The Adaptive Intelligence Communities in the Information Society

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Abstract

In recent years, we have been experiencing an irreversible technological progress and social transformation in the world. ***Information*** *is regarded as the major power behind the change. The society has been altered by rapidly developing information and telecommunication technologies and has gained a new structure. This new social organization is labeled as* ***"information society"****. The transformation of the society has also affected the* ***intelligence communities****. With a general outlook on the accommodation of intelligence communities to the information age, new debates are opened up with regard to intelligence process, intelligence organizations and intelligence itself. Three of these debates can be summed up as to* ***the primacy of Open Source Intelligence or Human Intelligence in intelligence gathering, the possibility of international cooperation of intelligence sharing in the information society and the ways for adaptation of intelligence organizations to the information age****.*

Keywords: information, intelligence, information society, intelligence communities

1. Introduction

The world has been going through a rapid progressive change where the information technologies and telecommunication systems have taken the leading role in the society. This unique change profoundly affects all major activities related to politics, economics and society – and hence to the intelligence area. The driving force behind this global change is believed to be "information". The universal use of advanced information and telecommunication technologies enabled free production, flow, access and use of information that has given rise to the emergence of a new type of social organization. The stated new structure is called "information society".

The transforming power behind the information society has inherently affected the intelligence communities. The irreversible technological progress and social transformation in the world introduced new debates, reconsiderations and internal criticism to the field.

In this paper, the aim is to analyze the presence of intelligence communities in the information society with respect to three questions:

1. Has Open Source Intelligence (OSINT) preceded Human Intelligence (HUMINT) in the information age?

2. Is it possible to establish international cooperation of intelligence sharing in the information society?

3. How should an intelligence service modify itself in the age of information?

These questions are important as they touch upon major disputable areas of the intelligence field where the debates can be of absolute scale. Yet, the thoughts have to be compressed within the limited size of this paper. The study starts with a review of the information, intelligence and the information society concerning their identifying elements and relationship among them. Next, the adaptive intelligence communities in the information society are laid out with regard to current prevalent debates of OSINT or HUMINT, possibility of enhanced international cooperation in intelligence information sharing and modification of the intelligence agencies. Conclusions and further remarks are presented in the final section.

2. Information and information society

2.1. What are information and intelligence?

The term *information* is used very broadly. In the dictionary Encarta[1], *information* is defined as:

1) definite knowledge acquired or supplied about something or somebody;

2) the collected facts and data about a specific object;

3) the communication of facts and knowledge.

Knowledge, on the other hand, is defined in the same dictionary as follows: "all the information, facts, truths and principles learned throughout

[1] Encarta is a digital encyclopedia launched in 1993 on CD-ROM, later expanded to include Internet – based incarnation and discontinued in 2009.

the time." Bell (1979) described knowledge as "an organized set of statements of facts or ideas, presenting a reasoned judgment or an experimental result, which is transmitted to others through some communication medium in some systematic form."

In other words, information is raw data processed to be useful in answering questions "who, what, where and when", whereas knowledge is collection and application of information and answers "how" questions (Ackoff, 1989).

According to Ackoff, there is a transition from data to information, to knowledge and to wisdom (Table 1). If we need to define *wisdom*, it is the process by which we discern and judge based on our accumulated knowledge. It can be said that information and knowledge provide us with past (what has been) or present (what is) while wisdom gives us the hints of future (seeing and shaping the unknown). As knowledge accumulates, a certain level of wisdom will be achieved which consequently leads to a better understanding.

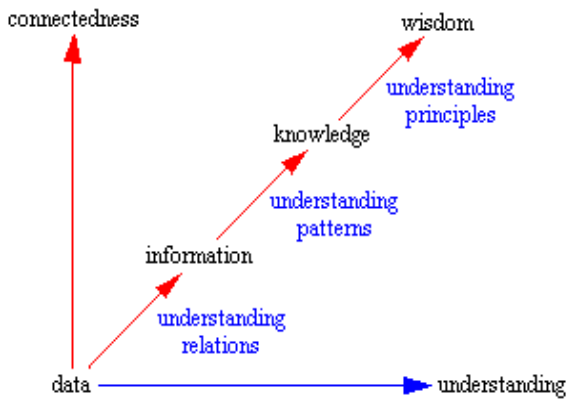

Table 1: Ackoff's diagram shows the relationship between information and understanding. Understanding is a cognitive and analytical process where wisdom is the evaluated understanding.

The term information provides various meanings for individuals in different working areas. Within the scope of intelligence field, information can be explained as "Data that is specifically organized for a purpose and verified to be accurate and timely, also gets the meaning through relational connection when presented within a certain context."

Intelligence is sometimes defined as only information. Moreover, these two terms can be used interchangeably. Intelligence, however, does not only mean accurate and relevant information but also covers the process of collection, analysis, evaluation, understanding and usage of that information for a purpose. It is not wrong to conclude that intelligence always includes information but not all information is intelligence. In other words, intelligence is the processing of information and knowledge obtained from several analyses and understanding as well as the end product of this processing. Therefore, information and intelligence cannot be used synonymously.

Intelligence process is designed to realize the transformation from raw data to enhanced wisdom. Thus, it should lead to an increase in understanding and a decrease in uncertainty. To what purpose it serves, the function of intelligence is to understand and define what has been going on and more importantly to see and shape the unknown. This is mostly why intelligence is called as an art based on knowledge and wisdom. When the collected raw information is processed and converted into intelligence, intelligence officers achieve a broader understanding based on their cumulative knowledge on a specific subject.

In the age of information, the sources of information have been varied enormously. This appears as a great opportunity for intelligence officers in intelligence gathering. However, as mentioned before, all information may not result in intelligence. In the information society, analyzed in the next chapter, the burden on intelligence officers has been increasing as they have to filter out and use both accurate and reliable information from bottomless sources of information. Fyffe (2011, p. 3) delivers it as "Good information is essential, but using intelligence wisely is a specialized skill." What is more to speak achieving foreknowledge through assessment and analyses of the information derived from diversified resources that individuals of the information society mostly own may necessitate collaboration of knowledge and wisdom of different intelligence organizations – this is discussed in another chapter.

2.2. Information society: Towards a global village?

> *"In recorded history, there have perhaps been three pulses of change powerful enough to alter Man in basic ways. The introduction of agriculture... The Industrial Revolution... (and) the revolution in information processing technology of computer."*
>
> *Herbert A. Simon*

Despite the several attempts by scholars, there has not been an established definition for the concept of *"information society"*[2] yet, because the information society is continuing its (r)evolutionary process. As long as the globalization and human creativeness brings up technological developments, the information society will be definitely gaining new defining features.

Information society, however, can be described as the post-industrial society which is based on instant production and distribution of information and in which information technology (IT) is transforming every aspect of political, economic, social and cultural life in a manner of recreating individuals' daily routines. Information has obtained "a central role in all activities from government activities to business transactions and to leisure pursuits" (Webster, 1995) in this society. Hence, it is a new type of social organization based on free production, flow, access and use of information and knowledge as a result of global use of information and telecommunication technologies.

Frank Webster (1995) argues that the information society has five identifying components:

1. *Technological innovation*: Technological developments have an undoubted effect on the evolution of the information society. The merging of information and communications technologies (ICTs) characterized this new society.

[2] There are divergent terms such as post-industrial society, technotronic era, knowledge society, information society etc. in usage to identify the emerging society. There is not a consensus on a single term yet. Like the United Nations prefered to name their conferences as World Summit on the Information Society (WSIS), in this paper, the term "information society" is prefered to describe the new evolving social structure based on information and communication technologies.

2. *Economic value*: "Information-based economies" are growing where the economic activities are based on information goods and service producers rather than agricultural or industrial manufacture.

3. *Occupational change:* Due to economic value changes, informational work forms the basis of employment in the information society. Therefore, "the predominant group of occupations consists of information workers" (Bell, 1979).

4. *Spatial flow:* Technological innovations have eliminated the limitations of time and space in respect to the flow of information. The information networks in the "cyberspace" dominate the social interaction. Therefore, individuals of information society can communicate and manage their social affairs at national, international and global level irrespective of their locations.

5. *Cultural effects:* As a result of the aspects listed above, the social and cultural behaviors of individuals have been changing accordingly. Humans now have a computerized life where internet has become the prominent element of their information and cultural environment.

Bearing these notions in mind, the statement made by *IBM Community Development Foundation (1997)* summarized overtly what information society means in the 21st century:

"Information Society: A society characterized by a high level of information intensity in the everyday life of most citizens, in most organizations and workplaces; by the use of common or compatible technology for a wide range of personal, social, educational and business activities, and by the ability to transmit, receive and exchange digital data rapidly between places irrespective of distance."

Technological developments alter the society in social and cultural fractions. The accelerated developments in information and communication technologies, consecutively increases in information networks and in information circulation have revolutionized the social structure. This changing structure also brought up a new working environment for society which is totally different from previous society contexts such as the industrial society period. An obvious example is how the social communication has changed remarkably in this new society. In the industrial society, mass communication of one-way messaging dominated the social affairs. With the wide spread of Internet, mobile communication, social software and digital media; interactive communication has increased

through developed horizontal networks. Consequently, interactive communication of the information society has superseded mass-media communication of the industrial society.

In the age of information, interactive communication on cyberspace is available as long as there are telephone wires, coaxial cables, fiber optic lines or electromagnetic waves. The World Wide Web rapidly grew since the end of the 1990s and so did the number of personal computers. In addition, there emerged a new type of intelligent web services enabling the "participative web and user-created content". These new services that allow users to share, adapt and create content are labeled as "social media" and Web 2.0 (Verdegem, 2011).

In the literature, the term social media is an umbrella concept that describes social software and social networking. It refers to the web based applications that facilitate creation and exchange of user-generated content and eventually allow individuals to communicate and to track discussions or changes across the Web as they happen. Therefore, communication has transformed into the interactive dialogue within the information society.

Social media provides means for:

- Co-creation of content (blogs and microblogs, wiki, Flickr, Twitter, Youtube);
- Social networking (Facebook, Myspace, Netlog);
- Sharing of experience and relevance (shopping sites, Amazon, Google Pagerank);
- Connectivity (Wi-Fi);
- Crowdmapping (i.e. Syria tracker)[3];
- Wiki applications (Wikipedia, Wikibooks);

The users benefit from all communication products which are offered by social computing: writing blogs, picture, video and music

[3] Crowdmap is a tool that allows users to crowdsource information and see it on a map and timeline. Users gather information from websites, news sources and cell phones and turn it into a visualization through crowdmapping. The data collected is aggregated into a centralized platform. It can then be displayed on a map or timeline. The application works entirely online so there is no need to download software. CrowdMap allows users to build interactive Google maps that can help them plot reports and collect the data they need quickly. Timelines allow the user to track reports and maps generated over a period of time. The user can set date filters to determine what was happening and when it happened. Real Time tracking tools allow users to stay on top of the information gathered in a way that is easy to understand.

sharing, wall-postings, e-mails and instant messaging. Globally, more than 2 billion people (which are 30% of world population) use internet today. Among these users, around 711 million people have Facebook accounts.[4] By June 2008, social networking sites alone were attracting 165 million unique visitors monthly and there are more than 100 million blogs worldwide (Ala-Mutka, 2009). The remarkable growth of social media tools in such a short time have occurred in an inexperienced manner. Many social computing applications such as Facebook and Twitter have become global phenomena allowing their users to share thoughts, information or messages in real time to a large audience (to their "friends" and "followers").

For the intelligence field, information has become more obvious and ironically more hidden in the information age. To track the information or the owner or the user of the information has merged under the scope of intelligence activities. The members of the information society have become technology – addicted (or web addicted) that facilitates the production and spread of information on a dynamic basis. Intelligence communities have to adapt to this changing era which is characterized by dynamism, speed, openness, interactivity and technology. In the following part, the effects of the information society's transforming aspects on intelligence communities are examined with respect to the role of HUMINT, intelligence information sharing and modification of intelligence services.

3. Adaptive intelligence communities in the information society

Before examining the intelligence communities in the age of information, we should ask one critical question: Have the definition and core of *intelligence* changed in the information society?

First of all, we should re-define what information means to us. In today's world, anything that can be digitized or encoded is regarded as information. Cyberspace is a land of information or rather, information *garbage*. The World Wide Web has become an invaluable information resource. In addition, information distributing tools have been more diversified such as web pages, blogs, forums and wiki applications than the conventional forms of books, encyclopedia, magazines, and databases. So, has changed the value and spread of the information. Since the information is available so quickly and ubiquitously, there is an unavoidable information

[4] The statistics are cited from http://www.internetworldstats.com/stats.htm

overload that brings up the risk of huge amounts of available information which are of lower value. Nonetheless, the value of information in intelligence relies upon its ability to affect a decision, behavior or outcome.

As a result, is intelligence gathering of all available information from every single global communication tool? Or, is it the whole process of timely obtaining of needed information and analyzing of this information? Concisely, in the age of information, *intelligence is still timely and accurately gathering and processing of relevant and necessary information that provide insight to decision-making process.*

Therefore, if the ultimate objective of it is to find answers to "why", "how" and "what happens next" questions, intelligence officers are obliged to collect, analyze, evaluate, understand and use accurate and timely information.

In this study, intelligence communities in the information society are considered from various aspects of high importance. In the sub-chapters below, we have given our answers to the questions of:

1) Has OSINT preceded HUMINT?

2) Is it possible to establish international cooperation in information sharing?

3) How should an intelligence service modify itself in the age of information?

3.1. Traditional versus Contemporary Intelligence Gathering

The intelligence communities gather information from various resources through different tactics such as espionage, communication interception, crypto analysis, cooperation with other institutions, assessment of open sources, etc. These activities can be legal or illegal, technological or non-technological but the core will never change: *to obtain accurate and timely information.*

Specifically, there are six main categories that describe the ways that intelligence is collected:

- SIGINT: Signals intelligence – gathered from interception of signals;
- HUMINT: Human intelligence – gathering of information from human sources;
- MASINT: Measurement and Signature Intelligence;
- GEOINT: Geospatial intelligence;
- OSINT: Open Source Intelligence;
- IMINT: Imagery intelligence.

It has been argued that modern practice of intelligence gathering has differentiated from traditional methods such as HUMINT. The proponents of this statement claim that contemporary approach is based more upon Information and Communication Technology (ICT) and OSINT. OSINT was, indeed, popularized when intelligence analysts realized that information is "stove piped" over time where most of the information is available in isolated environments. Furthermore, they argue that the Internet and recently, social media have evolved as an essential resource for intelligence agencies. There has been a significant shift toward relying more on open-source information. Social media is stated to provide the best platform for Open Source Intelligence (OSINT), as it encompasses legally obtainable, voluntarily encoded, mostly valuable and real time public information. By considering social media as "primary open source", the intention may be to get a predictive behavior or to obtain any information that has strategic importance.

It cannot be denied that social media is influential in all areas from politics to economics and to cultural affairs. Indeed, social media sites, such as Twitter and Facebook, got major attention during recent events like the Arab Spring. These popular networking sites have been claimed to help organize protesters and provoke the revolution. Social networking can offer the means to organize and mobilize mass groups irrespective of their locations. Based on this statement, some analysts argue that social networks contain mass information that will help them to predict what is coming next. However, *social network sites have not, as of yet, been an accurate predictor of future events*. Hence they cannot be regarded such as a revolutionary analytical tool for intelligence officers.

Social networks and web applications are useful in tracking recent/current incidents or get an overall idea of the big picture. However, social media sites are not necessarily predictive of what might happen. For example, Twitter and Facebook were very useful for intelligence officials to monitor real-time events in the Egypt revolution during its occurrence, neither social network gave any indication it would happen prior to its beginning.

Open Source Information cannot be disregarded in today's world. Open Source Information based primarily on the Internet can be used for background briefing, targeting and tracing individuals or organizations, providing support for cover. However, it must be remembered that search engines or social media are privately held companies with no obligation to serve public interest. Moreover, not everything is available digitally

no matter how far the Internet and its elements have penetrated in our lives. Most importantly to remember, the information provided by the public sources is not intelligence if the information is not processed and value is not added to the information.

Why is HUMINT important in the information society?

1) Human source intelligence (HUMINT) is dependent on **interpersonal communication** that enables intelligence officers to evaluate their resource face to face. In today's technology and Internet saturated world, communication through e-mail, Internet chat, Internet dating, text messaging, and even the telephone have replaced previous face to face personal communication. Today, everybody – that can be a secretary, a manager and IT expert – can do shopping, banking, chatting etc. online with no true human interaction in their life. The avoidance or lack of the personal interaction leaves an unrealized psychological desire of "talking", which HUMINT officer can take an advantage against their unwitting subject. Also most individuals have a unique desire for excitement through human interaction[5], especially when the individual is able to speak about themselves or able to speak about a subject which he has a distinct interest. Many unsuspecting individuals find talking about themselves self-gratifying, as they feel a sense of pride or accomplishment. Others feel they are subject matter experts in their respected fields and wish to impart their knowledge onto others. And yet, there are still those who find the necessity to share information with others and gossip about situations they may not be actively involved. To sum up, as the relationship between the HUMINT officer and the individual develops, so does the freedom of information through skillful elicitation of conversational gates which lead the individual into sharing information either wittingly or unwittingly (Taylor, 2010).

2) With globalization, the definition and nature of security threats and actors have changed. Specifically, terrorism has become a global security threat. In the information society, terrorism and organized crime exist as the two important threats to global security. We ask a simple question here: Is that proper to put exclusive reliance on technology based methods in the fight against terrorism?

"...the Cold War enemy was big and noisy, today's terrorist organizations have "small signatures" and a "low signal to noise ratio."

[5] In HUMINT method, what motivates an agent to spy is Money, Ideology, Coercion and Excitement (MICE). Excitement is given as an example in the study; otherwise all these factors are still important.

That is, they can hide easily and blend into the activities of normal societies... Many terrorist organizations do not even admit to their own existence, and documenting a formal chain of command is probably a low priority for them…" (B. Berkowitz. 2002, p. 291-2)

It is known that through the rapid absorption and adaptation of commercial information and telecommunication products, terrorists use the Internet or other technological tools at most to gather intelligence, spread propaganda etc. Our adversaries are also responsive to technological developments. With the fast spread of information, they can find out the set of tactics, technologies, or tradecraft techniques used by case officers and quickly change their "footprinted" practices. For example, when bin Laden reportedly learned of SIGINT tracking of satellite phone activity, al Qaeda discontinued the use of normal phones and took up using disposable cell phones. Another good example is how the Madrid train bombers ingeniously used unsent letters in email accounts to avoid detection of their communications. (Butler, 2009).

With OSINT, SIGINT, MASINT etc., an intelligence officer can obtain every detailed technological data, process them and hand over to decision makers. However, this technology based methods can lead to important mistakes in the decision making process. For instance, in the Iraq case, the intelligence gathered was more based on technology, but less human based. However, it turned out that decision makers had not got the sufficient and reliable intelligence whether Saddam acquired the weapons of mass destruction (WMDs). The son of Saddam Hussein, paranoiac Uday Hussein had been well known for his interest in women and drinking. He was also controlling the oil trade within the embargoed Iraq. Uday and his Western-originated "business" partners were used to hang out together. If the intelligence officers had motivated an agent within the circle of Uday's friends, with whom he had been carousing, they might have learnt that his father had secretly got rid of the WMDs. Thus, the war would not have occurred.

This proves us that Human Intelligence (HUMINT) serves uniquely valuable; it can obtain information that more technologically-oriented assets cannot. For example, a well-placed human source is the best possible intelligence asset for counterterrorism that will lead to consistent intelligence. The level of failure/mistake is lower in HUMINT based information collection than the other means. Although an HUMINT activity will be time consuming, its reliability for the outcome is worthwhile.

Technology is an indispensable part of intelligence. However, if an intelligence analysis is based on technology driven products, this will not bring a successful contribution to the security decisions.

3) Another point is that the resource of OSINT is also human beings. The content is user-created, as stated above. Indeed, people are still the primary source of information. The best reliable source is always eye-witnesses who encountered first-hand accounts of any given situations. Undocumented information is gathered from people and these human sources mostly provide timely and accurate information than documented or published information available. Therefore, OSINT is definitely in interaction with HUMINT.

As a result, HUMINT will be the heart, soul, and brain of 21st century intelligence. Without HUMINT, most technical intelligence is noise. Without HUMINT, decisions will continue to be made in a vacuum, at great cost (Steele, 2010). Therefore, the traditional ways of intelligence gathering cannot be excluded from contemporary intelligence gathering and also, the highly contributive OSINT should not be regarded as the core for information collections and analyses. Intelligence draws on both open-publicly available-sources of information as well as secretor clandestinely obtained information that the target of analysis wishes to conceal. Hence, both traditional and contemporary methods of intelligence gathering should be practiced in a nested and balanced manner.

3.2. International cooperation in intelligence information sharing

Intelligence Communities Information Sharing:

Shared Information → Deeper Knowledge → Enhanced Security

The new threat environment in the global society is dynamic. There have emerged non-state and intra-state actors that pose non-traditional threats. These actors and their motivations as well as methods emerge and develop rapidly due to advances in technology.

By adopting technological advantage immediately, they can move, act or mobilize quickly. This brings up the necessity for the decision makers of fast reacting ability. That is why the burden of intelligence producers increases, having the task of gathering needed and relevant information

and process it to obtain intelligence for their customers. How should intelligence communities take action to tackle these new threats and recent obligations? Since the structure of security threats have transformed towards international form, so should the intelligence communities change their attitudes towards more international cooperation. The International collaboration should be achieved for intelligence or information sharing to respond effectively to the evolving threats of our society. For an ideal structure of intelligence-sharing relationship, a common ground comprised of shared values should be established. These values are:

- **A "common threat" concept**: The nation states should obtain a common threat perception and agree on what constitutes the new security threats in the global society. If the purpose is an international fight against these new threats through intelligence cooperation, then the threats should be understood in the same way by all states.
- **Mutual interests**: The stronger the mutual interests, the higher the international intelligence sharing. The nations' interests will merge as much as they achieve their set of mutual threats. With common threats and mutual interests, the states will get a common understanding of intelligence.
- **Trust**: For the desired outcome, it is necessary to trust the state/organization that the information is shared with. The core elements of information-sharing relationship are state interests and trust between them (Walsh, 2009). Mistrust is the main barrier to fully effective intelligence-sharing. It is mostly caused by diversified national interests of the partner states. Hence, it is crucial to obtain a common set of interest for building trust within the intelligence communities. Also, to achieve a common trust impression, the information flow between the counterparts should be mutual. Also, the relationships should be set on an equality basis-no privileges.
- **International trainings**: The international trainings will pave the way for the establishment of informal (personal) networks that contribute to the intelligence cooperation. These training programs will assist the formation of a common terminology, promote the common value system and enhance the trust atmosphere. Furthermore, through these trainings, the intelligence abilities will be improved. As a result, the quality of the information produced and shared will be enriched.
- **Collective operations**: Cooperative operations will boost the common understanding; enhance the trust between partners and increase efficiency in combating against mutual threats.

- **Institutions**: The problems are unavoidable in any kind of multi-partner cooperation. An institutionalized structure will serve useful function to mitigate the foreseen or unpredictable complications. Walsh (2009) argues that intelligence should be shared through anarchic institutions. As a result, these institutions will improve the effectiveness and cooperation between the competent states with respect to information-sharing. An institution, like the Trevi Group and Europol[6], will offer support service such as fast information exchange, coordination, expertise, training, sophisticated intelligence analysis and operational provision through a secure communication line. The institution will work on the basis of information and intelligence supplied by partner states or gathered from other sources. In other words, the mission of the institution will be gathering, analyzing and disseminating the relevant information regarding common threats for mutual gains and common benefit.
- **A common will**: cooperation cannot succeed if the relationship is not based on good will. Specifically in the intelligence activities where secrecy and mistrust stand as the main impediments, an effective collaboration will be possible only if states present their desire for true partnership in information sharing.

It may be convenient to start with intelligence cooperation in a limited area such as terrorism and organized crime where common threats and common interests can be defined easily. International terrorism is one of these areas. Terrorist acts have been a major concern for the international community. First of all, the cooperating partners should formulate and agree

[6] The ***Trevi Group*** was a predecessor to Europol. It was created as an intergovernmental forum by the Member States in the 1970s as a part of European political cooperation. The Member States' interior ministries and security services used the Trevi Group to coordinate national counter-terrorism efforts that had cross-border implications. Trevi established secure communication links between Member States to share intelligence on terrorism and sponsored the exchange of information on training and equipment and investigative methods. The *European Police Organization,* or ***Europol***, was created by a convention signed by all Member States in 1995 and began operations in 1999. Europol encourages intelligence-sharing by obtaining and analyzing intelligence provided by the Member States, notifying Member States when it has "information concerning them and of any connections identified between criminal offences", providing "strategic intelligence" and preparing "general situation reports", and, since April 2002, establishing ad hoc teams of staff from Europol and interested Member States to collect shared intelligence on specific terrorist groups (quotations from Europol Convention, Articles 3.1 and 3.2).

upon a definition of "terrorism". If a consensus can not be achieved on what constitutes a terrorist activity, this will hinder the cooperation in intelligence sharing. For example, Turkey has for a long time been fighting against PKK terrorism. However, PKK is not regarded as a terrorist organization by some states, as known[7]. Under these circumstances, an effective collaboration cannot be realized due to lack of trust and a common terminology between the partners.

Without a doubt, intelligence liaison is a vital element of any counterterrorism policy or operation. A foreign security service can be closer than the other security services to the front line of conflict with particular terrorist groups, have longer experience in monitoring them, and better access in attempting to penetrate them (Butler, 2009). If a mechanism can be established which enables common use of intelligence or sole information gathered by these intelligence agencies through direct or indirect methods as well as other sources, this mechanism may make a major contribution into the fight against terrorism. States can take necessary steps to prevent terrorist acts by provision of early warning as a result of exchange of information. The international intelligence cooperation can be realized through a three step action plan: First, international trainings can be held that enable informal networks and promote the trust atmosphere. After the trust is obtained in the relationship, information sharing will follow. Then, the last link of the chain is the joint practices and cooperative operations.

There can be some setbacks in the international intelligence cooperation due to undefined borders and degrees of secrecy field, mistrust or interest clash of the partners. Moreover Intelligence agencies can be particularly reluctant to share full details with other countries, out of concern to protect the clandestine "sources and methods" used to obtain intelligence. These obstacles can be surmounted by adopting 1) a more explicit definition of these secrecy borders, 2) a mindset of common set of values, common terminology, 3) common will to fight against common threats, 4) stronger mutual benefits, 5) an institution. These inducements will create a powerful incentive to continue collaboration. Moreover,

[7] PKK is recognized and classified as a terrorist organization by Western countries including the European Parliament and the Council of Europe. Since 1984, indiscriminate violence and terror waged by the PKK have resulted in death of more than 30.000 Turkish citizens including elderly, women and children and large economic loss. (The statistic has been taken from the website of Ministry of Foreign Affairs of Turkey).

international institutions and agreements can help states overcome mistrust and engage in mutually beneficial cooperation (Koremenos et al., 2001).

Institutions, formed by agreements, can encourage cooperation even when the degree of trust between the states involved is not very high. An agreement governing information sharing will set out the rules about how widely a receiving state can disseminate shared intelligence, establish common security procedures and standardize technical terms, code words and formalize the training across the participating intelligence services. It will also include safeguards that protect the interests of both information senders and receivers. The agreement should also explicitly specify what types of intelligence will and will not be shared – that is to say states will clarify that they will not share information regarding, for example, sensitive counterintelligence information, bilateral or commercial issues, etc.

To remember, intelligence is based on knowledge and wisdom. In the information society in which security threats are also taking advantages of information and technology, a united effort is necessary for the security of nations' welfare. This necessitates a cooperative intelligence process against these common threats. More intelligence information sharing will boost the knowledge within and between the intelligence communities. With deeper knowledge, understanding will increase and the outcome will be more high-class intelligence that decision makers are in need of.

3.3. The Adaptation of the Intelligence Services

Because the customers demand them to be more reliable and effective in the information age, the intelligence services are questioned how to modify themselves in the new security environment of the information society. Some argue that "reorganization" can help an intelligence agency to adapt to the latest conditions of information age. In the information age in which information and technology are the driving force, as stated in the above chapters, circumstances change rapidly and unpredictably because of fast creation, dissemination and usage of information.

"We live in a moment of history where change is so speeded up that we begin to see the present only when it is already disappearing."

R. D. Laing

On the other hand, any reorganization by its nature is both predictable and slow. Until a reorganization process has been completed, the causes that led to it may have been replaced by new and different ones.

Thus, reorganization is not suited to address these rapidly changing conditions (Andrus, 2005). Rather than reorganization, the Intelligence service should be transformed to a dynamic organization that has the ability to reshape itself by continuous learning and adapting according to the developments in the society. This dynamic, **self-organizing organization** structure can be gained if:

- Intelligence officers are allowed to act more independently. Therefore, they can decide which task to perform in line with the changes in a security situation.

- Intelligence officers get expertise in tradecraft. For independent action, they should acquire a certain level of trust that can be engendered by attaining expertise in the practice areas.

- Intelligence officers get more feedback from the national security environment. Hence, they can learn from and adapt to the changing circumstances.

- Intelligence officers know more about strategic objectives. The officers can self-check whether their own piece of work is still fitted to the strategic intelligence objectives as long as they are aware of the changes in them.

An intelligence service will gain a dynamic entity that is able to react quickly to the changing security conditions as its officers get more elastic and self-organizing features stemming from their expertise in tradecraft, feedback from their addressees and proportional freedom in action. Intelligence officers are the nucleus of an intelligence service. The dynamism should start within the nucleus so that the body can follow the process.

A self – organizing intelligence service will necessitate **less bureaucracy and less hierarchy**. An information age intelligence service should move from a rigid, hierarchical structure towards a more elastic and networked organization.

Another issue that should concern the international communities is **"information management"**. How can intelligence officers examine large volumes of ever-changing data, find the most useful information and process them in time? The vast amount of information available today on the World Wide Web (WWW) and other published sources has great potential to improve the quality of decisions and the productivity of consumers. However, the WWW's large number of information sources and their different levels of accessibility, reliability, completeness, and associated costs

present human decision makers with a complex information gathering planning problem that is too difficult to solve without high-level filtering of information (Lesser, 2000).

OSINT is an important information gathering method in the huge pool of information. All this information has to be gathered, grouped, measured and in the end analyzed. As this will be a daunting and inefficient work load, some specific criteria should be defined to create priorities and to achieve a constant selection process, to find and monitor reliable sources. Therefore, intelligence collectors will know their sources and develop accurate assessments of both the sources and the information gathered – or shared. Social media, for example, has emerged as important global phenomena and a rich information resource as a result of ICT. It also affected intelligence gathering activities. Getting Information from social media requires **good communication and data mining skills** of intelligence officers.

Confronted by the new challenges of the Information Age intelligence communities must adapt and change. Another initiative that an intelligence service can adopt is a system that would **utilize the private sector**. Private sector has access to more capital and the ability to move more quickly than a government organization. At the same time, this system would encourage government intelligence operations to concentrate on the specialized, high-risk activities they are uniquely able to perform. Also, intelligence communities can subsidize commercial and academic sources to ensure specialized or additional expertise for surge situations (Goodman, 2000). Intelligence services will need mechanisms that keep these experts at arm's length. The challenge for intelligence officials in the Information Age is to understand how to integrate these indirect mechanisms into their operations. One alternative could be to work through with some public institutions or private organizations such as science foundations (Goodman, 2000).

4. Conclusion

In the first part of this paper, the major concepts used in the study are defined. Then, the relation between information, knowledge and understanding is evaluated. After stating how understanding develops with deepened knowledge, the concept of intelligence is examined with respect to its difference from sole information. Intelligence is not only accurate and relevant information but also the process of collection, analysis, evaluation,

understanding and usage of that information. Afterwards, the defining characteristics of the information society are given. It is also stated that information society is an enduring development that indicates the changing era. Information and technology are the driving forces behind the information society. Owing to the developments in information and communication technologies, the social communication has gained an interactive feature in the society. With the recently accelerated spread of the Internet, mobile communication, social software and digital media; interactive communication has increased through developed horizontal networks. Today, individuals of the information society can freely create, access, use, share and distribute information.

Next, the effects of the information society's transforming powers on intelligence communities are examined with respect to the role of HUMINT, intelligence information sharing and modification of intelligence services. The analysis started with clarifying whether the meaning and core of *intelligence* changed in the information society. It is stated that, *intelligence is still timely and accurately gathering and processing of relevant and necessary information that provide insight to decision-making process* in the age of information. In line with the purpose of the study, three questions have been set relating to the subject of "intelligence communities in the information society": 1) Has OSINT preceded HUMINT? 2) Is it possible to establish international cooperation in information sharing? 3) How should an intelligence service modify itself in the age of information?

The first question has been answered as the traditional methods of intelligence gathering, specifically HUMINT are still important in the information era. The contemporary method of OSINT is increasing its reputation as there has been a significant shift toward relying more on open-source information. Recalling the reasons explained above (sub-chapter 3.1), intelligence communities should promote HUMINT activities while developing their OSINT abilities. The second question of a possible international cooperation in intelligence and information sharing has been solved by suggesting a set of common values that will facilitate to achieve a common ground. It is also explained why states and intelligence agencies should involve in more information-sharing activities in the age of information and technology in which the security threats diversified in their nature. An ideal form of information-sharing can be achieved through adoption of a common value system and ethics, common threat, mutual interest, trust and institutions, that may encourage and facilitate intelligence

sharing between the allies. Finally, the intelligence services have been appraised in terms of their need for a self-organizing, less bureaucratic and less hierarchical structure as well as an advanced ability of information management in the age of information.

To conclude, in the age of information, technology and computers will provide us a huge pile of information by that we can build our knowledge on. However, intelligence necessitates good information gathering but also virtuous skills to process the information collected. Our skills will develop as much as we get wisdom. Wisdom is a human state that a computer can never have the ability to possess and intelligence is based on wisdom which is a brain activity that ICT can never encompass.

"Eventually NSA may secretly achieve the ultimate in quickness, compatibility, and efficiency – a computer with petaflop and higher speeds shrunk into a container about a liter in size, and powered by only about ten watts of power: the human brain." (Bamford, 2012)

Hence, intelligence is and will be a human doing in terms of its practice and resources.

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