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The information of a mass destruction range – OSINT in intelligence activities

> Where is the wisdom we had lost in the knowledge?
> Where is the knowledge we had lost in information?[1]…
> Where is the information we had lost in bites…

In the current world defined as the information civilization, information has become an elementary and strategic raw material whose value, apart from its intellectual input, is perceived in terms of being a precious asset. It is claimed for a reason that the one who owns knowledge – information to be more precise and exact - owns power. One must agree with James Gleick that information is omnipresent, it governs the modern world – supplying it with blood and fuel.[2] The resolution adopted by the United Nations General Assembly in 2016 included recommendations to treat access to the Internet (regarded as the biggest source of information) in the same way as the right to live and one of the basic human rights.[3] The information itself has also became an element of an information war, the current mode of global fight to achieve superiority over the adversary, to gain certain strategic goals, to dominate in the security environment. Glynn Harmon assumes that information is a kind of metaenergy which tends to move more energy and decides about vibrancy of activities taken by individuals.[4] General Shalikashvili took note of this relationship professing that as long as the information on his victory shows up in the open source media, on CNN, he will not recognize that he had won the war.

The concept of information is complex and occurs in numerous scientific disciplines. It was used for the first time in the late 19th century by an Austrian scientist Boltzmann to describe changes in the physical processes. Nevertheless, it is an American mathematician, Claude E. Shannon, who is recognized as the father of the information theory. For him information constituted the selection of possible choices. He defined and assigned an information measurement unit to **a bit**, i.e. the volume of information which is essential to select between two equally probable and mutually exclusive options. According to the International Standard ISO 5127:2001 information is the data, processed, organised and correlated to give them

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[1] T.S. Eliot, *Choruses from the Rock*, https://www.bayes.it/pdf/Choruses_FromTheRock.pdf [access: 19 VI 2018]

[2] J. Gleick, *Informacja – bit, wszechświat, rewolucja.* Kraków 2012, p. 14.

[3] See. *Report of the Human Rights Council on its thirty-second session*, UN General Assembly, Human Rights Council, Thirty-second session, A/HRC/32/L.20, 27 VI 2016.

[4] See. G. Harmon, *The measurement of information,* Information Processing and Management 1984, no. 1-2.

the real substance.[5] It applies to facts, notions, objects, events, ideas and processes.[6] According to Piotr Sienkiewicz information is a collection of facts, events, features included in a message/news, and provided in a form that enables the recipient to develop a relevant attitude towards it and undertake adequate mental or physical activities.[7] Information, as Merriam-Webster rightly points out, is simply the knowledge acquired from other people, studying, or observations and research. In other words, information – according to the definition given by *The Dictionary of Polish Language*[8], is basically intelligence.

The following particular functions of the information may give a better understanding of the notion itself:

- **illustrating function**– describing reality, reflecting its image;
- **decision-making function** – is a motive for actions;
- **steering function** – building computer systems, knowledge base, being at the core of planning and taking best rational decisions;
- **progressive function** – developing knowledge;
- **capital-building function** – making you dependent on financial resources, facilities, people and their knowledge;
- **culture building function** – addressing spiritual needs of people;
- **communication function** – enabling participation in the social life;
- **integration function** – fostering the development of interpersonal relations;
- **ideological function** – developing the awareness of the society's participation in the public life of the state;
- **opinion shaping function** – shaping views, public opinion on a given topic[9];
- **informative function** – providing necessary knowledge making analytical work more effective;
- **coordinating function** – organising and harmonising parallel actions;
- **monitoring function** – verifying and assessing the quality and coherence of data, its functionality according to the established security rules.

Based on the above list one may assume that information is virtually a commodity, an artefact made by human being, which has its price and a recipient. It is a constituent of human's knowledge and the key factor to be considered in the process of decision making and organizing processes at the production phase. Thus it contributes to the creation of a specific analytical product.[10] To make this product possibly most sufficiently valuable, the information should feature the following qualities to the maximum possible extent, i.e. it needs to be:

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[5] ISO 22320:2011, *Social security – Emergency management – Requirements for incident response*, November 2011.

[6] ISO 2382-1:1993, *Information technology – Vocabulary*, Part 1: *Fundamental terms*, November 1993.

[7] P. Sienkiewicz, *10 wykładów*, Akademia Obrony Narodowej, Warszawa 2005, p. 62.

[8] *Słownik Języka Polskiego*, M. Szymczak (ed.), vol. 1–3, Warszawa 1978–1981, p. 863.

[9] See. B. Stefanowicz, *Informacja. Wiedza. Mądrość*, vol. 66, Warszawa 2013, pp. 42–45.

[10] Ibidem, p. 36.

- **precise** – providing accurate and reliable reflection of reality;
- **up-to-date** – available on an as-needed basis to decision makers, enabling them to act accordingly, and when it becomes the grounds for action-taking;
- **complete** – it gives decision makers all required facts and details, gives the full picture of situation without any distortions;
- **significant** – useful for decision makers to pursue specific requirements occurring in special conditions.

Each source of information has its inherent features, and is perceived differently by each of us. Information on the Internet is deemed as reliable and easily accessible, the TV-originating information is treated as unbiased and valid, and the press information balanced and solid.[11] From the studies carried out by Krystyna Polańska, it transpires that the key elements in assessing the veracity of information comprise: trust in a source providing the information, the validity of information, logical connection between the information and other facts or pieces of information as well as supplying such information by other independent sources.[12] The reliable, unbiased and current information is accompanied by the inflow of a confusing or wilfully misleading information. One cannot rely on the veracity of the information based on its volume – as it happens – the excessive influx of the information often proves untrue, fake and serves disinformation purposes.[13] The information manipulation can be revealed at the stage of its assessment, selection and choice. After all, the functionality of Web 2.0 allows posting anything by any random user of this virtual social network. Just to give a few examples of the information manipulation let us recall some anonymous editors from Wikipedia who "buried" on the net two, alive and still kicking, American senators Ted Kennedy and Robert Byrd prematurely. The article on the civil war in Syria which came out in 2012 was due to a very rapid and dynamic pace of developments in the area edited by the users of Wikipedia more than 7,500 times which, as a result, made it very difficult to get a clear, coherent picture of the conflict situation. However, it was none of other than George W. Bush, the former president of the USA who broke the record in having his own biography updated in excess of 20,000 times.

Considering the time information was obtained and the manner it can be exploited in the process of decision making the following types of information can be distinguished:

- **reporting information** – providing an account of a past or current event recounting an event which happened or has been happening;

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[11] K. Stankiewicz, *Wpływ Internetu na percepcję wiarygodności informacji*, in: L. Haber, *Społeczeństwo informacyjne. Wizja czy rzeczywistość?*, Kraków 2004, p. 409.

[12] See. K. Polańska, *Informacja, jej wiarygodność i co z nich dla nas wynika*, in: *Informacja – dobra lub zła nowina*, A. Szewczyk (ed.), Szczecin 2004.

[13] Vladimir Volkoff, an expert on disinformation and conscious manipulation, defines disinformation as an activity taken with serious measures engaged, systematic and professional, always via mass media and addressed to the public. Its goal is to realize consistent program to change the consciousness and even sub consciousness of the public in terms of their views or beliefs regarded as unfavorable for disinformant into such that are favorable, See. V. Volkoff, *Dezinformacja: oręż wojny*, Warszawa 1991, pp. 6–8.

- **pre-emptive information** – revealing the actions planned, activities in the area of interest, proves to be the most desirable, valuable information in the decision making process;
- **verifying information** – acknowledging the existing knowledge with respect to some subject-matter, phenomenon occurrence.

The demand for information is not a fixed value. It fluctuates depending on time, actual situation. It differs on the particular levels of decision making process, starting from a tactical level or operational level to a strategic one. The higher management level the higher concentration of information and the broader substantive scope. The lower management levels should deal with information of a more detailed, limited scope nature. This information layout is referred to "an inverted information pyramid". The information pyramid featuring the volume, extent and the degree of the detail of information is inversely proportional to the structural pyramid defining duties, competences and responsibilities.[14]

The information generated by people is on a constant rise. The digital world we live in – according to the CIA Deputy Director, Andrew Hallman – undermines the rule of conspiracy underlying the intelligence activities, making it e.g. increasingly difficult to keep an officer under cover secret, once everyone carries a TV studio in their pocket.[15] The Big Data growth rate[16], i.e. the set of information of a large volume, diversity, variability, and value is continually increasing (ranging from 40 to 60 percent p.a.) constituting a processing and analytical challenge for those concerned.[17] In the mid-1980s, when the scientific centres and universities began to appreciate the added value and capabilities of the Internet, only 6% of all materials was digitalized. At present almost 99% of life and cultural heritage appears in a digital form. It is estimated that in 1992 100 GB was produced every day, while in 1997 the equivalent volume of data

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[14] B. Nogalski, B.M. Surawski, *Informacja strategiczna i jej rola w zarządzaniu przedsiębiorstwem*, in: *Informacja w zarządzaniu przedsiębiorstwem. Pozyskiwanie, wykorzystywanie i ochrona (wybrane problemy teorii i praktyki)*, R. Borowiecki, M. Kwieciński (ed.), Kraków 2003, Zakamycze, pp. 205–206.

[15] P. Tucker, *Meet the Man Reinventing CIA for the Big Data Era*, 1 X 2015, https://www.defenseone.com/technology/2015/10/meet-man-reinventing-cia-big-data-era/122453/ [access: 3 I 2018].

[16] „BIG DATA" is defined by 4 factors describing the sets of information – 4 V, i.e. **Volume** (data amount), **Variety** (diversity of analyzed data and information), **Velocity** (processing in real time) and **Value** – value we can get by combining all previously mentioned factors, supporting analytical and decision making processes. See T. Słoniewski, *Od BI do „Big Data"*, in: *Nowa twarz Business Intelligence*, (ed.) R. Jesionek, http://it-manager.pl/wp-content/uploads/Nowa-twarz-BI1.pdf [access: 7 V 2018].

[17] For example: the book collection of the Library of Congress in 2010 included 160 TB of information; eBay online in 2011 had 9 PB of information; Google search engine in 2008 was processing 24 PB per day, and to sort 1 PB of data in 6 hours and 2 minutes it needed 4000 computers. 4 experiments in the Large Hadron Collider by CERN produce more than 15 PB of data each year; Internet Archive in 2014 had 50 PB of data; during transfers of e-mail accounts from Hotmail to Outlook Microsoft transferred 150 PB of data; and the data gathered on Facebook in 2014 it is 300 PB – three times more than in 2013, every 24 hours was coming ca. 600 TB.

was generated in an hour, to reach merely a second in 2002.[18] At present 50,000 GB is generated every second. It has been estimated that in 2017 the digital space has reached 16 ZB. According to the forecasts provided by the Oracle, the mankind is likely to generate over 45 ZB (zettabyte) on the web until 2020, which will translate into over 5,2 GB of data per capita worldwide. The Digital Universe, IDC, in turn, assesses that in 2020 there will be 44 ZB of data generated and almost 40% of information in a digital world will be available in a cloud computing.[19] It is additionally argued that in 2021 the management of data will increase by 50% compared to 2011.[20]

It has been assessed that the volume of digital information generated up to 2007 equalled 281 EB (exabytes (trillion bytes), approx. 10^{18} bytes). It had been growing constantly over the years to reach in 2011 the amount of ca. 1,8 ZB (zettabytes). The authors of the report issued by the executive office of the US President came to that conclusions.[21] In terms of volume the information could be accommodated in 57,5 billion of Apple iPads 32 GB memory each. To get a clearer picture compare it to the Great Wall of China of a double average height. One can also learn that in 2011 20 billion times more information was generated worldwide (988 exabytes) than all that had been written up to date in the history of humankind.[22] To compare, this is so much information that an individual from a developed country has at their disposal during one hour or two generations back in the course of his whole life. In 2013 there were already 4 ZB of information generated worldwide. This volume corresponds to the total sum of pictures taken every second by every single US citizen for over more than 4 months of their life.[23] The Americans carried out the tests which disclosed that in 2008 people exploited, on average, 34 GB of information and 100 500 words per day. On average, 35% of it was derived from TV, 10% from films and 55% from computer games. Compared to 1980s the consumption of words had increased by 140%, while the increase of digital information went up by 350%. In 2008 media consumed 3,6 ZB information in total and 1,080 trillion of words per day.[24]

The rapid pace of data growth results from the need of a common communication and the development of the area called the Internet of Things, within the framework

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[18] The gigabyte is a multiple of the unit byte for digital information. The prefix *giga* means 10^9 in the International System of Units (SI). Therefore, one gigabyte is 1000000000 bytes. The unit symbol for the gigabyte is GB. There are also **terabyte**, TB (10^{12}), **petabyte**, PB (10^{15}), **exabyte**, EB (10^{18}) and **zettabyt**e, ZB (10^{21}) used in the text.

[19] Staying in the so called cloud. IBM defines the phenomenon as a model of maintenance and processing style, in which IT data and resources are provided as services.

[20] See. J. Gantz, D. Reinsel, *Extracting value from chaos*, in: *IDC analyze the future,* June 2011. https://www.emc.com/collateral/analyst-reports/idc-extracting-value-from-chaos-ar.pdf [access: 4 VI 2018].

[21] *Big Data: Seizing Opportunities, Preserving Values*, Executive Office of the President, The White House, Washington DC, May 2014, pp.7–8, data included in the report come from: J. Gantz, D. Reinsel, *Extracting Value from Chaos*, IDC, 2011; Mary Meeker and Liang Yu, Internet Trends, Kleiner Perkins Caulfield Byers, 2013.

[22] See. M. Karnowski, E. Mistewicz, *Anatomia władzy*, Warszawa 2010, p. 114.

[23] *Big Data: Seizing Opportunities* …, p. 8.

[24] R. Bohn, J. Short, *Measuring Consumer Information*, International Journal of Communication 6 (2012), 980–1000, University of California, San Diego.

of which the increasing number of devices is likely to gather and process data online. Within the next few years we can expect data explosion. The users themselves also take part in the chain of duplicating information – by copying all sorts of content, commentaries and by classifying them as a subsequent secondary source of information, without providing its original source. This phenomenon is referred to as the "echo effect".

As the Nobel prize winner, Herbert Simon, claimed information focuses the attention of its recipients. A slight tension, the so called cognitive dissonance may accompany this process, if the addressee of the information finds its content inconsistent with his/her opinions or beliefs. We tend to ignore such information, treat it less seriously or even distort it. The level of information absorption is different for everyone. It is contingent, to a great extent, on the volume and quality of the *a priori* information.[25] With time a fatigue syndrome develops, the so called attention crash, caused not so much by the inability to adequately select the simple message but to understand it. James Gleick calls this factor the Devil of Information Overload, i.e. Too Much Information – TMI.[26] It happens this way also because hippocampus[27] - the hardware of a human brain has its biological constraints. In 1986 Thomas K. Landauer, an academic at The Colorado University Psychology Department, assumed in his works that a human brain is able to retain ca. 11 TB of information.[28] According to contemporary studies by StorageCraft experts human brain can comprise from 100 TB to 2,5 PB data. To compare, if the *human hard disc* operated as a video digital recorder in a TV set, this volume would be sufficient to store 3 million hours of films. In order to exploit the entire memory, the TV set should never be switched off for more than 300 years. The studies by American scientists reveal that our biological computer is able to store not more than ca. 1 PB data.

Information overload makes it more difficult for people to process and understand it and ultimately leads to its misinterpretation. Therefore is not easy to assign a proper analyst to a particular task. The vastness of information passed by a colonel of the Russian Military Intelligence (GRU), Oleg Penkovsky made the Americans (CIA) and the British (MI6) engage together 30 translators and analysts.[29] The imprecise transcript of the conversation between the CIA officers and a KGB agent, Yuriy Nosenko, during which he was proffering his assistance to the West, brought about the rejection of his candidacy as a potential source of information and him being deemed a liar. The conclusions of the analytical report precluded the development of an objective analysis of the Russian captain. Most of the testimonies provided by him were written up on the basis of the memorised declarations of his, which made even worse by linguistic shortcomings of the examiners

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[25] S.E. Zločevskij and others, *Informacja w badaniach naukowych*, Warszawa 1972, p. 231.

[26] J. Gleick, *Informacja – bit, wszechświat…*, p.16.

[27] The hippocampus belongs to the limbic system and plays important roles in the consolidation of information from short-term memory to long-term memory, and in spatial memory that enables navigation.

[28] T.K. Landauer, *How Much do People Remember? Some Estimates of the Quantity of Learned Information in Long-Term Memory*, Cognitive Science 1986, no. 10, pp. 477–493.

[29] J. Larecki, *W kręgu tajemnic wywiadu*, Warszawa 2007, pp. 157–158.

were interpreted by Americans in an unfavourable manner. The name of the school he graduated from was misspelled and instead of gen. Frunze Navy High School (a Soviet war hero), they wrote gen. Frunze Military Academy, the so-called Soviet West Point. Having analysed the extensive CIA archives, its former agent John L. Hart concluded that the counterintelligence studies and analyses were so lengthy and sophisticated that only a handful of superiors managed to wade through them and analyse the reasons of the purported duplicity of Nosenko.[30] General Robert Kehler, Chief Commander of the United States Strategic Command – US STRATCOM, with years of experience under his belt noticed that the Pentagon was sinking under a deluge of intelligence data. The increasingly more efficient and numerous satellites and spotter planes are capable of supplying such volume of intelligence that the analysts were not able to handle it. The amount of data has increased by 1500% over five years and the capabilities of processing it have increased merely by 30%.[31]

A National Security Agency (NSA) officer, William Binney reached similar conclusions, adding that gathering random data resulted in the officers overburdened with the influx of too much data abandoning the analysis in favour of a simple search of data bases on the basis of key words. It generates a lot of meaningless hits rather than significant connections between the data.[32] This could have been a reason for a delay in passing the information by the American Immigration Office to the Huffman Aviation International in Venice, Florida, that two of the latter WTC bombers, Mohammed Atta and Marwan Alshehi had been granted student visas. The aviation school got this information six months after the WTC attacks. A confirmation of these conclusions is the moment of intercepting by the National Security Agency – NSA in September 10, 2001 of the two pieces of information in the Arabic language which included the information on what was to happen the next day. The two pieces of information were translated only later after the World Trade Centre attacks took place. Additionally, in the summer of 2001, few months before 9/11, Osama bin Laden together with his commanders had given an extensive interview for the Centre of Middle East Media, in which there was a mention of some general leads on the planned large-scale attacks on American facilities.[33] Some experts assess that from 50 to 80% of data in the interest of special services of western countries is not published in the English language.[34]

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[30] J.L. Hart, *Walka wywiadów. Rosjanie w CIA*, Warszawa 2003, p. 155.

[31] Costlow, *Kehler raises trial balloon: Put STRATCOM in charge of all GEOINT PED*, October 19, 2011, http://defensesystems.com/articles/2011/10/19/geoint-kehler-stratcom-geospatial intelligence.aspx [access: 2 V 2018].

[32] R. Koerner, *William Binney: NSA Claim Not to Be Mining Content Is an "Outright Lie"*, 22 VII 2015, https://www.huffingtonpost.com/robin-koerner/nsa-whistleblower-nsa-clai_b_7837806.html [access: 4 V 2018].

[33] P. Bergen, *Why U.S. can't find Osama bin Laden*, October 19, 2010, http://edition.cnn.com/2010/OPINION/10/19/bergen.finding.bin.laden/ [access: 2 V 2018].

[34] M.M. Lowenthal, *Open Source Intelligence: New Myths, New Realities*, in: *Intelligence and the National Security Strategist: Enduring Issues and Challenges*, R.Z. George, R.D. Kline (ed.), Lanham 2006, p. 277.

Information may be a superpower if only it can be assessed at the place in need thereof, by an individual in the need thereof and for the purpose required. The excessive volume of disarranged information may be a liability rather than an asset. The more success in data gathering the more drowning in the ocean of data. David Foster Wallace calls this phenomenon "a tsunami of available facts, contexts and perspectives".[35] In one of the CIA's operations carried out between 1954 and 1955 at the border between two occupation zones in Berlin, the Americans recorded 6 million hours of telephone calls between Moscow and Karlshors, where the main KGB Rezidentura in the German Democratic Republic was located and between Moscow and Wünsdorf (housing – as per literature available - the Soviet military headquarters). The information thus collected was translated and analysed for the subsequent two years after the operation had been completed. Despite the passage of time the successor services still grappled with the information overflow. In 1989, when the German Democratic Republic ceased to exist, the staff of the Ministerium für Staatssicherheit – commonly known as the Stasi, analyzed materials derived from the phone-tapping in the mid 1980s.[36]

It is not difficult to get disoriented, muddled up in the process of gathering open sources information, especially if it comes from the Internet, the capacity of which was estimated by Eric Schmidt at 5 million TB. The consistently growing number of visa applications lodged by foreigners with the immigration offices leads to a chaos which makes it even more difficult for the authorities to accurately verify the actual reason for which the applicants wish to change their country of stay. This is a procedure of administrative nature, and consists primarily of the documentation collected on the basis of community interviews and background checks. The lack or cursory verification of the open source information by the immigration services and the FBI in the process of the assessment of the potential threats to the internal security of the state, enabled Tashfeen Malik settling down in the US. The immigrant from Pakistan, a high-risk country, for a couple of years had been declaring her support for the jihad and posted anti-American comments on one of the social websites. On 2 December 2015 she and her husband carried out an attack at the Inland Regional Centre in San Bernardino, California, in which 14 people were killed and more than 20 others were seriously injured.[37]

90% of intelligence comes from open sources. The remaining 10% which is gained in a more spectacular way comes from the secret one. The genuine hero of the intelligence activity is Sherlock Holmes not James Bond.[38] The potential

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[35] J. Gleick, *Informacja…*, p. 374.

[36] P. Żuk, *Demokracja pod kontrolą – czyli podsłuch non stop*, 8 VI 2015, http://www. tygodnikprzeglad.pl/demokracja-pod-kontrola-czyli-podsluch-non-stop/ [access: 5 V 2018].

[37] M. Apuzzo, M.S. Schmidt, J. Preston, *U.S. Visa Process Missed San Bernardino Wife's Zealotry on Social Media*, December 12, 2015, http://www.nytimes.com/2015/12/13/us/san-bernardino-attacks-us-visa-process-tashfeen-maliks-remarks-on-social-media-about-jihad-were-missed.html [access: 6 V 2018].

[38] Cited from gen. S.V. Wilson, Director of the US Defense Intelligence Agency.

of OSINT[39] (open source intelligence),[40] i.e. the data collected from an overt, publicly available sources was appreciated by humankind since time immemorial. The history of using publicly available information dates back to the early attempts at collecting intelligence of strategic value which supported the decision-making process of a sovereign - governments in the matters of national security and defence. The OSINT tools[41] have evolved in line with technological progress, events which were rightly recognized by the National Geographic[42] as those that revolutionised the world. The access to such tools was initiated and popularized by mass media[43] – press, radio, television with the major input of made by a computer and the Internet revolution developing social networks, i.e. enabling social media communication possible.[44]

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[39] Three stages of open source analysis can be distinguished: **the Open Source Data** (**OSD**) – data from overt sources, the "raw data", from an original source in printed, digital form, presented as photographs, recordings, satellite images and so on; **the Open Source Information (OSIF)** – information from overt sources, extensively developed, contained in one piece, edited, verified, filtered in relation to its presentation (press releases, books, publications, reports); **the Validated Open Source Intelligence** (**OSINT-V**) – verified open source intelligence, with high degree of reliability thanks to analysis of covert information done by an analyst. It is possible to extend OSINT to **the Open Source Acquisition** – acquisition of over source information from available open sources which have already been collected and passed by a researcher, **Open Source** – it can be both a single individual as well as a group providing information. The information itself nor the relation between the information and the subject interested in gaining it, is not classified. Open source data can be publicly available but not all publicly available information is an open source. The notion *open source* refers to publicly available means and it should not be limited only to physical individuals. **The publicly available information** – generally available information, data, facts, manuals, published materials or publicly transmitted materials, available to all, gained by observation or hearing or gained during meetings open for the whole society.

[40] OSINT was defined, inter alia, by the US Director of National Intelligence (DNI) in: *National Defense Authorization Act for Fiscal Year 2014*, (Public Law 113-66, 26 XII 2013) and the US Intelligence Community in Intelligence Community Directive Number 301, NATIONAL OPEN SOURCE ENTERPRISE 2006.

[41] There can be distinguished two intelligence areas within OSINT: **the Social Media Intelligence** (**SOCMINT**) focused on the recognition and monitoring profiles of social media users and their posts, gathering information from open and closed social groups. The second area, **the Web Intelligence (WEBINT)**, explores data, looks for and stores data in the Internet.

[42] See. *100 Events That Changed the World*, National Geographic, 2015. Special Issue.

[43] Radio broadcasting needed 30 years to get 50 million listeners, TV 14 years to gather such amount of viewers, the Internet gathered such amount of followers in only 4 years time.

[44] The Social Media Intelligence (SOCMINT) is one element of OSINT and refers to the collective tools and solutions that allow organizations to monitor social channels and conversations, respond to social signals and synthesize social data points into meaningful trends and analysis based on the user's needs. Social media intelligence allows one to collect intelligence gathering from the social media sites. The term SOCMINT was proposed in a 2012 paper written by David Omand, Jamie Bartlett and Carl Miller for the Centre for the Analysis of Social Media, at the London-based think tank, Demos – D. Omand, J. Bartlett and C. Miller, *Introducing Social Media Intelligence (SOCMINT)*, Intelligence and National Security, 28 September 2012.

The open source intelligence[45] appears both in the civilian and the military world. It is mostly exploited by security-related public institutions and, more and more often, by private sector and even terrorist organisations because it supports all decision making processes by providing the required information. The OSINT fulfils the following functions[46]:

- it underlies every action at each single stage. It provides background for the information supplied whose meaning depends on social, cultural or political context.
- It meets intelligence requirements and without the need to seek support from experts or using other operational means (secret methods).
- It deepens and verifies the knowledge already possessed.
- Enables decision makers to use all available sources of information in a decision making process.

The history of OSINT involves to a great extent the history of the US intelligence. It used to be one of the major sources of information regarding the military capabilities and political plans of the adversaries (early warning and risks forecast including). The Americans were pioneers in gathering data as they developed monitoring capabilities, filtering, translating, or archiving information from the foreign media. With regard to the process of monitoring open sources, which, at the very beginning, involved following press reports, the commercial sector was ahead of the governmental activities for a long time. Before the intelligence got professional and formally institutionalized as a key element of the national security apparatus, in the second half of the 20th century gathering and analysis of open sources by the government had been evolving from a non orderly process to the activities of strategic nature requiring a certain set of methods and tools.

The following scheme shows a direction of OSINT evolution and its main areas allowing to develop a suitable analytical product for the intelligence purposes in 20th and 21st centuries.

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[45] Apart from traditional sources of information there are also commercial data bases like economic catalogues, statistics catalogues, private registers, the so called grey literature, i.e. draft reports, unofficial governmental documents, reprints, studies and market research, research reports, individual experts, high school lecturers, scientific literature, conference materials, studies of scientific centres.

[46] Open Source Intelligence, Headquarters, Department of Army, Army Techniques Publication, ATP 2-22.9, Washington, DC, 10 July 2012, p. 2-2.
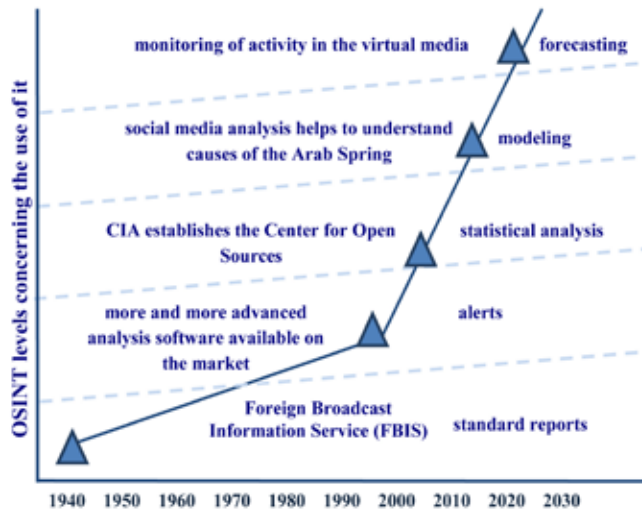
Scheme. Evolution of OSINT possibilities.

Source: Private study on the basis of Disruptive Innovation, *Case study: Intelligence – Open-source data analytics,* Deloitte, Washington, DC, 2012, p. 3.

The value of the open source intelligence data was appreciated already in the 18th century during the American revolution by George Washington, who drew upon an update on current developments from the press releases or generally accessible information on the British troops or activities of spies.[47] Some years later, in 1808, the British Duke of Wellington during a battle against Napoleon on the Iberian Peninsula advised his generals to read daily newspapers, including The Times, where the process of formation of the French infantry units was broadly described.[48] In 1863 during the Gettysburg Campaign General Lee's intelligence was monitoring movements of the troops in the north by monitoring press releases.[49] In the years 1899-1902 during the Philippine War the American military strategists had to rely on the intelligence reports which were actually copies of encyclopaedia articles.[50] During the two world wars books and newspapers were sources of valuable information used by the military intelligence. In France general Patton's army were using Michelin's maps for geospatial recognition[51], available at petrol stations.

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[47] *A Look Back ... George Washington: America's First Military Intelligence Director*, 12 VII 2007, https://www.cia.gov/news-information/featured-story-archive/2007-featured-storyarchive/george-washington.html [access: 5 V 2018].

[48] S.D. Gibson, *Exploring the Role and Value of Open Source Intelligence*, in: *Open Source Intelligence in Twenty-First Century*, Ch. Hobbes, D. Sailsbury (eds.), New York 2014, p. 13.

[49] E.B. Coddington, Ch. Scribner's Sons, *The Gettysburg Campaign – A Study in Command*, 1968, p.19.

[50] B. McAllister Linn, *The Philippine War: 1899–1902*, University Press of Kansas, 2000.

[51] R.A. Norton, Ph.D., *Guide to Open Source Intelligence, A Growing Window into the World*, The Intelligencer Journal of U.S. Intelligence Studies, vol. 18, no. 2, Winter/Spring 2011, p. 66.

In 1939 the British government requested the BBC to launch a commercial service to round up foreign press releases and radio broadcasts in the Digest of Foreign Broadcasts, later called the Summary of World Broadcasts and currently it is known as the BBC Monitoring. In the BBC manual from 1940 the goal of the service was described as the creation of "the modern Tower of Babel where voices of both friends and enemies were heard".[52] In the mid 1943 BBC was monitoring 1,25 million transmissions per day. A formal partnership between the BBC and its American counterpart was established between 1947 and 1948 by away of an arrangement on the full exchange of information. In 1948 the Aeronautical Research Unit was transformed into the US Library of Congress in order to provide non-standard research and analytical services using broad library resources. At present it operates as the Federal Research Division.[53]

In 1941 by the decision of President Roosevelt the Foreign Broadcast Monitoring Service – FBMS in the USA was created. Its task was to provide monitoring, translation, transcription and the analysis of information derived from radio broadcasts aired by the Axis powers. Until the end of 1942 its capability to translate was more than 500,000 words per day from 25 radio stations broadcasting in 15 languages.[54] The Interdepartmental Committee for the Acquisition of Foreign Publications also monitored and analyzed press releases and publications overseas during the war. At the end of the war there was a tremendous volume of 45,000 pages of text per week dispatched for analysis. In the last days of war it had 300,000 of photographs, 350,000 volumes of magazines, 50,000 books, more than 1 million maps and 300,000 of other documents.[55]

During the Cold War the American Office of Strategic Research was getting information on the nuclear capabilities of other countries overseas from official, publicly known and available governmental reports from those countries as well as from scientist publications[56] (with the USSR, China and France remaining the focal point of interest). At the same time the Office of Economic Research was benefiting from overt, publicly available information regarding, inter alia, the oil production by the OPEC, the output of grain in the Soviet Union, the buying power of foreign currencies or the purchasing power of foreign companies.[57] The development of the Soviet space program was also monitored by the CIA and the US Air Forces via specialized literature available.[58]

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[52] F. Schaurer, J. Störger, *Guide to the Study of Intelligence. The Evolution of Open Source Intelligence (OSINT)*, „The Intelligencer: Journal of U.S. Intelligence Studies" 2013, no. 3, p. 53.

[53] Ibidem.

[54] K. Leetaru, *The Scope of FBIS and BBC Open-Source Media Coverage*, 1979–2008 (U), Studies in Intelligence, vol. 54, no. 1, March 2010, p. 19.

[55] A. Olcott, *Open Source Intelligence in a Networked World*, London-New York 2012, p. 16.

[56] T.T. Stafford, *The U.S. Intelligence Community*, University Press of America, 1983, pp. 58–60.

[57] J.T. Richelson, *The U.S. Intelligence Community*, Fourth Edition, Chapter 12, Westview Press, 1999.

[58] J.J. Bagnall, *The Exploitation of Russian Scientific Literature for Intelligence Purposes*, Studies in Intelligence, Summer 1958, pp. 45–49.

During the Cold War the German Stasi had been analyzing ca. 1,000 Western magazines and 100 books per month and 12 hours of radio and TV broadcasts in the West Germany per day.[59] To date German services have been appreciative of the open source intelligence. In one of the key units of the Bundesnachrichtendienst – BND, playing an analytical role, most of the material being analyzed – 85% are open source information (magazines, newspapers, radio broadcasts, media reports, booklets and the Internet). Only 10% of the information comes from technical recognition and 5% from HUMINT.[60]

In the 1950s Sherman Kent, deemed the father of intelligence analysis, ordered a report on the American military forces to be drawn up by his university's historians. It was to rely on open sources only and incorporate the types, volume and status of all weapon available, as well as the info on the dislocation of units up to the level of a division. After a 3-month works Kent received a few hundred pages and analyses with a 30-page summary. It turned out that the report was in 90% accurate reflection of the American army potential, which gave a reason to make the report secret immediately.[61]

Apart from Americans and Europeans, the Chinese also appreciated the advantages of OSINT and opened in 1958 the Chinese Institute of Scientific and Technical Information – a central institution responsible for coordination of gathering, processing and distribution of foreign materials from open sources. Over a period of eight years they had build a vast scientific and technical information base, including information from more than 50 countries, i.e. 11,000 different foreign publications, 500 000 scientific reports, governmental publications, conference materials and scientific studies, more than 5 million foreign patents and a few million of samples possibly useful for Chinese industry.[62]

The significance of information derived from open sources was appreciated also by the Soviet special services. The FBI learned that after William Fisher was arrested in 1957, the KGB's spy, alias Rudolf Abel. After the analysis of information delivered by him it turned out that it was based mainly on open sources materials – the New York Times and Scientific American, and only few pieces of information were supplemented by the agents' intelligence.[63]

On the Polish ground the example of OSINT usage is the activity of colonel Mieczysław Wyżeł-Śnieżyński, a military attaché in Czechoslovakia. His operational reports to the Division II of the General Staff were based on the analysis of open sources, mainly press and catalogues of Czechoslovak military companies.[64]

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[59] F. Schaurer, J. Störger, *Guide to the Study…*

[60] U. Ulfkotte, *Pod osłoną mroku. Wielkie wywiady bez tajemnic*, Warszawa 2008, p. 292.

[61] W. Zajączkowski, *Zrozumieć innych. Metoda analityczna w polityce zagranicznej*, Warszawa 2011, p. 14.

[62] W.C. Hannas, J. Mulvenon, A.B. Puglisi, *Chinese industrial espionage: Technology acquisition and military modernization*, London-New York 2013, pp. 19–20.

[63] W. Zajączkowski, *Zrozumieć…* p. 14.

[64] A. Wojciulik, *Rola „białego wywiadu" w działalności służb specjalnych na przestrzeni wieków*,

John L. Hart, the former CIA operational officer, boasting an extensive experience in leading intelligence operations overseas, after analyzing operational documentation of the service admitted that the intelligence officers had learned that giving their superiors a piece of paper with any content is much better than giving nothing.[65] One of the spies, a Soviet officer Peter Popov, learned from his superiors that his intelligence work was so much ineffective because more information could be found in newspapers.[66] In 1983 a Japanese journalist interviewed a KGB officer Stanislav Levchenko, working under cover of a press reporter in Japan, who defected to the US in 1979. During more than 20 hours talk that former officer was describing the corridors of operational work. Based on these talks there was a book written and many press conferences with Levchenko took place. According to one American intelligence officer they revealed more information than his CIA dossier had contained.[67]

At present the Arab Spring is a clear evidence that publicly available information, views and assessments published online are a powerful tool with a potential to influence the fate of the country and the society.

Christopher Sartinsky, the former deputy CIA director said, "After years secretly monitoring the public, we were astounded so many people would willingly publicize where they live, religious and political views, alphabetize their personal friends, e-mail addresses, phone numbers and hundreds of photos of themselves".[68] Eben Moglen, a network activist, in his interview „Who Needs the KGB when we have Facebook?" asks rhetorically: Who needs Lubyanka when you have Facebook? referencing the infamous KGB offices in Moscow. "In the old world they would put people into cells to try and find out information about someone. It was expensive, cruel and awful. Nowadays it is much cheaper and easier. You can spy on your friends a little bit, get spied-on a lot. If today every kid is a little spy and there is one supervising spy, who is the winner and who is the loser"?[69]

It looks the same today, to meet the current challenges, analysts of the American Open Source Centre, called nosey librarians, apart from monitoring media, read every day even 5 million posts on the social media and prepare reports on current social environments in chosen countries and draw up certain threats forecasts.[70]

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in: W. Filipowski, W. Mądrzejowski (ed.), *Biały wywiad. Otwarte źródła informacji – wokół teorii i praktyki*, Warszawa 2012, p. 48.

[65] J.L. Hart, *Walka Wywiadów, Rosjanie w CIA*, Warszawa 2003, p. 58.

[66] Ibidem, p. 52.

[67] S.C. Mercado, *A Venerable Sailing the Sea of OSINT in the Information Age - A Venerable Source in a New Era*, Studies in Intelligence vol. 48, no. 3, p. 51, on the basis of Levchenko's book, *On the Wrong Side: My Life in the KGB*, Washington: Pergamon-Brassey's, 1988.

[68] J. Ortega Sim, *Facebook The Social Filter of World Intelligence*, 2 July 2012, http://thedailyjournal. com/theinvestigative/facebook-the-social-filter-of-world-intelligence/ [access: 2 V 2018].

[69] A. Schechter, *Who Needs the KGB when we have Facebook? An Interview with Eben Moglen*, April 8 2015, http://moglen.law.columbia.edu/publications/Who-needs-KGB-when-we-have-Facebook Schechter.pdf [access: 1 V 2018].

[70] D. Goodin, *CIA 'Open Source Center' monitors Facebook, Twitter*, November 4, 2011, http://

The British Government Communication Headquarters keeps up with this trend thanks to the Network Analysis Centre, which collects more than 50 billion of records every day regarding Internet users and their entries to information pages and radio online all over the world, mostly linked to Islam.[71] The Director of the German Federal Office for Constitution Protection (BfV), Hans-Georg Maassen stresses that the Chinese intelligence services use social networks, like LinkedIn, to get access to German governmental agencies by establishing professional and businesslike contacts.[72] An effective use of social media show for example the activities of the Israeli Shin Bet. By analysis and monitoring the Instant Messengers it managed to thwart the alleged terrorist attacks on International Conference Centre in Jerusalem and on the USA Embassy in Tel Aviv.[73] European special services have also some successes in this area. The French DCRI (Direction Centrale du Renseignement Intérieur, DCRI and since May 12, 2014 Direction Générale de la Sécurité Intérieure (DGSI) stopped in 2013 Romain Letellier *alias* Abu Siyad Al-Normandy, a French convert, moderator of Ansar Al-Haqq, a jihad Internet forum. He was charged with inciting to terrorism and spreading terrorist propaganda. was the first French jihadist sentenced under the new legal regulation of 2012, the aim of which was to stop self radicalisation via Internet.

Mohammed Emwazi, known as Jihadi John drew the attention of the media and special services because of his role as the assassin of the Islamic State's hostages. He was identified while shopping online. Entering the personal code, he was using ever since the time he was a student, he enabled the services to establish his identity and a place of stay in Syria.[74] Monitoring of a digital trace in the net makes it possible to get to its source – the user. Paul Moore assesses that the pauses the user takes between pressing individual computer buttons or the length of time they are being pressed make up constant and unique values, specifying a man's behavioural trait. Based on such observation and analysis one can assess a profile of a specific PC user. The same methods were allegedly used by the British intelligence service during the World War II. Based on the interception of the individual speech pattern, speed and unique errors made by German telegraph operators, their relevant profiles were successively generated.[75]

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www.theregister.co.uk/2011/11/04/cia_open_source_center [access: 7 V 2018].

[71] See. Broadcast/Internet Radio Exploitation and Analysis, 6 November 2009 – UK TOP SECRET/ COMINT, https://theintercept.com/document/2015/09/25/broadcast-analysis/ [access: 10 IV 2018].

[72] K. Grieshaber, *German intelligence warns of increased Chinese cyber spying*, December 10, 2017, https://www.seattletimes.com/business/german-intelligence-warns-of-increased-chinese-cyberspying [access: 2 V 2018].

[73] M. Peck, *Israel Thwarts Al Qaeda Plot to Blow Up U.S. Embassy*, January 20, 2014, https://www.forbes.com/sites/michaelpeck/2014/01/22/israel-thwarts-al-qaeda-plot-to-blow-up-u-s-embassy/1 [access: 2 V 2018].

[74] J. Murray, *Jihadi John exposed by web error: Killer downloaded software using student ID*, March 1, 2015, http://www.express.co.uk/news/uk/561135/Jihadi-John-Mohammed-Emwazi-iden-tified-web-error-student-ID-Westminster-university [access: 26 III 2018].

[75] See. P. Moore, *Behavioral Profiling: The password you can't change*, July 28, 2015, https://

The work of literature customarily widens the horizons and imagination but it can also inspire in an unfavourable manner. The scenario which could be created for the worldwide cinema audience can become a reality as the 9/11 events show how. The hijacking of an aircraft and suicide attack on the American Congress, the Capitol building was described in the book by Tom Clancy "Executive Orders" written 5 years earlier. Timothy McVeigh, who was sentenced for a bomb attack in the governmental building in Oklahoma City in 1995, was inspired by *Red Dawn* movie of 1984 and the book *The Turner diaries* by Andrew Macdonald, member of the American Nazi Party.

Published in *The Washington Post* and in the *The New York Times* the so called Kaczynski's manifesto on the potential threats arising from modern technologies was the reason of TJK's detention by the FBI in 1996. The American terrorist, Theodor John Kaczynski, also known as the Unabomber killed 3 people, and injured 23 using self-made bombs. His brother David recognized Theodor's views included in the published manifesto and tipped off the American services contributing thus to the completion of the investigation which proved ineffective until that very moment.

The metadata, i.e. the details of the data facilitating the identification and description of a digital object constitute an additional source of open information. It can retain, among others, the information on circumstances and location of the task performed and information on copyrights. The metadata of a picture posted on the Instagram by a Russian soldier in a military transporter revealed his place of stay in Ukraine. It was the time when Russia denied its presence in the eastern part of this country. The publication on Twitter of a picture of an IS terrorist featuring one of the command centres in the background allowed the American air forces to locate the place and to bomb it within 24 hours since the picture came out.[76] It is commonly known that there are some applications which enable precise recording of the routes taken by athletes thanks to a geolocation. Their activity along with the distance covered is reflected on a map, which they share eagerly afterwards in the social media. The example of the Strava application shows that the analysis of metadata from available joggers routes disclosed a secret military facilities location, including special services, the joggers served.

The terrorist organizations appreciate OSINT potential[77], particularly in

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paul.reviews/behavioral-profiling-the-password-you-cant-change/ [access: 8 IV 2018].

[76] W. Castillo, Air Force intel uses ISIS 'moron' post to track fighters**,** CNN, 5 June 2015**,** https://edition.cnn.com/2015/06/05/politics/air-force-isis-moron-twitter/index.html [access: 13 IV 2018].

[77] Terrorist organisations used different tools in their social activities. Since the mid 1980s it was broadcast and VHS with preaching, pictures from battlefields and magazines and newspaper reports. In the mid 1990s – web pages created and controlled by prominent activists of the organisation. In the early 2000s – internet fora, and nowadays – social media. See. A.Y. Zelin, R. Borow Fellow, *The State of Global Jihad Online*, Washington Institute for Near East Policy, January 2013.

the recruitment process[78], radicalisation, training, planning, attacks[79] or cyber attacks.[80] The Al Qaeda manual assesses that public and open sources allow to gather at least 80% of information on the enemy.[81] Peter Bergan came to a conclusion that fighting with Al Qaeda and its affiliates is in fact the first war of open sources.[82] Up to this day no other terrorist organisation has used social media to the extent the Islamic State did. The FBI Director, James Comey, assesses that members of the organisation perfected the Internet[83] and revolutionised terrorism phenomenon.[84] They created the so called Open Source Jihad[85], i.e. widely accessible and easy to find pieces of information connected to terrorist activities. These intensive efforts of Islamic extremists were also noticed by the German Federal Intelligence Service (BND), according to which Al Qaeda and the IS waged a propaganda war on the Internet on an scale unprecedented. In some analyses emphasise that even 90% of the content created by terrorists on the web is spread via social media.[86] The Internet abounds in free books[87], like manuals and instructions for the potential attackers, lonely wolfs.

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[78] Elizabeth Kendall assesses that poetry can be a significant tool in the recruitment process because it touches emotions of Arab listeners and readers, creating the climate of tradition, authenticity and legitimacy based on ideology. Osama bin Laden himself wrote the ode, in which he praised damaging the USS Cole by Al Qaeda in 2000.

[79] As the first order for terrorists on the Internet is regarded a statement by one of the Al Qaeda members, Abu Muhammad al-Hilali of 25 October 2005, who called for attacks in Sinai. Although already in 1995 arrested back then Hamas activist, Abd-al-Rahman Zaydan contacted with members of the organization on the web. See. K. Soo-Hoo, S. Goldman, L. Greenberg, *Information Technology and the Terrorist Threat*, „Survival" 1997, no. 3, p. 139.

[80] Open sources are a tool enabling publicity of the so called Media terror, which is or not a form of praising or disdain for terrorist acts, always brings a desired effect and fits into a scenario of terrorists strategy. Apart from that open sources allow to conduct psychological, disinformation operations, propaganda campaigns on the Internet.

[81] See. *Al Qaeda Training manual*, December 2001. It was mentioned by the US State Secretary Donald Rumsfeld in his speech of 15 January 2003.

[82] P. Bergen, *Why U.S. can't find Osama bin Laden… .*

[83] A British of Pakistani origin, Babar Ahmad, is regarded as the father of an online jihad. As a 22-year old student of London University he started the first web site for Islamic extremists in 1996. It was dedicated to Osama bin Laden and one of the Al Qaeda founders Abdullah Azzam.

[84] J. Ax, *No evidence California attackers were part of terrorist cell – FBI head*, December 16, 2015, https://in.reuters.com/article/usa-security-idINKBN0TZ29G20151216 [access: 17 IV 2018].

[85] Analysis of terrorist activities in the social media done by the British International Center for the Study of radicalization (ICSR) points out that they are used for informing (reporting) about current situation (online) on a battle field.

[86] See. D. Bieda, E. Riddle, *Cyberspace: A Venue for Terrorism*, „*Issues in Information Systems*" *2015*, no. 16, International Association of Computer Investigative Specialists (IACIS), Leesburg 2015.

[87] See. *The Terrorist's Handbook, The Anarchist Cookbook* – manual describing how to make explosives using domestic chemicals. *Military Studies in the Jihad Against the Tyrants, How to survive in the west – analyses of organizing and carrying out military actions according to the jihadist military idea. The Mujahedeen Poisons Handbook – procedures of producing toxins, Safety and Security guidelines for Lone Wolf Mujahedeen and small cells* – information on encrypting on the web, intelligence and counterintelligence methods of creating secret cells of jihad.

The American intelligence informed that Osama bin Laden had a computer centre in the Afghan mountains, from which he established a contact with Al Qaeda members via chatrooms and discussion groups.[88] The Internet must have been a tool to agree the details of and coordination of 9/11 attacks. After Abu Zubaydah, purportedly the operational chief of Al Qaeda, was arrested in March 2002, there were almost 2,300 encrypted files from one of the Islamic net page found in his notebook. The analysis of data showed that the information was systematically exchanged between members of the group between May 2000 and September 9, 2011 and a frequency increased a month before the attack.[89] A Saudi terrorist recognized the significance of the media as well. In 2002 in a letter to a Talib leader, Mullah Muhammad Omar he wrote that it was obvious that in the century the fight via media is one of the strongest methods and in fact it could make up 90% of preparations for fighting. While preparing the Mumbai attacks in November 2008, terrorists used the Google Earth search engine to memorise the topography of the city, the names of the streets and the location of the landmarks. In 2009 in Pakistan a group of men from Washington, called later the "Virginia Five" was detained, who intended to join the jihadists on the border with Afghanistan. The undertaking was inspired by a Talib recruit, who had come across favourable to Talibs comments posted by one of the men on YouTube regarding the footage showing an attack on the American troops. The social ineptness experienced by some people, often, generated by social or cultural factors proves easier to overcome in the virtual reality. The online activity of the Dutch Muslim women did not go unnoticed by terrorist groups, which started to recruit those women as translators, programmers and designers of Dutch web pages concerning the jihad.[90]

A certain synergy between open source intelligence and terrorists can be observed.[91] Already in 1976 Walter Laquer gave his opinion in the Harpers magazine that media are terrorists' best friend and an act of terror does not mean a thing without the media coverage. It is the media that provide them with air, they need so much, as Margaret Thatcher used to say more than 30 years ago. As rightly described it Ted Kepel without television terrorism resembles a tree in the middle of a forest: if it tumbles down nobody notices it.[92] One could almost say that it is media that created terrorists making celebrities out of them. It is proved by the fact that during a 10 week time following the 9/11 the Times magazine placed on its cover the image of bin Laden three times compared to the image of the then president George W. Bush occurring only twice.

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[88] D.E. Denning, *Activism, Hactivism and Cyber Terrorism: The Internet as a Tool for Influencing Foreign Policy*, in: *Networks and Netwars: The Future of Terror, Crime, and Militancy*, Santa Monica 2001, p. 259.

[89] J. Kelly, Militants wire Web with links to jihad, „USA Today" 10 July, 2002, http://usatoday30. usatoday.com/news/world/2002/07/10/web-terror-cover.htm [access: 20 IV 2018].

[90] *Jihadists and the Internet. 2009 update*, National Coordinator for Counterterrorism (NCTb) May 2010, pp. 65–66.

[91] According to the United States Institute of Peace report in 1998 only one in three terrorist organization had its own web page, and in 2000 almost all of them did.

[92] P. Rees, *Kolacja z terrorystą. Spotkania z najbardziej poszukiwanymi bojownikami na świecie*, Kraków 2008, p. 27.

The way the open source intelligence can be exploited showed a British blogger, Eliot Higgis, who drew astonishing conclusions after tracing down the activities in the web. Having analyzed the footage of the British journalist, James Foley execution by the Islamic State he managed to indicate the place of the execution – the hills south off the Syrian city of Ar-Rakka, although some wilderness was in the background.[93] When in August 2013 some missiles fell down on the Syrian cities, and the UN inspectors had difficulties in confirming or denying the use of chemical weapon, Higgins published on the same day some photographs and films found in YouTube showing that the missiles had not exploded immediately but kept falling down intact, releasing slowly sarin out of the heads. One could check social media to easily find huge amount of pictures from the eastern Ukraine with the BUK missiles in the background, posted online by the soldiers of the 53 Anti-Aircraft Missile Brigade from the Kursk Oblast, demonstrating clearly that the separatist groups had regularly backed military forces of the Russian Federation. At the same time Higgins proved that the Malaysia Airlines aircraft was shot down over Ukraine by the BUK missile[94], which belonged to the Russian troops.

To prove that the ostensibly innocent open sources may hide a potent message of top secret weight we can quote an example of a total foul-up made by an a FBI agent, the former chief of an antiterrorist unit. In 2010 he chose to reserve the copyrights to a manual designed for agents interrogating suspects, however, he failed to realize that once the entry was made into the register it became automatically, universally available to anyone interested. In order to register the manual he submitted with the patent office a copy of the manual, which can be accessed by anyone who wants to read it at the Library of Congress.[95] This error, though deemed unwilful in terms of classified information protection, does not bear much difference to the leaks perpetrated by Edward Snowden; in this case the classified information was disclosed to unauthorized persons. It appears that the weakest link in the chain of securing information against the unauthorized disclosure is not a technical security but a human factor. To give an example,the White House exposed their agent in Afghanistan who, due to the position held, was in possession of knowledge, the disclosure of which could pose a threat to the national security of the US and its allies. The name and position of the Chief of Station (Chief of the CIA Station) appeared on the list forwarded to journalists because of the President Barack Obama's visit to the Bagram Base in Afghanistan. The information was transferred immediately on a Twitter and was loudly commented there.[96]

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[93] J. Ensor, *Is this where James Foley was beheaded?* August 24, 2014, http://www.telegraph.co.uk/news/worldnews/middleeast/syria/11053544/Is-this-where-James-Foley-was-beheaded.html [access:4 VIII 2017].

[94] The lost digit – Buk 3x2 A bell¿ngcat Investigation, s. 2. https://www.bellingcat.com/wp-content/uploads/2016/05/The-lost-digit-BUK-3x2_EN_final-1.pdf [access: 1 VIII 2017].

[95] See. J. Baumann, *You'll Never Guess Where This FBI Agent Left a Secret Interrogation Manual*, December 20, 2013, http://www.motherjones.com/politics/2013/12/fbi-copyrighted-interrogation-manual-unredacted-secrets/ [access: 1 V 2018].

[96] G. Miller, *White House to investigate inadvertent naming of CIA officer*, May 27, 2014, http://www.washingtonpost.com/world/national-security/white-house-to-investigate-inadvertent-naming-

Even those who are aware of the value of OSINT in the intelligence work hold accounts on social portals and their identification, despite numerous attempts to hide, is not difficult, it requires only time and determination. That was also the case of the FBI Director James Comey, whose accounts on Twitter and Instagram were quickly disclosed after he publicly admitted that he had such accounts. A journalist Ashley Feinberg started first to look for accounts of his family members, which – as she rightly assumed – were easier to find. His son Brian, a player of a university basketball team happened to be her first target. Among the tweets of his team she found links to Brian's account and his photograph with a link to the same photo on Instagram, which appeared to be blocked. Using false account she asked for liking it on Instagram. The portal automatically offered further accounts of the people she might have known. Among them the journalist found some relatives of the FBI Director, including his wife Patrice Comby/Failor and a mysterious Reinhold Niebuhr, who had only a few friends on his account. After further research and analysis on the web Feinberg established that during his studies Comey wrote a thesis on a theologian called Reinhold Niebur which made her confident that she managed to identify Comey's account. Next, using the nickname „Reinhold Niebuhr" she browsed in some other accounts on Twitter and found out that the one nicknamed: projectexile7 referred to a project Comey was working on in his previous job.[97]

To conclude deliberations on the OSINT and its added value advantages to intelligence activities, the author would like to point out that as a result of rapid technological progress and continuous development of computer infrastructure the open sources of information, in particular these of virtual nature tend to impact the global reality to an ever increasing extent. The Americans noticed this trend and in response launched in 2011 the Open Source Indicators project within the DNI Office, responsible for research and studies of projects in the field of intelligence. Activities in publicly accessible and available open sources are being monitored. It enables to combine joint indicators in the web, forecast – and intercept early - significant social occurrences which may potentially entail some risks.

The Director of the National Intelligence, James R. Clapper, at a meeting of the Senate intelligence committee in 2016, assessing global threats pointed out that in their intelligence activities, apart from using the OSINT, special services may start using Internet of Things (IoT), i.e. monitor and derive information from the Internet-connected devices. Robert Steele went on further in his deliberations claiming that the services in the 20th century will most likely focus on each and every source available – the so called Open Source Everythings, which probably can get small scraps of information, giving some footholds, answering questions that are

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of-cia-officer/2014/05/27/5d5f41f0-e5e6-11e3-afc6-a1dd9407abcf_story.html [access: 4 IV 2018].

[97] A. Feinberg, *This Is Almost Certainly James Comey's Twitter Account*, 30 III 2017, https://gizmodo.com/this-is-almost-certainly-james-comey-s-twitter-account-1793843641 [access: 10 IV 2018].

the foundation of an analysis as Arthur S. Hulnick[98] claimed. It is worth mentioning that it is, or, to say the least, it should be a priority tool at the disposal of the intelligence activities at each stage of the proceedings conducted, allowing their verification and more insightful perception of the phenomenon under examination.

Abstract

The article is devoted to the nature, function and value of open source information in the context of intelligence activities. Analysis of selected examples of the use publicly available information show that over time, they are a tangible complement to the knowledge acquired through other methods known as classified. The author concludes that obtaining these desirable information is more and more difficult nowadays due to the amount of information that grows with each individual unit of time. The exponential rise of multi-source information causes an overload of analytical capabilities and information chaos, which requires additional verification and evaluation of their reliability. It appears advisable to say that due to its nature, taking into account the challenges of today, information is a "weapon of mass destruction", which can be used in two ways: as a tool of disinformation against the enemy, or in case of positive verification may contribute to the anticipative action giving the advantage in a security environment.

Keywords: Information, OSINT, open sources, open source intelligence, intelligence activity.

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[98] A.S. Hulnick, *The Downside of Open Source Intelligence*, „International Journal of Intelligence and Counter Intelligence: 2002–2003, no. 4, p. 565.