INTELLIGENCE AGENCIES AND NEW TECHNOLOGY

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Abstract: New technologies bring new changes. They are more accessible than ever and so is the knowledge of their importance. At the same time, they have the potential to transform and empower business but also to challenge the opponent's efficacy and capabilities. New technologies are already affecting the mode of operation of many agencies including the intelligence agencies. A large quantity of information is very difficult to process so it has become the occurring problem on a daily basis. In the past, data and information on a specific security problem or strategic goal were stored in one place, and then, using the analytical-synthetic methods they were evaluated and solutions were proposed. The digital age requires the intelligence agencies to collect, analyze and process a large quantity of data in a short period of time. This has been achieved with the invention of new technologies. However, this raises some other questions related to the need to transform certain methods of intelligence work, i.e. the institutional capacities of countries.

Keywords: *Intelligence agencies, intelligence methods, new technology.*

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INTRODUCTION

The intelligence activity has been present throughout all the phases of human civilization. Primarily, the subject of intelligence work is secrets in interpersonal relations, i.e. secrets of certain entities (countries, their alliances, institutions and individuals). While collecting data, the intelligence agency must process, classify and evaluate data usability. All this is done through the so-called intelligence cycle and its phases - planning, collecting, processing, analyzing and providing. Throughout history, the phases of the intelligence cycle have changed, i.e. the methods of intelligence work. First, for a long time the intelligence work has been practiced by people as individuals or informal groups because the intelligence agency as the institution did not exist. These individuals have collected (confidential) data for the needs of their rulers, using various tactics of conversation, reconnaissance and observation techniques, reading and analyzing contents, placing misinformation, using cryptography, encryption, etc. In the beginning, the data had a military-political nature. Later on, the other data important for achieving the rulers' goals were collected as well. Over time, classical espionage and counter-espionage have been developed, and along with it, intelligence methods and the institutionalization of intelligence work.

In their work, the modern intelligence agencies use various methods that can be classified into methods of gathering intelligence, methods of intelligence processing, producing intelligence and drafting final intelligence documents. The first group of intelligence activity methods - methods of gathering intelligence, can be classified: methods of gathering intelligence from human sources, or Human Intelligence - HUMINT, which include: a / agent method, or secret intelligence gathering by agents (clandestine collections by agents), b / research method, c / gathering intelligence from open sources, i.e. Open Source Intelligence - OSINT; method of cooperation, and technical method or Technical Intelligence - TECHINT, with many different gathering disciplines. The second group of intelligence activity methods - methods of processing intelligence, production of intelligence, and the preparation

of final intelligence documents include all, social, technical and to natural sciences known scientific methods and methodological procedures and techniques. The end result of the intelligence agencies' work in the implementation of intelligence-informative and intelligence-security functions are final intelligence products (final intelligence) which are synthesized and provided to the end users in various forms of intelligence documents (Bajagić, 2015).

Today, the end users of intelligence products, and also everyone else using modern technology, can access a variety of information, including raw intelligence. How useful such information will be to them depends, above all, on their knowledge, skills, abilities, but also other circumstances.

According to the theorists, the new *pull* architecture should improve user's ability to recognize the necessary material and have a wider view on certain areas of interest. In this process, decision-makers tend to bypass mid-level intelligence managers and access the database themselves or to directly contact specialists in a particular field. One of the great risks of the *pull* architecture is that a user, due to possibility of direct access to the database, takes on the role of an analyst because of the current dissatisfaction with the work of agency, arrogance, lack of time or some other reason (Dupont, 2003).

Therefor it is very important that a large quantity of information that comes to the intelligence agency is firstly systematized, classified and then processed and turned into the intelligence product. Analysis is the phase in which information and intelligence combine together, within a defined problem, with appropriate hypotheses and where different principles of intelligence analysis are applied. The assessment involves interpreting the results of the analysis and placing them in a broader context and, if possible, determining the level of probability. The intelligence agencies should continuously provide the final intelligence product to their users, respecting the principle of timeliness and efficiency. Such a mode of informing should be harmonized with the "need to know" principle, unless otherwise prescribed by law. According to its research methods but also to the end results, collecting and processing

raw intelligence and drafting the final intelligence documents is similar to the scientific research, it allows the end users - political decision makers, to draw conclusions about the existence of certain connection between the researched event and the processes. This enables them to have a more comprehensive view and to extend their knowledge of the causes, character, scope, forms and carriers of the threat. The final intelligence documents (studies, assessments and forecasts) should be informational support for making better foreign or domestic policy decisions, which is essentially the primary task of the intelligence agency. In modern intelligence agencies, this activity is primarily performed by analysts, i.e. analytics departments. In principle, the acceptability of analytical documents - final intelligence products by users significantly increases when the content, form and language used in the document support and complement each other. Among other things, modern security threats are characterized by interconnected activity on the domestic and foreign soil. Therefore, the data collected and processed by the intelligence or security component should be interconnected and conditioned, and their use through the unique intelligence cycle should be more practical and efficient. In this context, the final intelligence products - external documents should be grouped by thematic units and meet the needs of end users. Thus, external informing would primarily depend on who is the end user of the external document, so the language style of the analytical product should be adjusted accordingly, keeping in mind that the subject information (study, assessment or forecast) can be strategic, operational or tactical. As already pointed out, the information most often (studies, assessments or forecast) provided to the highest state bodies would be of strategic importance, while those information related to internal, security work would be sent to the law enforcement agencies and would be of operational or tactical nature. While trying to answer as many golden questions of criminology as possible, those information would contain a lot of specific data on potential perpetrators, i.e. felony offenders or felonies, terrorism or organized crime. (Đukić, 2017).

NEW TECHNOLOGIES AND INTELLIGENCE

Numerous security challenges and risks faced by the intelligence agencies have led to certain changes in the intelligence work. These changes have been conditioned by dynamic events of the outside world and the need to accelerate all phases of the intelligence cycle from planning, collecting, analyzing, processing, sharing, and making decisions.

The information revolution has affected the functioning of all state institutions, including the intelligence agencies. It has had an impact on every phase of the intelligence cycle and has brought new organizational and cultural changes in the intelligence work (Berkowitz, 1997).

The earlier period was characterized by a lack of data and information so the intelligence agencies had problems with analysis and proposing solutions. Now, the intelligence agencies have too many information so all of them need to be processed and quality solutions offered in a short period of time.

In this regard, numerous proposals for the reform and reorganization of the intelligence community indicate the need to move from a hierarchical, narrowly focused and inflexible system to a new one. It has been proposed that the new intelligence model take advantage of available information technology and information from public sources, to apply new analytical tools and overcome the problem of "information overload" in order to achieve system flexibility and provide quality analysis and timely indicators of "early warning" (Liaropoulos, 2006).

A report by the Center for Strategic and International Studies (CSIS) states that new technologies such as artificial intelligence have the potential to transform and empower the intelligence community while simultaneously presenting unprecedented challenges from technologically capable adversaries. These technologies can help expand, automate, and sharpen the collection and processing of intelligence. They can augment analysts' ability to craft strategic and value-added analysis and insights, and enable the IC to better time, tailor, and target intelligence products for key decision makers. Central to success in the intelligence realm will be the adoption and assimilation of emerging technologies into the way intelligence is

collected, analyzed, and delivered to decision makers. If intelligence refers to providing timely, relevant and accurate insights into foreign actors to provide an advantage in formulating policy, then many new technologies hold the potential to penetrate deeper and wider into the research field. Data should be delivered at greater speed, scale, and specificity for consumers. Emerging technologies are already reshaping how the IC gathers, stores, and processes information but will likely transform all core aspects of the intelligence cycle in the coming decades—from collection to analysis to dissemination. Driving this change is the convergence of four technological trends: proliferation of networked, multimodal sensors; massive growth in "big data," both classified and unclassified; improvements in AI algorithms and applications particularly suited to intelligence, such as computer vision and natural language processing; and exponential growth in computing power to process data and power AI systems. However, as we consider the opportunities presented by emerging technologies like AI, it is also important to understand that these technologies are neither silver bullets to intelligence tasks and problems, nor independent from a much broader technology and human capital ecosystem. In a world of proliferating sensors and exponential growth in data and computing, AI can help enable intelligence collection organizations in automating and simplifying the processing of collected data and in identifying and prioritizing collection targets across the various "-INTs"— geospatial (GEOINT), signals (SIGINT), human (HUMINT), and open-source (OSINT). AI applications can then assist analysts in how they receive, visualize, and exploit that data. AI is particularly well-suited for more technical means of collection such as SIGINT and GEOINT, helping process and analyze their massive pools of sensor-derived data. For GEOINT, AI capabilities such as computer vision can help automate the processing of reams of imagery data and perform critical, time-intensive tasks, such as image recognition and categorization at speed and scale. For SIGINT, AI can be similarly useful in automating the processing of electronic signals data (ELINT), while speech-to-text translation/transcription and other natural language processing capabilities help decipher intercepted communications (COMINT). In addition to the technical "-INTs," AI tools can also enable

the on-the-ground human operator in the most core HUMINT mission: recruiting and deriving intelligence from foreign agents. AI algorithms could be trained to help "spot and assess" potential sources by combing open-source data. Advanced analytics could then help construct "digital patterns-of-life" of these recruitment targets, assisting in predicting their activities and verifying their access to desired information. These tools could then be used to monitor for security and counterintelligence risks before and after recruitment. (Brian Katz, 2020). The report also states that emerging technologies can also transform and augment how analysts make sense of ever-growing data and team with machines to deliver timely insights to decision makers. "The future of analysis," CIA's former Chief Learning Officer Joseph Gartin writes, "will be shaped by the powerful and potentially disruptive effects of AI, big data, and machine learning on what has long been an intimately scaled human endeavor." Analysts could harness AI to more efficiently find and filter evidence, sharpen and test their judgements. The result could be an analytic cadre with more strategic bandwidth and better able to exploit what will remain their "intimately human" advantages in applying context, historic knowledge and expertise to the subject matter. In addition to providing inputs for analysis, AI tools can also perform certain types of analysis, enabling analysts to offload more tactical or time-intensive tasks onto machines. Even today, all-source analysts are still called upon to craft daily intelligence products monitoring crises and summarizing geopolitical events when AI can cull the same data—often primarily open-source—and generate written summaries. Machines could also supplement, aggregate, or substitute for analysts in areas where the IC has a mixed tracked record and unclear comparative advantage, such as predictive analysis and long-range forecasting. Analysts should be able to leverage AI, including deep learning, to help sift through reporting streams to identify and visualize patterns, trends, and threats. Emerging technologies can help transform not only the crafting of intelligence but also how it is delivered to decision makers—at the time, place, and level needed to have impact and stay ahead of the decision curve. Emerging technologies hold incredible potential to augment, improve, and transform the collection, analysis, and delivery of

intelligence but could require fundamental changes to the types of people, processes, and organizations conducting the work (Brian Katz, 2020).

Nowadays, new technologies and innovations are widely spread and more available on the market. Artificial intelligence, virtual and augmented reality, Cloud technology help operating many, including the intelligence agencies. Collection and processing of intelligence data, drafting tactical and strategic analyzes, timely informing users are just some of the advantages of modern technologies. Through the preparation of such analyzes, a large amount of information is sublimated, problems are defined and solution offered in a relatively short period of time. However, if all information on a particular security or other intelligence matter are not included, the question may arise about their topicality, as the information quickly precede each other and analysis based on them may be outdated and ineffective. In the past, data and information on a particular intelligence / security problem or strategic goal were stored in one place, and then, using the analytical-synthetic methods, they were evaluated and solutions proposed. Analyzing and evaluating were a constant process of determining the intelligence / security validity, accuracy and completeness of every specific data, information or document while discarding irrelevant data. Also, certain broader intelligence or other problems and event were considered, as well as their overall and individual causal relationship. The connection, form and methods of action, assessments and forecasts of a certain event researched by intelligence agency, its actual, current and possible (future) dimension, as well as assessments and forecasts of the situation as a unity, were also the subject of the intelligence analysis.

Unlike earlier times, the digital age requires the intelligence agencies to collect, analyze and process large amounts of data in a short period of time. Whether the speed of information collection and dependence on them, in the future, will put in the background those events / objects of intelligence interest or will direct and shape them in a certain way will depend on many factors, primarily the speed and amount of collected (processed) information, history of the events themselves, their knowledge, as well as the quality of the overall intelligence work. A large amount of

information and their fast flow will determine the need for analysts' quick reaction and fast delivery to users. However, new technologies, their usage and usefulness must not lead to a point where information, due to their topicality, blur or shape the same events and become a purpose for themselves. Present and future events of interest to the intelligence agencies need to be viewed holistically, in context and continuity, in order to make sense and purpose. It should be taken into consideration that the intelligence-interesting events which already have certain "routine projections" do not filter or shape the information itself and thus jeopardize their relevance, quantity and quality. That is why a certain balance of both is needed, studious and fast, but above all, useful for achieving goals. When the open sources data are supplemented with those collected from human sources or technology, the complete information will be provided. New technologies will help analysts to get significant assistance and reduce the time required to collect and process data. In the current information age, the ability of analysts to collect and process a large amount of information in a relatively short period of time is increased by far. Same applies to making analyzes and assessments with added value and informing decision makers. Where analysts cannot provide answers to more or less complex questions with the help of modern technology, the technical and human factors will have to be included. This will include the use of other intelligence methods, primarily HUMINT and TECHINT. Earlier, there was the principle that intelligence collection and analysis should be separate processes, while today the opposite is true. It has been shown that analysts and intelligence agents need to work closely together in so-called operational teams in order to make the collected and processed data more useful in the implementation of intelligence tasks. This approach can cause certain problems, which are primarily manifested by the proximity of analysts to the operational situation, i.e. persons and objects of the intelligence interest, security problem assessment, lack of time for quality analysis, etc., but these shortcomings can certainly be eliminated by finding a suitable balance between the collecting phase and analysis phase. Despite the rapid development of technology, human intelligence will continue to be an indispensable asset of collecting data in the field. In

certain cases, the speed of flow and information processing will also require the speed for finding human sources. Thus, artificial intelligence algorithms will try to find potential candidates for cooperation using open sources, while analytics would be useful in determining the so-called "digital life patterns", analysis of intelligence-interesting targets, potential recruitment of sources, checkup and forecast of their behavior, access to intelligence-interesting targets, relevant information, etc. It used to be unthinkable that machines would be able to propose potential agents, but new technologies will try to make a breakthrough in that segment as well. It is certain that this segment of the intelligence work will remain to be very specific, having in mind certain phases of the so-called agent cycle but at the same time, in some situations, will speed up and facilitate work with all possible limitations.

CONCLUSION

New technologies also bring new benefits. They have the potential to transform and empower the business and to be a challenge to success at the same time. Artificial intelligence, virtual and augmented reality, Cloud technology help operating many, including the intelligence agencies. Collecting and processing intelligence, making tactical and strategic analyzes, timely informing users are just some of the advantages of modern technology. The intelligence agencies, as specific organizations with special authorities, by achieving their goals will be among the first to try to gain possession of new technologies, to take advantage of them, but also to gain an advantage over rivals. This will require certain technical, organizational and personnel changes. The integration of new technologies into the intelligence work will also bring new quality. This will include additional specialization of analytical and operational staff, their continuous training, but also the transformation of intelligence capabilities. New technologies are already affecting the collection, analysis and processing of information, but in the long run, they will affect all other phases of the intelligence cycle from planning, collecting, analyzing, processing, sharing, and decision-making.

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