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OSINT¹ BEYOND SECURITY POLICY

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ABSTRACT: The objective of the paper is to give a brief overview of OSINT, which was originally used mainly in military operations in the field of state security intelligence, in light of the literature. First, the concept of information is clarified by illuminating it with concise definitions. Foreign and domestic approaches to the subject are compared in a few words. Some historical examples are given to illustrate OSINT's use in the past and its application in different fields and periods. The importance of OSINT extends beyond its everyday use, as evidenced by the fact that it is still used today by governmental bodies, in security policy, from the civilian sector to marketing. The World Wide Web and social media have brought radical changes. They have transformed the way we search for information and the tools we use. At the same time, the development of information technology has seen unprecedented progress. This is why both computers and artificial intelligence have been put at the service of open-source intelligence. The paper considers both the advantages and disadvantages of OSINT and reflects on legal and ethical issues, providing a background knowledge of the law.

KEYWORDS: OSINT, open-source intelligence, information, military intelligence

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INTRODUCTION

From the very beginning, information has been essential for humanity because it meant knowledge – and knowledge is power. Already in ancient times, it was collected and used to its advantage. Over the centuries, the methods and means of collecting information have evolved and changed. Open-source intelligence, commonly known as OSINT, has thus become one of the most widely used methods because it is cost-effective, accessible to all, legally obtainable, and, within certain limits, ethical. Since the Middle Ages, it has become an indispensable tool for state institutions, both at the military and decision-making levels. At that time, libraries were one of the main sources of freely available information. The development of information technology in the 20th century led to a wider dissemination of OSINT. The real turning point came with the advent of the Internet, which increased the volume and speed of OSINT, as well as its methods to an unimaginable extent. The focus shifted from traditional sources to virtual sources that could be accessed and obtained over the Web. It has thus become one of the most topical and rapidly evolving academic fields of

Open Source Intelligence.

our time. It is now used by all disciplines, from public intelligence organizations to civilian society and the corporate and commercial sectors. The questions are: despite its advantages, disadvantages, and dangers, to what extent do we use OSINT consciously in our everyday lives, and is the general perception true that the Web has completely taken over the role of the library as an information center? My study aims to examine, analyze, and clarify the use, evolution, and development of open access to information in different eras. I do not aim to be exhaustive in such a topical field, but provide a few mosaic-like cases, ideas, and analyses that may inspire a deeper understanding and research of the process used today.

INFORMATION

It is perhaps worth starting with the essence of the topic: to clarify the concept of information in a few sentences, without claiming completeness, since the core of OSINT is information itself. Since the beginning of mankind, information has played an important role in all areas of life. Although at first sight it seems a simple concept,² if we go deeper, we find ourselves in a jungle of inextricable meanings. For just as the various disciplines have diverged over time, so has information science taken its place in the system. There is now a huge body of literature on it, a plethora of definitions,³ and different aspects of different disciplines have different perspectives.⁴ Therefore, all disciplines from applied sciences to social sciences have developed a world of meanings for information. This is how, among other things, mathematical information theory and social science theory were born, but the economic and philosophical approaches are also well known.⁵

Far from being exhaustive, a few basic definitions of information are given here to underline its importance: "Information is observation, experience, or knowledge given in an accessible form about certain facts, objects, or phenomena [...] The concept of information is closely related to the concepts of data and knowledge [...] Information is interpreted data, that is, the subjective meaning of data for a person or organization [...] In the digital age, the production, use, management, and spread of information have been given a prominent role [...] Information is a special resource".6

Going beyond theoretical approaches, we know that throughout history, information has been of inescapable practical importance, a source of power, and often an impregnable advantage over adversaries. Information and its possession were simply indispensable during the various small-scale or major wars.

Information also brings many benefits and advantages in achieving peaceful goals in times of peace, if it is accessed first and at the right time. In the civil and economic spheres, in commerce, in the corporate sector, at the political level, and even in everyday life, information is a key to progress and advancement. First, knowing where and what is in demand is the most powerful weapon a trader or manufacturer has against its competitors. This brings us to one of the most important properties of information: the time factor. It is not enough to get the information; one must take the time to get it and use it in the right way at the right time. From the moment it is made public and more and more people possess it,

Word of Latin origin: news, message, information.

³ Vakkari – Cronin (eds.) 1992.

Fülöp 1996.

⁵ Capurro 1992.

Orbán, no year.

its value exponentially decreases. It may sound cliché, but it is still true that information is the most useful if it is made public. The main cornerstone of this analysis is OSINT,⁷ i.e., open-source intelligence that is freely available to all. Its importance and relevance are demonstrated by the fact that it has been gaining prominence in decision-making at the government level for decades. Public authorities around the world, including our own, place increasing emphasis on open-source information. This is reflected in the various bodies that have been set up for decades to deal with open-source intelligence. Just to look back over the last quarter of a century, in Hungary between 2001 and 2016, this task was carried out by the Coordination Center Against Organized Crime (SZEBEKK), which was established by Act CXXVI of 2000.⁸ As its successor, the Counter-Terrorism Information and Criminal Analysis Center (TIBEK) started its operation on 17 July 2016, in accordance with the 1995 Act on the Coordination Center Against Organized Crime. In 2022, the coordination of civilian national security services was unified, and the National Information Center (NIC) started to operate as the successor of the previous organizations.⁹

THE CONCEPT OF OSINT

Although there is no fixed definition, the concept of OSINT has been elucidated in various forms by several authors. In fact, at the turn of the millennium, NATO, one of the world's largest organizations, published a handbook in which it defined and clarified OSINT's essence and tools. "OSINT is information that has been deliberately discovered, discriminated, distilled, and disseminated to a *select* audience, generally the commander and their immediate staff, in order to address a *specific* question." America's National Defense Authorization Act introduced a few years later, in 2006, also includes a definition of OSINT: "Open-source intelligence (OSINT) is intelligence that is produced from publicly available information and is collected, exploited, and disseminated in a timely manner to an appropriate audience for the purpose of addressing a specific intelligence requirement."

To get a clearer picture of OSINT, look at some definitions from some Hungarian authors. Perhaps one of the most general definitions is from Péter Bányász: "Open-source intelligence retrieval [...] is an information gathering process whereby information is retrieved from publicly available sources, analyzed, evaluated, and used for a specific purpose." Another is from Gábor Lévay: "It refers to the professionally based search for, collection, selection, analysis, evaluation, and use of information that exists outside the military intelligence and reconnaissance system, which is publicly available (i.e., to all individuals) by legal means or is disseminated in a restricted circle, but is not classified". A third researcher, Csaba Vida, defines the concept as follows: "OSINT activity: the autonomous open data collection activity means the search for, collection, selection, evaluation, and use of unclassified data, published by a person or organization, publicly available by lawful

⁷ Today, there is an inexhaustible number of sources available, both printed and electronic.

^{8 2000.} évi CXXVI. törvény a Szervezett Bűnözés Elleni Koordinációs Központról (Act CXXVI of 2000 on the Coordination Center Against Organized Crime) 2000.

⁹ Nemzeti Információs Központ (National Information Center) 2022.

¹⁰ NATO 2001, 2-3.

¹¹ PUBLIC LAW 109-163.

¹² Bányász 2015, 23.

¹³ Lévay 2006, 6.

means or disseminated in a restricted manner, based on a specific methodology, to meet intelligence needs". 14

Among the plethora of definitions, the essential difference between the above is that while the US documents refer to open-source information as the object of intelligence gathering, Hungarian researchers emphasize not only the public quality of the source but also the open nature of the information itself. It follows that such information cannot be classified. In its simplest formulation, we speak of OSINT when the information is available to anyone in the public domain and can be obtained by legal means, including information that is distributed in a restricted way, thus, is subject to registration or subscription. Regardless of the type of OSINT (civil, military, or business intelligence), it has become part of our everyday lives, and everyone collects and uses it according to their own needs and requirements. Its unity – and most of all its importance – is most evident from the fact that it is indispensable for certain procedures at almost all levels of management and is vital in decision-making. In

It should also be made clear that OSINT is not the same as surfing the Internet or gathering information from social media alone. It is an operation, a procedure that involves the collection, processing, interpretation-evaluation, and use of information according to certain criteria for a certain purpose. From the collection and processing of this information, it is possible to generate even classified information through analysis-evaluation by appropriate professionals and comparison with other (even classified) information. OSINT's main elements are therefore:

- data acquisition, which involves the collection of open information;
- processing the information (validation);
- evaluating, analyzing, and determining the usefulness of the information;
- compiling a report, transmitting it to the target audience or client. 17

To summarize, the OSINT conceptual framework thus distinguishes between:

- OSINT activity;
- OSINT data:
- OSINT information:
- authenticated OSINT information.

Each has its own role and function in the system. OSINT activities include the search for and acquisition of publicly disclosed, unclassified information by lawful means, and its classification. OSINT data is such data that has not yet been published or processed by others, such as photographs, video recordings, letters, statements, etc. OSINT information is such information that has been selected according to certain criteria and gathered from open sources, such as books, newspapers, daily reports, etc. Certified OSINT information is such information that has been compared by experts and analysts to other information and facts, even from certified or verified sources, and declared reliable information based on this information.¹⁸

¹⁴ Vida 2013.

¹⁵ Solti 2019, 3.

¹⁶ Szabó 2019, 69-71.

¹⁷ Kis-Benedek 2020.

¹⁸ Szabadföldi 2022, 38.

Today, in the world of the Internet, we tend to see the World Wide Web as the source, or at least the primary source, of OSINT. While it is true that with its emergence, an inexhaustible amount of information is available, growing exponentially every day, we cannot ignore the fact that its traditional sources are as useful today as they were in the past. Accordingly, the NATO Handbook (2001) identifies the following sources as the primary ones for OSINT:¹⁹

- traditional media sources (including both printed and digital);
- commercial online sources (both printed and digital);
- other forms of commercial online information;
- "grey literature" (non-public);
- overt human experts and observers;
- commercial imagery;
- commercial cameras;
- non-governmental organizations;
- religious organizations.

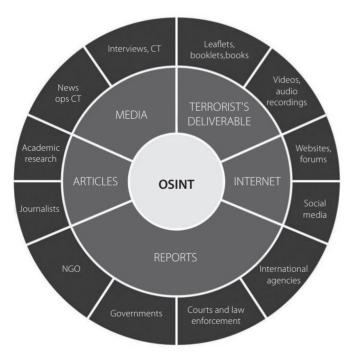


Figure 1 OSINT and its sources

Source: https://linkurious.com/blog/graph-based-intelligence-analysis/

In addition to these, Hungarian researchers add further sources to the above list. These include, for example, educational institutions, research institutions and their libraries, journalists, language schools, business and international organizations (e.g., the International Red Cross, the UN, and its various related organizations), and NGO briefings (hearings,

¹⁹ NATO 2001, 5-11.

legislative debates, press conferences, and even the budget itself). Also, social networking sites on the Internet²⁰ and any platform or individual (e.g., data broker) that creates, provides, or contains information for the public.

OSINT IN THE PAST

OSINT, as an information gathering technique, is not new; its origins go back to antiquity, and it is practically as old as mankind. The devastating outcome of the famous Battle of Kadesh of the Egyptian Pharaoh Ramses II proves that not only information but also disinformation is crucial for those who use it well. ²¹ The advent of writing, the printed press, and the spread of books made it easier to collect, store, and categorize information, and more importantly, provided the news and information "divers" with significant source materials. Travelogues, narratives, chronicles, and war memoirs were the first OSINT sources. From a political point of view, the monitoring of the print media (daily newspapers, trade journals) was of particular importance. This is best symbolized by the 19th-century saying attributed to British Prime Minister Lord Palmerston: ²² "We don't need spies, we read the Times". ²³

Returning to the operations, one of the indispensable aids was the map, which helped the troops to move. The most widely used maps were the Michelin company's road maps, which were commonly used in the Second World War, both in North Africa and during the advance in Italy and France. Guidebooks and various briefing books were also a great help as OSINT sources to diplomats, soldiers transferred to foreign countries, and secret agents. The range of OSINT sources continued to expand with the development of technology. Thus, the advent of telecommunications and radio broadcasting further enriched the range of OSINT tools.²⁴

The emergence of the terminology used today (OSINT) itself is not related to the spread of the Internet; it dates back much earlier. Its first traces can be found primarily at the political level, where the method of searching for information to support decisions was already in use before the mid-20th century. Its roots can most probably be traced back to America in the early 1940s. Based on research at Princeton University, President Roosevelt set up a financial fund to create a department (Foreign Broadcast Monitoring Service, FBMS) within the Federal Communications Commission to monitor and follow news and events in the foreign press and media and to inform the relevant government leaders. Eventually, this organization was integrated into the Central Intelligence Agency (CIA). In the half century that followed, OSINT underwent a major evolution and transformation.²⁵ Today, the use of open-source information is essential for decision-making in political and public issues, as well as for effective national security.

The real breakthrough for OSINT has been the emergence and explosion of the Internet and digital networks. At the same time, the exponential growth of data on the web has made it possible to obtain information rapidly through digital means, making open-source

²⁰ Kis-Benedek 2020.

²¹ Dezső 2019, 18.

²² British Foreign Secretary 1830–1841 and 1846–1851 and Prime Minister 1855–1865.

²³ Regényi 2019, 33.

²⁴ Regényi 2019, 34.

²⁵ Márton 2023, 1424.

intelligence an increasingly dynamic industry. ²⁶ The emergence of the World Wide Web has therefore led to an explosion of information. At the same time, storage capacities are also increasing and becoming more affordable. ²⁷

Social media itself has brought further changes to OSINT. Its emergence and increasing use, which started more than two decades ago, have brought new opportunities. In the words of Eszter Vattai, "Social media is a goldmine of open-source information acquisition". The more a person uses the Internet, including social media, the more information can be gathered about them.

Social media, especially through video-sharing portals, are increasingly playing an opinion-forming role. Thanks to their sharing functions, they can deliver their content to larger audiences, making them an excellent tool for influencing. From fashion to everyday habits, social and political events and news are being broadcast to an ever-wider audience and are nowadays consumed in a way that goes beyond television and radio broadcasting. At the same time, social media has also brought new challenges for OSINT users. One very serious challenge, for example, is the issue of disinformation.²⁹ Users often share information and data that is not true. In such cases, the veracity of this information must be checked from several sources. This is true not only for social media. History has repeatedly shown that the credibility of information gathered from various sources needs to be carefully assessed and checked to see whether it is reliable (see the Battle of Kadesh). This is particularly important in conflict situations. In such cases, it is impossible to establish their authenticity by relying on a single source. A very good example of this is the case in World War II, when German scientists used the timbre of the Big Ben bell to deduce the weather conditions, which was important for planning the bombing of the city and choosing the time of the bombing. Finally, when the British realized this, they began to broadcast the bell's chime from a recording, thus deceiving the enemy.³⁰ A similar disinformation was reported in the early 19th century, when Napoleon and Admiral Nelson, in their battles, published inaccurate information about the numbers, equipment, and positions of the Toulon army in Le Moniteur. 31 A series of examples from military history shows that disinformation can do as much harm to the enemy as the benefits gained from having the information.

Economists and commercial actors also take advantage of the benefits of OSINT daily. With the rise of social media, they can use the web to gather the most up-to-date information for their company. From consumer habits through trend analysis to information on competitors, all the most recent and relevant information can be gathered. The development of OSINT's business-to-business solutions is now a separate and growing market segment that can collect the most basic data on a global scale, especially using social media (see the trend analysis mentioned above), as it gives insight into our lifestyles, interests, and habits.³² To this end, larger companies even use the services of data brokers, as they usually have the information technology tools needed to gather the most up-to-date and relevant information in a specific field.

²⁶ Molnár 2021, 84.

²⁷ Csizner 2019, 20–21.

²⁸ Vattai 2023, 159.

²⁹ Szabó 2019, 77.

³⁰ Csizner 2019, 19–20.

³¹ Keegan 2005.

³² Dobák 2019, 88.

OSINT AND ARTIFICIAL INTELLIGENCE (AI)

To begin with, the changing, accelerating, and ever-increasing flow of available information and its management, processing, and analysis are nowadays major challenges from a technical point of view. Therefore, the application of artificial intelligence in the context of OSINT cannot be ignored. Given the well-known and exponentially increasing information dumping (especially thanks to the World Wide Web) in recent years, it is no exaggeration to say that it is almost impossible to find and extract the most relevant and credible information in any field of expertise by human effort. To illustrate: 500 hours of video were uploaded per minute to YouTube in 2024 (roughly 2500 new videos) and 3.7 million videos per day. Also, 694,000 hours of video content were streamed by users every minute, which translates to 5 billion videos streamed per day. According to YouTube statistics, the site has around 2.67 billion users worldwide today.³³ The graph below illustrates how the number of users of this social media platform grew between 2010 and 2023.³⁴

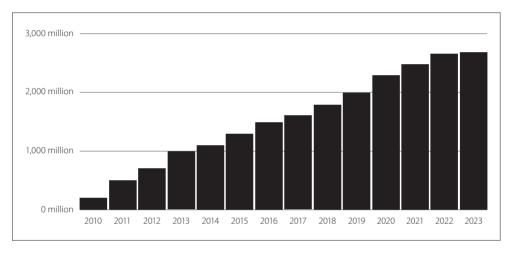


Figure 2 YouTube users 2010-2023

Not to mention that monitoring social media is almost impossible without the help of programs and software. Thus, the interaction between OSINT and AI is implemented through platforms and frameworks. Machine learning algorithms help to increase performance and speed. AI-enabled OSINT is also useful in information security, it is particularly effective for law enforcement, cyber threats, digital evidence collection, data leakage, etc. But the main goal of automating OSINT is to achieve as much performance as possible. It must be kept in mind that automated analysis of data cannot fully replace the need for human judgment.³⁵ The increased demand for open information has thus professionalized OSINT activities. A good example of this is the emergence of data brokers, who have perfected it through a variety of solutions, such as internet-based data collection methods and software development. It can therefore be seen that the ever more widespread

³³ Péter 2024.

³⁴ Shaw 2025.

³⁵ Szabadföldi 2022, 42.

use of OSINT anticipates the development of the information technology environment, the gradual application of artificial intelligence, and the emergence and spread of specific forms of data and text mining technologies.³⁶

BENEFITS OF OSINT

In addition to its undisputed usefulness, OSINT has several advantages. These are not insignificant to list:

- cost-effective, efficient acquisition of information;
- providing a comprehensive (global) and real-time overview;
- allowing users to monitor and obtain a significant part of foreign affairs intelligence on a daily basis;
- providing summaries, in-depth analyses, economic trends, and risk analyses;
- OSINT activities carried out in compliance with the rules are completely risk-free;
- can be run from home if the necessary organizational structure is put in place;
- rapid response capability;
- no need for permits, thus avoiding bureaucratic red tape.³⁷

The first point, cost-effectiveness, certainly deserves some elaboration to get a clearer picture. According to the literature, for example, while intelligence agencies can obtain 80% of their information with 5% of their information acquisition costs using OSINT tools, the remaining 20% of information is gathered by other intelligence branches,³⁸ which consume 95% of their budget.³⁹ This is confirmed by Alan Dulles'⁴⁰ claim that the majority (80–90%) of intelligence information is open source.⁴¹

DISADVANTAGES OF OSINT

- Information abundance is disrupted. In today's information overload, it is often very difficult to filter out the most relevant information.
- Language difficulties: The content of information can be somewhat distorted in every translation. It is advisable to search primarily in the language of the country concerned.
- Protected data is difficult to access. This is, in fact, the essence of OSINT.
- There may be a lack of source checking and a need to check credibility, as there is a lot of incorrect, redundant, or even deliberately misleading information.
- Sometimes the information obtained may be one-sided or biased.
- Dispersion of open information: Most of the time, we do not even know if the information
 we are interested in exists, and if so, where to find it.⁴²

³⁶ Dobák 2019, 90–91.

³⁷ Kis-Benedek 2020.

³⁸ HUMINT (Human Intelligence) = human operational activity, SIGINT (signal intelligence) = signal intelligence, technical intelligence, IMINT (imagery intelligence) = imagery intelligence, MASINT (Measurement and signature intelligence) = measurement intelligence.

³⁹ Szabadföldi 2022, 32.

⁴⁰ Former head of the CIA (Central Intelligence Agency) at the beginning of the Cold War.

⁴¹ Regényi 2019, 34.

⁴² Kis-Benedek 2020.

Beyond the advantages and disadvantages of OSINT, we may also encounter other limitations when using it. For example, there are legal, ethical, and even economic constraints. To comply with the legal limits, the CXXV Act of 1995⁴³ sets out the rules for data processing, authorizes service providers to process personal data, and sets out the ways of obtaining and further using the data. Other areas, such as marketing and market and scientific research, are guided by the 1992 Act⁴⁴ and the law known in the public domain as the General Data Protection Regulation (GDPR).⁴⁵

Ethical issues include: can I store data and information (e.g., images, events, personal data) about individuals obtained from open sources for further use or analysis? This consequently leads back to the legal question.

We talk about economic limitations when we can only access certain content or databases by subscription, registration, or order. A technical barrier may exist if the acquisition and display of certain information requires an appropriate IT infrastructure, a special computer, software, or programs.

INTERNET VS. LIBRARY WHEN USING OSINT

Looking through a small (but from a professional point of view, the most current and scientific) part of the Hungarian literature, we can see that man's hunger for information has led to the emergence, development, and, say, triumph of OSINT. In the pre-Internet era, there were fewer threats to individuals, although there may have been to some sources. However, the World Wide Web has radically changed the way open-source information is available to all.

Connected to OSINT, but still slightly diverging from it, it would be very important to examine and compare the evolution and role of the use of libraries and the Web in this context. As we know, before the Internet, libraries and archives were the primary repositories of so-called open information. However, with the advent of the Web, libraries are known to have gradually been relegated to the background as the main places to find information. There is, therefore, a general perception that the number of library users is declining. Even the most extreme predictions, that we are approaching the end of the Gutenberg Galaxy, 46,47 seem to be dissipating, as the usefulness of libraries and their role in science, research, and culture remain almost unchanged. So is their role as open repositories of information. However, it should be noted and accepted that the number of users (at the very least, the number of on-site users) has dwindled considerably, but by no means to the tragic extent that was predicted. And the demise of the book and library is no longer worth talking about. This leads to another hypothesis and question: Internet vs. library. In other words, in the case of open access to information, where do users primarily turn: to the Internet or the library? Before we quickly name the Web, let us be clear: the library can be used as a cross-platform on the

⁴³ 1995. évi CXXV. törvény a nemzetbiztonsági szolgálatokról (Act CXXV of 1995 on National Security Services), 1995.

^{44 1992.} évi LXIII. törvény a személyes adatok védelméről és a közérdekű adatok nyilvánosságáról (Act LXIII of 1992 on the Protection of Personal Data and the Disclosure of Data of Public Interest), 1992.

⁴⁵ European Parliament and the Council 2016.

⁴⁶ The term Gutenberg galaxy refers to a period in human cultural history in which the printed book has been prominent as a medium of communication from the 15th century to the present day.

⁴⁷ Bujdosóné Dani 2012.

Web. So, let us distinguish between someone searching for information on the World Wide Web but not on a library platform, and searching in a library, whether they visit the library physically or via the Internet. After all, in the times when the Web started, libraries understood its triumphal march that continues to this day. They have adapted their activities and services to the opportunities offered by information technology and digitization, they have built up their digital infrastructure, and a large part of their collections are now available online. This is why libraries today are not just collecting documents, but also information. A significant part of their services is available online. The question is clear: where do we primarily look for information today, on the Web or in the library? It is particularly addressed to those who, even before the advent of the Web, had an information storage space, the library, as an integral part of their daily lives. These are students, teachers, and researchers in higher education and research institutions. It would be worthwhile and important to carry out this survey in the context of a larger-scale research project, which could answer the question, among others, as to what extent the use of OSINT, brought to the surface by the Internet and made part of everyday life, has made libraries self-conscious and marginalized them as open information-gathering and service institutions.

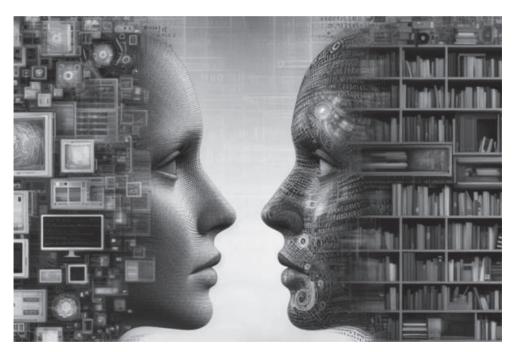


Figure 3 Digital library vs. traditional library
Source: https://ic.softlinkint.com/blog/digital-library-vs-physical-library-the-ultimate-face-off/

CONCLUSION

It is no exaggeration to say that OSINT, like any other field, has been characterised by evolution and continuous change. Its fundamental "cell", information, has always determined its evolution. It has been used in different fields in different eras, its role being to satisfy

mankind's hunger for information. Over time, it has played an increasingly important role in warfare and political decision-making, and public bodies have therefore provided an institutional framework for open-source information. In the 20th century, it became indispensable in law enforcement and the detection and prevention of terrorist acts. As we have seen, around 80% of intelligence information is obtained this way, also because of its cost-effectiveness. However, since the information explosion took place thanks to the Internet towards the end of the 20th century, civil, business, and corporate sectors now use it on their own devices, to their needs, and tastes. Trend analysis, habits, and competitor mapping are all areas where open access to information is now unthinkable. Social media has brought a new twist, where users create the content and the wealth of information, and the service provider only provides the framework. Nor can we ignore the fact that the increasing use of social media has been accompanied by the growing role of OSINT in shaping and influencing opinion. In particular, we can see – not only at home, but also abroad – how politics and different world views exploit this and try to use it to their own advantage. It is often easier to get information and news through social media (YouTube, Facebook, Tik-Tok, X) than through traditional media (television, radio, newspapers, daily papers, etc.). Its advantages far outweigh its disadvantages, but this does not diminish its dangers, which should encourage everyone to use the Internet more consciously. It would be worthwhile to carry out a larger-scale study to find out how consciously OSINT is used in Hungary. It is at least as important a question whether the traditional information storage institutions (libraries and archives) have been replaced by the Web, as is now widely accepted as a fact, when collecting information by OSINT means.

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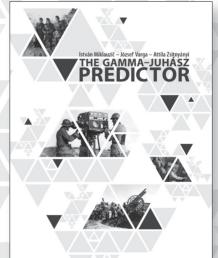
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