making investment, business in China's Xinjiang province (or Xinjiang Uighur Autonomous Region) in the first decade of the 21st century."

First of all, the understanding of the defined intelligence problem is very critical. The correct approach to the intelligence problem should be utilized. In this approach, the intelligence analyst should concentrate not on whether an event is likely, but on how and why it might come about. [71]

In producing OSINT, the following phases are experienced:

- **Exploration-Discovery.**

  The aim of this phase is to discover the nature of the intelligence problem. In order to get the nature of the defined case study problem, it's necessary to do

[70] John Gerring, "What is a Case Study and What is it Good For?" American Political Science Review Oct. 2003.
[71] Analytic Toolkit, CIA Directorate of Intelligence 1997.

exploration first. Some exploration is useful to form the background. Only after spending time in exploration, can discovery be possible. Both the exploration and the discovery are done in the digital environment. In exploring the case study topic, it's a good habit to note the footprints-to organize bookmarks. To bookmark the web pages visited in a specific date, in a specific folder named that date serves this purpose. (See Figure 6.1)

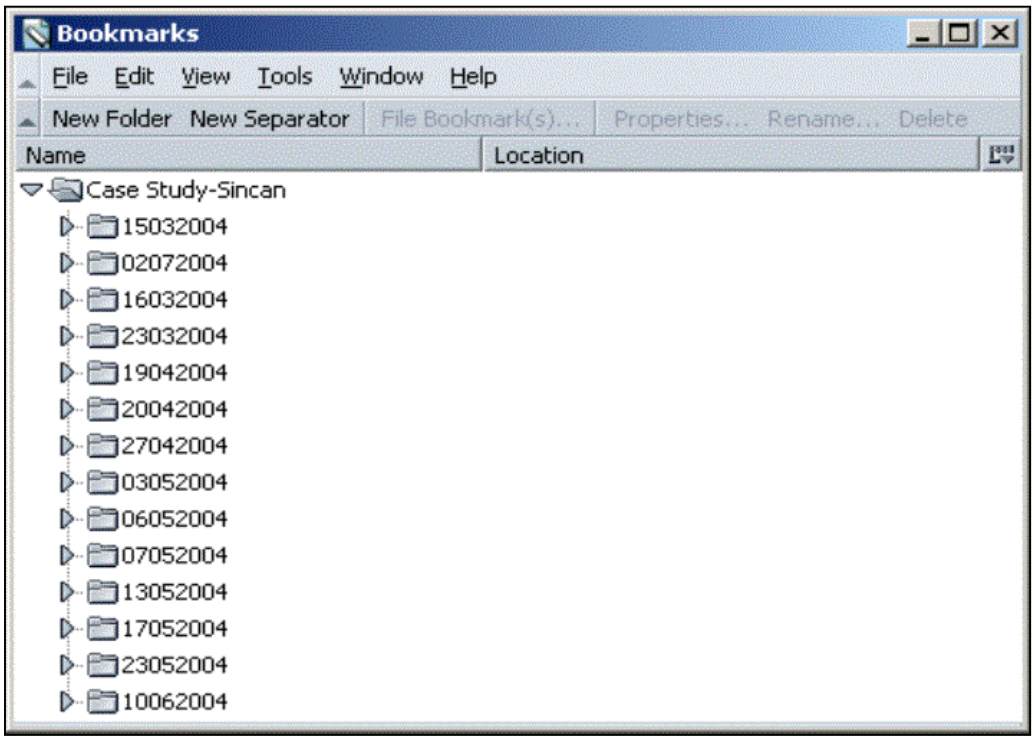

Figure 6.1 Organization of Bookmarks.

Navigating through the Web, it's a good practice as well to store the important documents locally, as they can be unavailable after some time. In storing these documents, one common digital format should be chosen and the stored copy should be browsable and indexed. As for the experienced case study, Adobe Acrobat 6.0 Professional is selected as the storage software and the indexing capability provided by Acrobat Catalog is utilized. In the left part of the following figure, the searches are done on the generated index for the locally stored documents and at the right pane the usage of underlining on one stored document is shown.

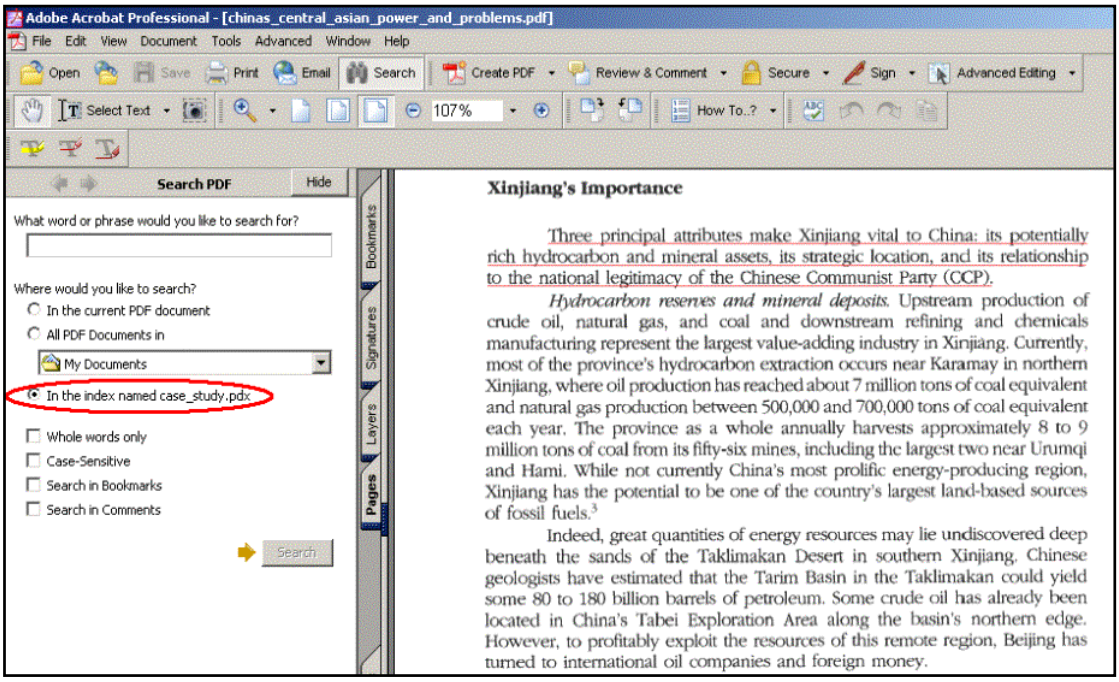

Figure 6.2 The Index Generated by Acrobat Catalog for the Locally Stored Documents and the Use of Underlining on one of the Stored Documents.

Discovering the special vocabulary specific to the case study topic in the relevant languages is an important beginning point. Especially, if the spatial boundary for the studied case is geographic, the acquaintance of the target locations, areas should be developed and their relative positions on the map should be known.

Discovering the subject-matter experts contributes strongly to retrieve the nature of the intelligence problem as well. The foreign language knowledge and the expertise field should be used as main criteria in selecting these individuals. (Figure 6.3)

- **Discrimination.**

  Discriminating between various sources of information is vital.

  A qualified open service and open source have some characteristics.

  A qualified open service generally requires a subscription. A subscription fee is required to access, or a free trial period is given before requesting a subscription fee or the access is permitted freely only after the provision of the contact

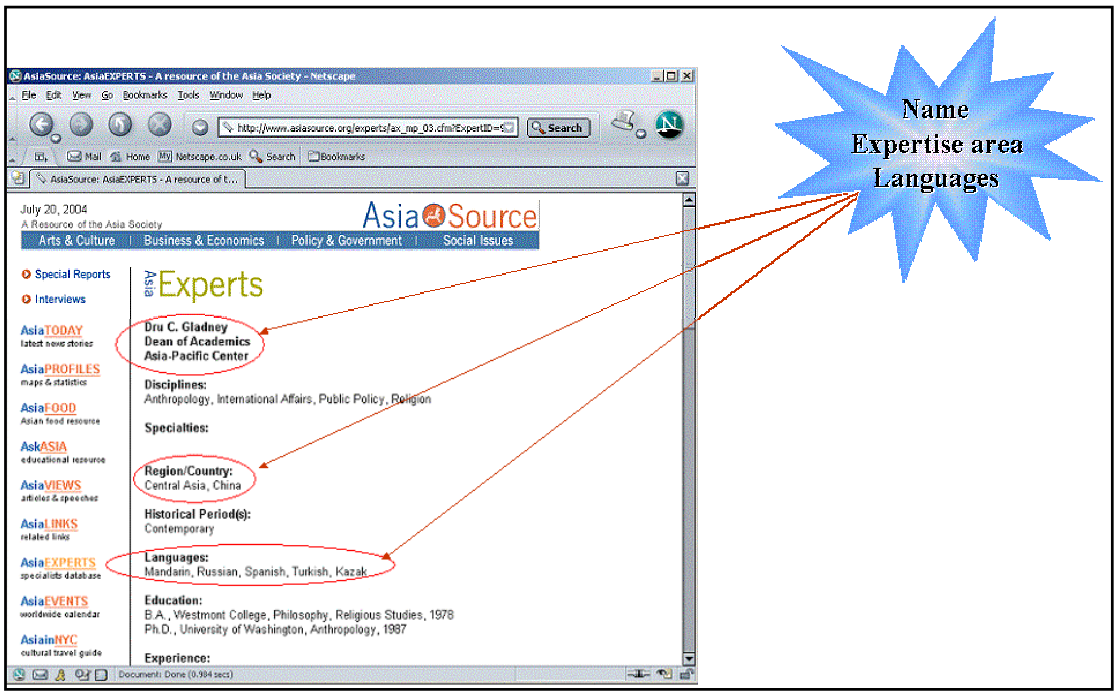

Figure 6.3 Discovering the Subject-matter Experts.

information, the personal and organizational details. Thus, journal results are safer than web results.

A qualified open source is expected to be low-cost rather than free.

The existence of the references within a document increases its credibility. If the source of the material is given, the material is worth further consideration. Source attribution makes it possible to drill down to the original source so that it could be evaluated.

A journal article that is accessed through a limited access electronic database (ScienceDirect), which includes references can be evaluated as a qualified open source as shown in Figure 6.4.

It is necessary to check the original source before accepting quoted material.

Sources needed to be weighed against one another with more reliability attributed to newer and specialist publications and less to older and generalist publications.

Unsourced information is useful if it can be independently collaborated. Seemingly unrelated information can be useful in deducing and collaborating other information.

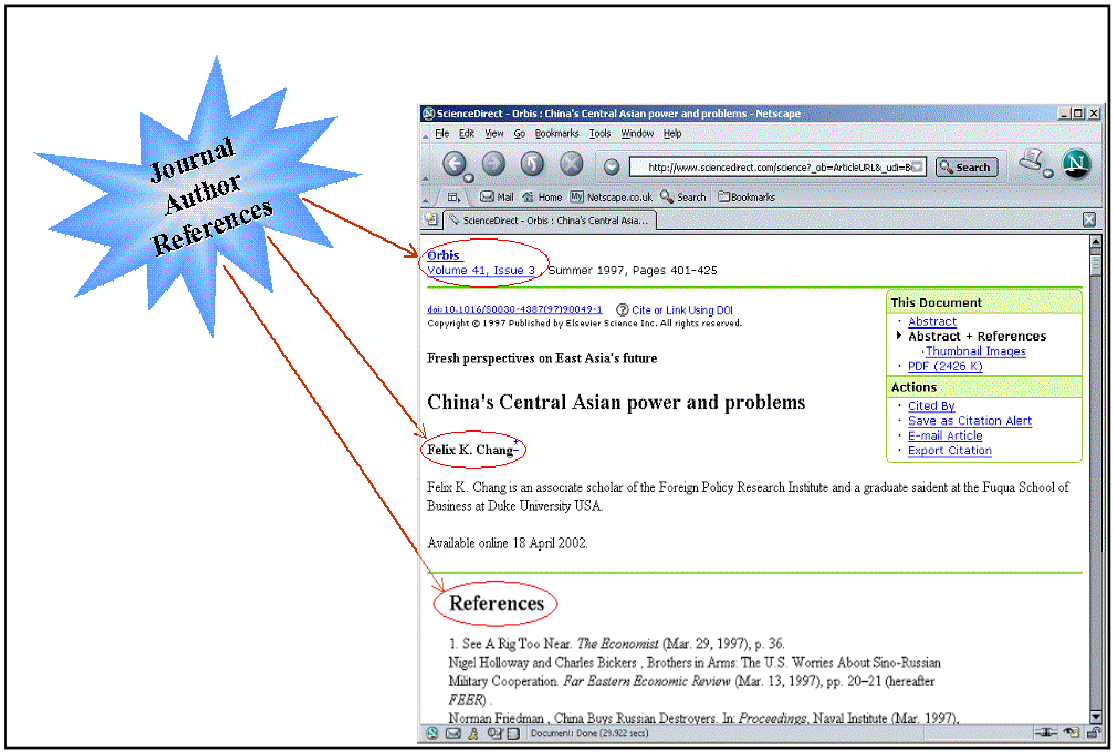

Figure 6.4 An example qualified source.

For the experienced OSINT case study 15 days of discovery and discrimination effort (approximately two hours per day) have taken place.

- **Validation.**

  Validation comes in two forms: Information verification and source validation. The information that is repeated in different open sources many times most probably is true. However, there is a possibility that all the same information is the copies from one main source. Thus, it's a useful and necessary practice to go over the references sections of a given document to find the original source of information. For example; in our case study, one web source verifies the information available from a journal source however it's just the copy of the same information because the web source gives that journal source as reference. (Figure 6.5)

  For the experienced case study, footnotes are used extensively to represent source attribution. The footnote represents the main source of information. There are other sources which repeat the same information included in the main source thus verify it. Therefore; for every referenced information in the case

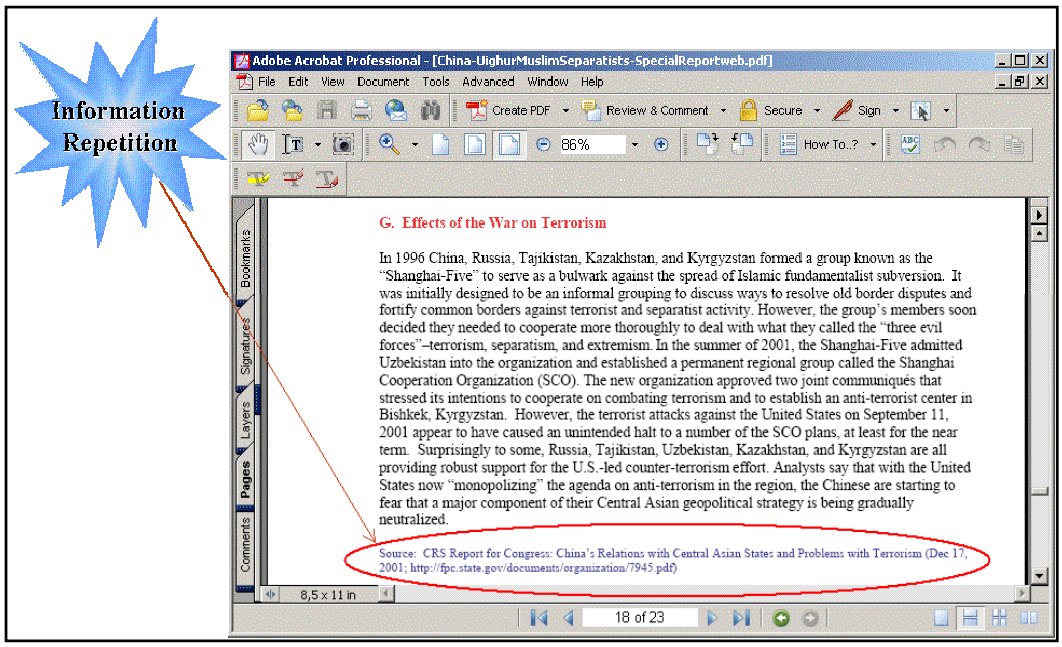

Figure 6.5 An Example Information Repetition.

study, the main reference and the other verifying references are listed in a chart and the average number of verifying sources per reference is computed. The chart and the results are given in Appendix.

Establishing human contact and verifying information through this contact is very helpful in validation efforts. One human is reached in the case study to request information and experience from. His opinions regarding the investment environment in Xinjiang are as follows:

John_Magill@dai.com:"I do know that we were impressed by the amount of construction and investment -- mostly public -- that was taking place in Urumqi."

At an upper level, the credibility and knowledge of one human expert and/or author can be validated by another human expert. For example, Zbigniew Brzezinski' s expertise is confirmed by another subject-matter expert in the case study.

Additionally, it should be kept in mind that open sources are not sufficient to do source validation; the intelligence analysts utilize all kinds of sources and services not only the open ones in the validation task.

- **Distillation.**

  Distillation is done to reduce the compiled material to only the essential information needed for the readers to make decisions or use the information.

  The first step in the distillation process is the crafting of the title. In our case, geographic and topical mix title is constructed. (Xinjiang Uighur Autonomous Region: Increasing Investment Opportunities)

  The intelligence report is organized around the following outline:

  - Title
  - Major Judgment/Point
  - Background Information
  - The Recent Developments
  - Consequences (Resulting Policies)
    - Evidences
    - Policy Details
  - General Conditions
  - Conclusion
    - Assertions that are in favor of the major judgment
    - Assertions that are against the major judgment
    - Concluding paragraph

  Every section is organized around a main theme and first paragraphs in the section hold a core assertion. The succeeding paragraphs are comprised of supportive statements to the core assertion and one idea per paragraph principle is applied. [72]

  The source information is given for all the facts. Thus, it is clear the distinction between the facts and mysteries and judgments.

- **Delivery.**

  Appropriate delivery of the distilled information is essential. The delivery option is selected so that it's the most appropriate for the target.

[72] Analytic Thinking and Presentation for Intelligence Producers Analysis Training Handbook, Office of Training and Education.

6.2 Findings/Recommendations

Here are some findings and recommendations for the intelligence analyst in OSINT making:

6.2.1 OSINT Analysis Measures

For the evaluation of an OSINT process, some measures for analysis (listed in Table 6.1) can be stated. Table 6.2 gives these measures with their corresponding values for the experienced case study.

Table 6.1 OSINT Analysis Measures.

<table>
<tr><td>OSINT Budget</td><td colspan="3"></td></tr>
<tr><td rowspan="4">Exploration-Discovery</td><td colspan="3">Total Surfing Time</td></tr>
<tr><td>Total Bookmarked Item Count</td><td>Bookmarked Item Count Per Hour</td><td>Utilized Bookmarked Item Count</td></tr>
<tr><td colspan="3">Locally Stored File Count</td></tr>
<tr><td colspan="3">Total Size of the Collected Material</td></tr>
<tr><td rowspan="4">Discrimination</td><td colspan="2">Total Size of the Web Sources</td><td>Total Size of Every Other Open Source Material</td></tr>
<tr><td colspan="2">File Count for the Web Sources</td><td>File Count for Every Other Open Source Material</td></tr>
<tr><td colspan="3">Number of Human Contacts</td></tr>
<tr><td colspan="3">Broken Link Count for Locally Stored Files</td></tr>
<tr><td rowspan="3">Validation & Distillation</td><td colspan="3">Total Size of the Final Report</td></tr>
<tr><td colspan="3">Referenced Material (Footnote) Count</td></tr>
<tr><td colspan="3">Information Verification Per Footnote Item</td></tr>
</table>

Table 6.2 OSINT analysis measures with their corresponding values for the experienced OSINT case study.

<table>
<tr><td>OSINT Budget</td><td colspan="6">No budget except subscribed limited access electronic database</td></tr>
<tr><td rowspan="3">Exploration-Discovery</td><td colspan="3">Total Surfing Time</td><td colspan="3">30 hours</td></tr>
<tr><td>Total Bookmarked Item Count</td><td>50</td><td>Bookmarked Item Count Per Hour</td><td>2</td><td>Utilized Bookmarked Item Count</td><td>29</td></tr>
<tr><td colspan="3">Locally Stored File Count</td><td colspan="3">31</td></tr>
<tr><td colspan="3">Total Size of the Collected Material</td><td colspan="3">12 MB</td></tr>
<tr><td rowspan="4">Discrimination</td><td>Total Size of the Web Sources</td><td>6 MB</td><td colspan="2">Total Size of the Journal Sources [73]</td><td>6 MB</td></tr>
<tr><td>File Count for the Web Sources</td><td>26</td><td colspan="2">File Count for the Journal Sources</td><td>5</td></tr>
<tr><td colspan="3">Number of Human Contacts</td><td colspan="3">1</td></tr>
<tr><td colspan="3">Broken Link Count for Locally Stored Files</td><td colspan="3">1</td></tr>
<tr><td rowspan="3">Validation & Distillation</td><td colspan="3">Total Size of the Final Report</td><td colspan="3">200 KB</td></tr>
<tr><td colspan="3">Referenced Material (Footnote) Count</td><td colspan="3">42</td></tr>
<tr><td colspan="3">Information Verification Per Footnote Item</td><td colspan="3">3</td></tr>
</table>

- It's very important to establish a comfortable and customized working environment to access and store information. It's also very essential to exploit different kinds of open sources taking into consideration their nature, weak and strong points. (The kinds of open sources are explained in Chapter 3)
- Diversified open sources make huge amounts of information available to the intelligence analyst. These information contain many repetitions, many useless parts, are far to represent an integrated whole. The reality is that although the amount of information available for exploration tends to increase with time, the usable part of it remains almost the same. (Figure 6.6) This means that knowledge creation is far less slow than reproducing it in various forms. The intelligence analyst explores the open sources world, tries to extract from it the usable part of the information, and evaluating the usable part makes judgments.

[73] ScienceDirect (limited access electronic database accessed through university library), 2004, <http://www.sciencedirect.com>.

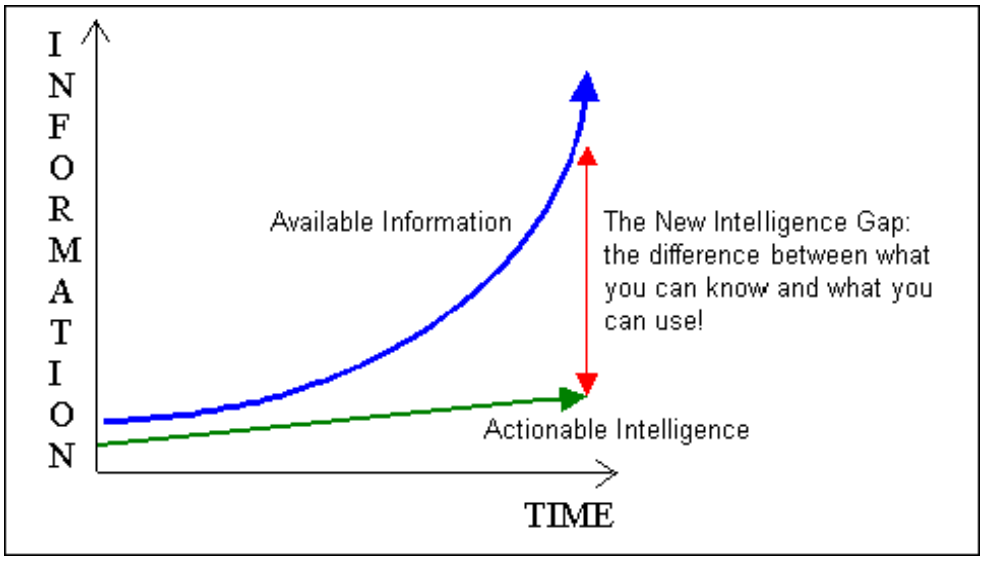

Figure 6.6 The New Intelligence Gap. (www.oss.net)

- Human sources should be of primary concern in OSINT making because they are the creators of the knowledge. Once created, the knowledge is represented and repeated in many forms, mediums. Trying to extract the usable part from the available information is in reality trying to reach the human knowledge. In evaluating the human knowledge, the possible errors in human knowledge and disinformation efforts should be taken into consideration.
- Subject matter experts probably exist on all subjects and they are essential in providing a reliable base of information on which to build analysis,
- Once the human sources are recognized, it's helpful to investigate the open source material edited or authored by them to check their consistency thus the consistency of the information provided by them.
- Huge open sources capabilities present a cooperative environment for intelligence analysts. In this cooperative environment, the mutual benefit is essential. The information requester and the information provider should exchange something and as a result of this exchange both parties should have a gain. The exchanges are in general money-information.
- Identifying key personalities for the defined case is very critical and getting the information from them is more difficult in compared with the other open sources. The money-information exchange does not work. The human sources respond if they feel a collaboration. There should be a legitimate reason for

him/her to respond. Information-information exchange is ideal in getting the information from the human experts.

- Storage of meta-information is very critical. In searching information through open sources; authors are the most critical meta-information to evaluate the quality and validity of the information.
- People tend to specialize in some areas and write on similar topics. For an intensive study of a single topic; it's a good search strategy to look for other materials that have the same authors, editors once you find information of high quality.
- Foreign language is an important barrier in evaluating open sources. It's one of the reasons for relying on other people (information brokers, human experts that can speak the relevant foreign languages) to acquire the required information. In return, it's one of the criteria in identifying key personalities for the defined topic.
- Some proprietary and/or classified sources as well as information may become open in time or vice versa. Thus, sustainable exploration of open source opportunities is required.
- The unavailable documents that were once available can reveal something. In order to detect these kinds of documents, local storage of essential documents is required.
- The Adobe Acrobat System can be proposed as the storage and organization software. Acrobat stores documents in their original format. It also includes useful utility programs for adding and reading comments on stored documents. Acrobat also allows hypertext linking within and between documents.[74]
- Beyond the Adobe Acrobat System, there is a need for an intelligence software that fulfills the requirements of every phase of the OSINT process.

6.2.2 OSINT Software

OSINT software is not an automatic OSINT generator, it is just a facilitator. It presents a customizable working environment to the intelligence analyst and displays

[74] Mats Björe, "Six Years of Open Source Information: Lessons Learned," Open Source Quarterly 1.1 (1995), <http://www.osint.org/osq/v1n1/sixyears.htm>.

different views of information so that the intelligence analyst evaluates it appropriately. Thus, OSINT software is a tool that adds value to the intelligence process.

It should not be evaluated just as a software component but as a whole that is composed of multiple software components. It is not just a database, a search engine, an internet tool, or a communication facility but it comprises

- databases,
- search engines,
- internet tools, and
- communication facilities.

The specifications of the required software can be determined by analyzing the requirements of every phase of the OSINT process. Thus, a grouping of specifications can be made according to OSINT phases. The required software specifications are listed below in groups:

Exploration-Discovery

- Facilitates the intelligence workflow and collaboration.
- Searches the Internet.
- Searches through the information repository of the intelligence organization
- In order to provide the sustainability to the exploration and discovery efforts; notifies the intelligence analyst of every new, updated information that is present in the selected open services in the determined areas.
- Searches / Finds / Organizes bookmarks.
- Checks the bookmark links periodically and notifies the changed / broken links.
- Has the indexing capability on the stored documents.

Discrimination

- Stores information in one common format.
- Has the commenting and underlining facilities.

Validation

- Adds relationships between the stored document, its bibliographic reference information, and the internet address it is downloaded from.
- Links reference information to the actual reference (if exists)
    - Displaying the reference trees, accessing the required reference...
- Relates the author part of the bibliographic reference information to the contact information of that author.

Distillation

- Lists the primary source and the other verifying sources for a citation.
- Lists the utilization ratio of sources as primary sources and / or secondary sources of information.
- Relates the final report to the collected material for the report.

Distribution

- Makes conversion between different kinds of document formats.
- Distributes the finished intelligence using various communication facilities such as e-mail, Internet, corporate intranet, and wireless devices.

The described OSINT software supports the OSINT process by increasing the efficiency and the effectiveness. The software does not have the analysis functionality, the analysis is done only by human beings. Thus, intelligence is a human-driven process that needs to be supported by a powerful software.

Chapter 7

CONCLUSION AND RECOMMENDATIONS

The objective of this thesis work is:

- to analyze intelligence in the 21st century,
- to state the importance of open sources intelligence (OSINT),
- to define OSINT integrated intelligence model, and
- to describe the OSINT making process by a case study of OSINT.

Intelligence has gone through some changes in recent years. New threat types, new intelligence missions have appeared, the old missions have started to be processed differently. The diversified open sources and services and the time pressure upon action have shaped the new intelligence process. Open sources intelligence has started being used extensively in intelligence production. A revision is required in the highly static intelligence model to integrate it with the open sources intelligence. This revision requires to introduce some dynamism and individualization to intelligence work and to organize the intelligence budget in a more efficient and effective way. The OSINT integrated intelligence model proposes direct relationships between the policymaker and the intelligence analysts, sets every intelligence analyst as the manager of his/her own OSINT making process, and leaves the tasking of the riskier intelligence collection to the policymaker that coordinates with the intelligence analysts directly. Thus, the intelligence analysts serve as the interfaces between the open sources world and the intelligence organization.

The intelligence analysts' OSINT making process is described as well. The key points in this process are to handle the huge amounts of information collected via open sources and services, to do source validation, and to distill the compiled information to serve the policymaker. A case study of OSINT is prepared for the intelligence problem: "The feasibility of making investment, business in China's Xinjiang province (or Xinjiang Uighur Autonomous Region) in the first decade of the 21st century." The analysis of the case study is done to describe every followed phase and to give input, process, and output information for the phases.

In conclusion, an intelligence analyst's OSINT making process is experienced with the lack of an OSINT budget and the findings/recommendations from this experience is documented.

Some OSINT analysis measures are devised to attach an OSINT report and these measures are presented with their corresponding values for the case study.

Design criteria for an OSINT software are prepared and grouped according to OSINT phases.

In the future, the same work can be experienced with an OSINT budget and a comparison can be made between the two.

An intelligence team to evaluate its effectiveness and efficiency can utilize the proposed new intelligence model.

An OSINT software that fulfills the stated design criteria can be developed.

SUMMARY

In this study, evaluation of the open sources in the contemporary intelligence production is examined. The study is comprised of seven chapters:

In Chapter 1; intelligence is defined, the basic terminology is given, the intelligence process (cycle) and some basic concepts are explained.

Chapter 2 focuses on the intelligence analysis. Contemporary intelligence analysis issues are examined and the required qualifications are given for the contemporary intelligence analyst.

In Chapter 3; openness concept is explained, in the light of this concept information is categorized, open sources information and intelligence are defined, and the range of open sources are stated and explained.

Chapter 4 makes an interrogation of the traditional intelligence model with the introduction of the diversified open sources, a new OSINT integrated intelligence model is proposed and explained.

Chapter 5 is comprised of an OSINT case study regarding “the feasibility of investment making in Xinjiang Uighur Autonomous Region in the first decade of the 21st century”.

In Chapter 6; the OSINT case study is analyzed, some measures for analysis are given, some findings/recommendations are stated and the design principles for an OSINT software are determined.

Chapter 7 concludes the study with the final words and future recommendations.

ÖZET

Bu çalışmada, günümüz istihbarat dünyasında açık kaynakların değerlendirmesi yapılmıştır. Çalışma yedi bölümden oluşmaktadır:

1. Bölüm' de istihbarat tanımlanmış, temel istihbarat terminolojisi verilmiş, istihbarat döngüsü ve bazı istihbarat temel kavramları açıklanmıştır.

2. Bölüm' de istihbarat analizi ele alınmış ve günümüz koşullarında istihbarat analizi irdelenmiş ve bu analizi yapacak istihbarat analistlerinin gerekli özellikleri ifade edilmiştir.

3. Bölüm' de açıklık kavramı ortaya konmuş, bilgi bu kavram ışığında sınıflandırılmış, açık kaynak bilgisi ve istihbaratı tanımlanmış, ulaşılabilir açık kaynaklar incelenmiştir.

4. Bölüm, çok çeşitli açık kaynakların ulaşılabilir hale gelmesi ile geleneksel istihbarat modelini sorgulamaktadır. Açık kaynak istihbaratı ile bütünleştirilmiş yeni bir istihbarat modeli önerilmiş ve açıklanmıştır.

5. Bölüm, "Sincan Uygur Özerk Bölgesi'nde yatırım yapma" konusunda hazırlanmış bir açık kaynak istihbaratı durum incelemesini içermektedir.

6. Bölüm' de, hazırlanan açık kaynak istihbaratı durum incelemesinin analizi yapılmış, bazı analiz ölçütleri verilmiş, bazı bulgu/öneriler ifade edilmiş ve açık kaynak istihbaratı yapmaya yönelik bir yazılımın tasarım ilkeleri saptanmıştır.

7. Bölüm genel değerlendirmenin yapıldığı sonuç ve öneriler bölümüdür.

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APPENDIX

THE SAMPLE SHEETS PREPARED FOR

INFORMATION VERIFICATION

Foot note ID	Primary Source	Other Sources
31	**China-UighurMuslimSeparatists-SpecialReportweb**	chinas_central_asian_power_and_problems.pdf
		shanghai_five.pdf
		workshop_central_asia_2.pdf
		sincan_uygur_ozerk_bolgesi
32	**chinas_central_asian_power_and_problems.pdf**	China-UighurMuslimSeparatists-SpecialReportweb
		shanghai_five.pdf
33	**workshop_central_asia_2.pdf**	look_before_NATO_leaps_into_the_Caspian.pdf
		workshop_central_asia_1.pdf
34	**look_before_NATO_leaps_into_the_Caspian.pdf**	chinese_energy_and_asian_security.pdf
		PRCEnergyPolicyintheFive-YearPlan
		sincan_uygur_ozerk_bolgesi_2
35	**look_before_NATO_leaps_into_the_Caspian.pdf**	030205_ce_forum01.pdf
		030205_ce_forum02.pdf
		chinas_central_asian_power_and_problems.pdf
		shanghai_five.pdf
36	**workshop_central_asia_1.pdf**	China-UighurMuslimSeparatists-SpecialReportweb
		central_asian_legitimacy.pdf
37	**look_before_NATO_leaps_into_the_Caspian.pdf**	030205_ce_forum01.pdf
		030205_ce_forum02.pdf
		shanghai_five.pdf
		central_asian_legitimacy.pdf
38	**look_before_NATO_leaps_into_the_Caspian.pdf**	030205_ce_forum01.pdf
		030205_ce_forum02.pdf
		chinas_central_asian_power_and_problems.pdf
		chinese_energy_and_asian_security.pdf
		workshop_central_asia_2.pdf
		workshop_central_asia_1.pdf

39	**chinese_energy_and_asian_security.pdf**	chinas_central_asian_power_and_problems.pdf
		PRCEnergyPolicyintheFive-YearPlan
40	**030205_ce_forum01.pdf**	prospects_for_chinas_influence_in_central_asia.pdf
41	**prospects_for_chinas_influence_in_central_asia.pdf**	030205_ce_forum01.pdf
42	**prospects_for_chinas_influence_in_central_asia.pdf**	030205_ce_forum01.pdf
		030205_ce_forum02.pdf
		chinas_central_asian_power_and_problems.pdf
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45	**oil_and_gas_in_Xinjiang.pdf**	030205_ce_forum02.pdf
		PRCEnergyPolicyintheFive-YearPlan
		central_asian_legitimacy.pdf
		chinas_central_asian_power_and_problems.pdf
		chinese_energy_and_asian_security.pdf
46	**look_before_NATO_leaps_into_the_Caspian.pdf**	030205_ce_forum01.pdf
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47	**chinas_central_asian_power_and_problems.pdf**	shanghai_five.pdf
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		PRCEnergyPolicyintheFive-YearPlan
59	**chinas_central_asian_power_and_problems.pdf**	workshop_central_asia_2.pdf
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		030205_ce_forum01.pdf
		prospects_for_chinas_influence_in_central_asia.pdf
		PRCEnergyPolicyintheFive-YearPlan
		look_before_NATO_leaps_into_the_Caspian.pdf
		oil_and_gas_in_Xinjiang.pdf
60	**workshop_central_asia_1.pdf**	030205_ce_forum02.pdf
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		central_asian_legitimacy.pdf
		chinese_energy_and_asian_security.pdf
		look_before_NATO_leaps_into_the_Caspian.pdf
		workshop_central_asia_2.pdf
61	**workshop_central_asia_2.pdf**	PRCEnergyPolicyintheFive-YearPlan
		chinas_central_asian_power_and_problems.pdf
		chinese_energy_and_asian_security.pdf
		workshop_central_asia_1.pdf
62	**workshop_central_asia_1.pdf**	euromoney

63	**workshop_central_asia_2.pdf**	PRCEnergyPolicyintheFive-YearPlan
		chinas_central_asian_power_and_problems.pdf
		chinese_energy_and_asian_security.pdf
		workshop_central_asia_1.pdf
64	**euromoney**	
65	**euromoney**	
66	**workshop_central_asia_2.pdf**	
67	**workshop_central_asia_1.pdf**	PRCEnergyPolicyintheFive-YearPlan
		chinese_energy_and_asian_security.pdf
68	**look_before_NATO_leaps_into_the_Caspian.pdf**	030205_ce_forum01.pdf
		030205_ce_forum02.pdf
		shanghai_five.pdf
		central_asian_legitimacy.pdf
		workshop_central_asia_2.pdf
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		shanghai_five.pdf
		central_asian_legitimacy.pdf
		look_before_NATO_leaps_into_the_Caspian.pdf

Referenced Material (Footnote) Evaluation of the Case Study		
Footnote ID	**Source Count**	**Source Count Excluding the Primary Source**
29,30	exclude	exclude
31	5	4
32	3	2
33	3	2
34	4	3
35	5	4
36	3	2
37	5	4
38	7	6
39	3	2
40	2	1
42	4	3
43	4	3
44	4	3
45	6	5
46	6	5
47	2	1
48	2	1
49	4	3
51	4	3
52	6	5
53	3	2
54	7	6
55	2	1
56	2	1
57	4	3
58	3	2
59	8	7
60	7	6
61	5	4
62	2	1
64	1	0
65	1	0
66	1	0
67	3	2
Information Verification per Footnote Item	**3,85**	**2,85**

Note: Some footnote numbers are skipped because they repeat nearly the same information in another referenced item and thus are not taken into consideration in computing the average information verification count.