



## COMPETITIVE INTELLIGENCE AND OPEN SOURCE INTELLIGENCE – USEFUL TOOLS FOR COMPETITIVE BUSINESS

Raluca LUȚAI, Asst. Prof.\*  
Adina MIHĂESCU, Ph.D. Candidate\*\*

*"L'intelligence, ça n'est pas ce que l'on sait mais ce que  
l'on fait quand on ne sait pas."*<sup>1</sup>

Jean Piaget

According to principles of economic security, in this era of globalization and interdependencies, we understand that economic agents work competitively in uncertain markets. In the current international economic field, we cannot find either a perfect balance or long-term security conditions. Yet, this insecurity has the ability to stimulate the competitive field, to encourage innovation and adaptive competences. The anticipation of rapid evolutions and transformations which occur within markets or different industries represents a challenge which company managers handle with increasing difficulty. Even though much scholarly attention is paid to conceptual elements of competitive intelligence and its benefits, little is known about the way open-source intelligence can act like an instrument. This paper addresses this gap in the literature and analyze the way open-source intelligence can provide support for competitive intelligence actions.

**Keywords:** competitive intelligence; open-source intelligence; business-intelligence; methods; instruments; social media.

The ongoing development of the business field entails an intrinsic development, an update with the economic realities of the era of digitization. To meet its objectives, to have a profit and to be competitive, companies are bound to draft previsions and opinions of the future instead of simple and sterile information about their own present activity. From the incipient stage, from the moment of the drafting of a business plan, there is a need to be situated within the competitive field and a very thorough knowledge of it. The directing of resources, the handling of vulnerabilities, the drafting of strategies, all these have information as a starting point. From here, proper management decisions arise. Yet, rough information is, for the most part, useless; it becomes valuable as soon as it creates opportunities and a decisional advantage for the recipient. In the business field, transforming

information into intelligence is a work method which pertains to the field of Competitive Intelligence.

In a world of complex interdependencies, a globalized world dominated by technological progress, information and those who hold the information have increasingly more power. An important marker of the globalization process, the Internet has taken over the world and has ensured its role as the main generator of information in all fields, producing veritable metamorphoses in daily life. This revolution has considerably changed the way in which people gather information, express ideas and interact socially and professionally. When we talk about intelligence, we undoubtedly talk about information, and when there is an increasingly wider opening toward information, a change in approach is more than necessary both in public and private fields.

This paper intends to analyze the way in which two new and relevant concepts for intelligence studies, namely competitive intelligence and open-

<sup>1</sup> Intelligence is not what we know, but what we use when we do not know (Jean Piaget).

\**Babeş-Bolyai University, Cluj-Napoca*

e-mail: [raluca.lutai@ubbcluj.ro](mailto:raluca.lutai@ubbcluj.ro)

\*\**Babeş-Bolyai University, Cluj-Napoca*

e-mail: [adina.mihaescu@ubbcluj.ro](mailto:adina.mihaescu@ubbcluj.ro)



source intelligence, intertwine. Starting from the conceptualization of the phrases "competitive intelligence" and "open-source intelligence", the work analyzes the opportunities that competitive companies have in the technologized and digitalized field in which we live. The final part of the paper inventories, in short, a few instruments from open sources that can be used in competitive intelligence.

### **Competitive Intelligence and Open-Source Intelligence – recent concepts for contemporary realities**

The conceptualization of the economic intelligence field materialized starting with the 1960s, along with American professor Harold Wilensky's publishing of the work *Organizational Intelligence: Knowledge and Policy in Government and Industry*. The distinguished sociologist emphasizes here a need for the existence of collective strategies and a need for cooperation between governments and companies, toward coordinating a common knowledge and ensuring competitive advantage. Also, it reveals the necessity for knowledge in the economic field, as a strategic engine of societal development and change (Harbulot and Baumard 1997, 1-17).

Starting from the presumption that information is the first and foremost element of decision, we understand its importance and applicability in all fields, from the political and military to the social and economic. The study of intelligence in the economic field asserts itself gradually, as a necessity. The need for such management of knowledge is strengthened by the global competitive field in perpetual change. Competition between companies takes new shapes, and this aspect raises the issue of the systematic integration of these new dimensions in the analysis of competitive fields, both in terms of research and in terms of forming future managers.

In the era of globalization and digitization, it is paramount to understand information as a resource without which progress is rendered impossible. Competition over resources is a self-standing characteristic of economy, and, just as it focused on procuring raw material in the past centuries, it is now found in the procurement of information.

The application of intelligence studies on the economic field is the appanage of *competitive*

*intelligence*. Its complex activities focus toward the objectives of the business field in general and of entrepreneurs in particular. Because economic science is social, within it there are different interpretations and paradigms (Coșea 2006), all of which understand the importance and usefulness of information.

Competitive intelligence (CI) intends to understand the complex economic field of the current time, to gather information and then analyze it, to study and interpret the competitive field, composing a clear and relevant overview of it (Cavallo, et al. 2021, 250-275) Just as the *neoclassical school*<sup>2</sup> establishes value depending on the degree of usefulness (Dixit 2012), so is information relevant only as long as it can be used and it is prone to contribute advantages. In the technological era in which we find ourselves, the multitude of data imposes a rigorous selection of it, a constant classification, organization and adaptation. Thus, CI research is supported by different branches of intelligence structures: HUMINT (intelligence sourced from human sources), cyber intelligence, SOCMINT (intelligence sourced through social media platforms), OSINT (open-source intelligence). The latter, though it does not constitute a rather new INT, has astonishing value within information communities.

Developed along with the informational boom, Open-Source Intelligence (OSINT) is defined in specialty literature as any information that is public, open, available to all, that does not engender implications of a legal nature and that can be collected, validated and analyzed in order to create intelligence products (Clark 2013).

The importance of this new type of intelligence is unquestionable. This aspect is also justified by the North Atlantic Treaty Organization (NATO), for which open sources represent a vital component of its strategic vision. In November of 2011, the Alliance published the NATO Open-Source Intelligence Handbook, a complex handbook which offers, in its first chapter, a most comprehensive definition of this new discipline. OSINT is not seen as a substitute for satellites, spies or other forms of civil and military intelligence. OSINT is considered information which was discovered in

<sup>2</sup> The entirety of all the school of thoughts pertaining to economic liberalism.

the public space, then analyzed and disseminated toward a select audience, mainly the Commanding General and their personnel, with the purpose of catering to a request for intelligence (NATO 2001). In other words, OSINT applies the regular process specific to any type of intelligence, to the wide diversity of open sources, with the purpose of generating intelligence products.

Information gathered by means of open sources is also known, within intelligence communities, as "white information" (Bean 2011). The symbolism of the chosen color is evident: the gathering of information from open sources does not imperil individual rights, does not entail human risks, and it produces a shift in paradigm at the level of information communities. Thus, open sources represent a big opportunity for the intelligence community and others. This intelligence discipline regards the legal exploitation of open sources, the validation and analysis of data and information discovered either through processes of simple observation or through its acquisition. The usefulness of this process is the same as with any other intelligence discipline (HUMINT, SIGINT, etc.), which is to eliminate the unknown from the decisional equation.

The literature divides open sources into two broad categories: (1) traditional sources such as books and broadcast open sources and (2) digital open sources.

### **1. Traditional open sources**

The first generation of open sources is represented by books, magazines, but also by broadcast sources such as radio broadcasts or TV stations. The latter paved the way for this discipline. The history of open sources records the development of this analytical discipline in relation to an academic program developed by Princeton University in which the radio stations of the states beyond the Iron Curtain were analyzed, an activity that brought strategic advantages to the United States. In parallel, books or other types of written publications have always been a useful source of knowledge for government organizations. Their usefulness is also evident in the case of the business environment.

Books are a real open source used in intelligence work. They have always been used not necessarily for their actual content but for the references they contain. Books provide context on a

particular issue. Government organizations can use them to gather new information and to understand common or different views towards one or another aspect of society. For the business world, books provide a competitive edge in knowledge. They can increase managers' knowledge or develop creative visions that make them better understand the market in which they exist and develop. As for the actual understanding of the concept of competitive intelligence, those who run businesses or analysis departments in various companies have at their disposal books such as Kirk Tyson's *The Complete Guide to Competitive Intelligence* or Christopher Murphy's work *Competitive Intelligence: Gathering, Analyzing and Putting it to Work*. The two papers offer insights into the theory of competitive intelligence: how companies try to outperform their rivals, research methods and sources of information that generate the raw material for creating intelligence or analytical techniques that transform data and information into solid knowledge that can be applied in practice. Successful managers and company directors will apply the theoretical concepts identified in these types of papers to be successful in their field.

Another particularly important category is represented by newspapers and magazines which are useful for their much more specific content dedicated to certain topics. For government institutions, magazines can prove very useful. An eloquent example in this sense is the publication *Aviation Weekly*, which frequently provided details related to the military capabilities of the former Soviet Union (Williams and Blum 2018). For the business environment, magazines are a useful source for understanding the latest developments in the field or for analyzing the evolution of competitors who will use such supports to launch new products or strategic directions. For those really interested in the competitive intelligence environment publications like *Competitive Intelligence Magazine* exists. The publication has been offering the public since 1998 articles presenting best practices and innovations that enable companies to make strategic decisions based on information.

To these is added a special category always exploited by open source analysts, namely gray literature or gray information. The term gray literature refers to information obtained from



traditional sources for which access is obtained on the basis of a subscription. The U.S. Government's Interagency Gray Literature Working Group, in 1995, defined gray literature as "material of internal or external origin that is normally available through specialized channels and is not found in traditional distribution channels" (Williams and Blum 2018). Gray literature represents a category of open sources particularly important for the business environment. For example, the proceedings of a medical conference related to the Sars-Cov2 virus may represent a starting point for specialists of large pharmaceutical companies. Analysis of reports, technical sheets or other types of gray information can contribute to a deeper understanding of the business environment.

Broadcast sources are a category that includes radio and television broadcasts. Although books, newspapers and magazines have always been a source of data and information, it was only with the development and spread of radio that those involved in the process of gathering information understood how useful radio stations are for their work. After 1980 the whole world was revolutionized by the spread and popularization of television. Through the specific topics they address, through the fact that they cover local events and thanks to the fact that each of us has at least one television, we are all more informed and more connected with the things that are happening near us or far away from us. The intelligence community has understood the ease with which it can gather information and the role that television has in the open source world. The same has been understood by the big businesses who are keenly watching the marketing elements presented by the competitors. The development of digital radio stations and podcasts is an important and useful element for companies that want to know the market, competitors or the latest developments.

## 2. Digital open sources

„Information costs money... intelligence makes money.”  
(Robert Steel)

The digital world brings radio and television into one place, lowers costs and increases the variety of information that can be exploited. Digital open sources are revolutionizing the sheer amount of information they make available and

the availability of that information. The digital open sources that appeared and developed in the last decades bear the name of new media as (a) social media-blogs, websites, virtual worlds (Second Life etc.) or the already famous (b) social networks such as Twitter or Facebook. Social Media is a term used to describe the various technologies concentrated in the virtual world used to interconnect people, businesses in various forms of communication and information exchange. Social Media, through its characteristic elements and the possibilities it offers, has come to reflect every facet of modern man's social life. Different types of social media transform the individual from information consumer to information and content generator, which is vital for OSINT. All the information that surrounds us is our product. We can capture everything, record anything, write or publish anything we want. This produces real metamorphoses at the level of the individual and the business environment that understood the utility that social media offers and chose to be present. The vast majority of large businesses have not only developed websites but have chosen to open accounts on social media platforms. The online environment is used for brand development, customer interaction or marketing.

Intelligence communities have understood the important role of open sources in their activities. Such was also the case with the business field. Both fields have things in common: the need for information and the lack of certainty. Despite these similarities, it is important not to confuse espionage activity with activities specific to competitive intelligence.<sup>3</sup>

Douglas Bernhardt (economic and CI analyst) stated in the work *How to acquire and use corporate intelligence and counter-intelligence* that "a strategy that is not based on intelligence isn't strategy, but guesswork" (Bernhardt 2003, 405-407). Thus, we understand the importance

<sup>3</sup> Competitive activities through information works within legal and ethical principles. In the United States, The Economic Espionage and Protection of Proprietary Information Act has removed the offense of violating the business secret and the offense of private information theft from under the jurisdiction of local and state authorities and has added them under the jurisdiction of federal authorities. There is no such equivalent in the legislation of Romania or the legislation of the European Union; despite this fact, there are several laws which incriminate economic espionage.

of information in business, in the building of the very strategy of a company, the main marker in converging and developing a direction.

CI analysis entails a vast process by which identified information is sorted based on usefulness, then evaluated, analyzed and, finally, assigned to decision makers in the form of complex analyses, dedicated to gaining competitive advantages. The essential purpose of each manager is to gain profit (or as much profit as possible), and this is one of the main economic indicators which signals whether the chosen strategies are favorable.

The activities specific to the field of CI mainly analyze companies in two ways: an analysis method pointing inward (the company's internal environment) and the second one, pointed outward. While the former regards an in-depth analysis of each and every department, with working structures, processes and organizational charts, the latter aims toward the fundamental knowledge of competition and the field in which the activity is carried out.

The analysis of the company's external environment, a thorough process of data collection and multiple analyses, is carried out by working with data already on the market, which is to say **open sources**. The challenges raised by this environment to the collection and analysis activities are evident. The saying "looking for the needle in a haystack" is more than relevant, itself being the result of multiplying information and spaces wherein they can exist. The information explosion is a reality which molds many processes that companies launch.

From the vast category of open sources, one of the most important in the business field is represented by digital sources. Websites offer a wide array of information from all areas of activity, but also analyses of economic indicators, statistics, graphs, etc. In the virtual space, there are sites which provide these databases and analyses for a monthly subscription (e.g., [marketingdirect.biz](http://marketingdirect.biz), [risco.ro](http://risco.ro), [totalfirme.ro](http://totalfirme.ro)). At the same time, there is a possibility to access this data at no costs, by accessing the site of the Ministry of Finance in Romania (Ministry of Finance n.d.). This website provides a wide array of information, both for natural persons and for legal persons. Here can be found data referring to the legislation in force and the latest normative acts (as well as explanations

regarding them), templates for applications that can be formulated with regard to the tax administration authorities, but also useful links to other websites of Romanian authorities (Presidency, Senate, the Chamber of Deputies, the People's Advocate Institution, the Court of Accounts, the Special Telecommunication Service, the National Authority for Consumer Protection, as well as all the Ministries). Also, we can find information regarding the State Budget, Taxation, Public Policies, European Affairs, International Financial Relations, and State Aid.

All these are of particular interest when one aims to outline an analysis of the business field. Any company is obliged to be informed about the legislative acts and their eventual modifications, about the easiest methods of interacting with state authorities, about relating to European institutions and the communal economic field.

From the viewpoint of studying the competitive field, the website of the Ministry of Finance offers an accessible platform for interpellation and gathering of data regarding all economic agents registered in Romania. As for these economic agents and public institutions, information can be sourced regarding identification data, tax information and balance sheets. The latter are exceptionally important, as they constitute official accounting documents in which all of a company's assets are presented – active and passive. By analyzing them, one can learn company's profitability ratios, stock variables, the total value of assets, but also total debt value, debt ratio, available resources and their degree of use, the company's earnings per share, as well as where that specific company is valued and what growth power it possesses.

The website of the Ministry of Public Finance provides information from the central databases regarding the registration of taxpayers, both legal persons and public institutions, tax liability statements (VAT, excise duties, gambling), balance sheets from the past six months from trading companies, stock records regarding outstanding liabilities to the state budget (Ministry of Finance n.d.). Upon accessing the platform, it requires the introduction of the taxpayer identification number, which in fact represents the tax identifier of every trading entity in our country, which is unique and assigned along with the legal person's



authorization to function. Subsequent to its introduction and to pressing the validation button, the platform generates a page with that company's information. Out of these, the most important for an eventual competitive intelligence analysis are: payer name, address, registration number with the Trade Register, authorization, corporate tax, social and medical insurance contributions, etc.

Subsequently, one can check the financial markers in accordance with the balance sheet submitted yearly, beginning with the year 2016 and up to 2021 (the past six years). This information can be accessed for each individual year, such that one can easily gain a statistic over the specific company's evolution and its activity in the past years, and could rather easily generate a forecast of its future developments. The official balance sheet data deals with current and non-current assets, stocks, receivables, debt, capital, total revenue or total expenditures.

All this information is especially useful in conducting an analysis of the competitive field in which a company carries out its activity, but also in relations with suppliers, collaborators and customers. Solvency, as well as profit and loss account and their fluctuations in the past years can provide a clearer overview of the business partners and can influence, for instance, contractual terms. The decision to associate with a certain company can be influenced by the gathered information following a check-up of the company on the Ministry of Finance website.

The website of the Ministry of Finance in Romania represents an eloquent example for the large quantity of information to which companies have access upon analyzing the field in which they function. Aside from these websites, which are the emanation of the governmental element, there are many other websites or platforms created by actants in the private field, available by means of subscriptions or not, which can be accessed by those who wish to gain competitive advantage.

For instance, farmers who wish to be professionals when it comes to handling their own cultures or analyzing their competitors' cultures have at their disposal various commercial satellites that can be easily accessed through different platforms. Satellite images that were exclusively accessed by governmental structures in the past are now at the disposal of the general public. In this

respect, platforms like Sentinel Hub<sup>4</sup> or Planet<sup>5</sup> are eloquent. These provide the user with the ability to instantly view data harnessed from different satellites, presenting them with actual agricultural information through which farmers can analyze the evolution and health of their cultures<sup>6</sup>. By using this kind of platforms, they can cultivate more efficiently and more profitably. At the same time, they can also gain an overall perspective over the competitors' cultures.

Technological evolution has also transformed the way in which one can use information gathered from communication systems, radars or other signal-emitting devices. The gathering and analysis of this type of information is specific to the SIGINT field – signal intelligence, but has now become, in certain situations, a source of open information. In this manner arose platforms such as: Flight Radar<sup>7</sup>, which monitors air traffic, or Marine Traffic<sup>8</sup>, which provides an encompassing picture of marine traffic. The services offered by this kind of platforms can be used by transportation companies and more. Through them, they can optimize certain processes, thus raising their profitability, or know their competition better.

The biggest revolution registered by digital sources deals with the development of social platforms like Facebook, Instagram, LinkedIn or Tik Tok. These platforms build an environment in which the user can play the part of the information consumer or that of the information producer. Within these virtual spaces have also arisen the biggest and smallest of businesses. To maintain a dialogue with customers and to broadcast the most recent and most relevant information about their products or about business evolution, companies are more active than ever on social media. Beyond the marketing element, which offers a clear perspective over the direction in which a company is headed, these companies' customers or their competitors' customers lead online discussions about their experiences, perceptions and wishes.

<sup>4</sup> <https://www.sentinel-hub.com/explore/eobrowser/>, accessed on 11.11.2022.

<sup>5</sup> <https://www.planet.com/markets/monitoring-for-precision-agriculture/>, accessed on 11.11.2022.

<sup>6</sup> Different commercial actants have exploited this opportunity and have developed similar platforms in Romania. One example is the *ogor.ro* platform.

<sup>7</sup> [www.flightradar24.com](http://www.flightradar24.com), accessed on 11.11.2022.

<sup>8</sup> <https://www.marinetraffic.com>, accessed on 11.11.2022.

These conversations offer answers to questions and real-time, unfiltered feedback, which will directly affect the development of future strategies, while simultaneously offering a clear perspective over that particular business field. The analysis tools are various and must be used by all who wish to be one step ahead of the competition.

Although the benefits of the digital environment are obvious, the use of information from open sources also involves a number of challenges. The sheer volume of information available sometimes creates problems. The analyst may face a series of roadblocks that can make the process inefficient, and perhaps even a series of information that has no relevance. Gathering information can thus turn into a never-ending pool of discovery that increases human effort. The large volume of information can cause overload problems and the processing time can be too long.

### **Conclusions**

Acts of information gathering are continually carried out, processes that, once launched, need to be improved, updated and constantly perfected, their finality being represented by strategies, tactics that are, themselves, active processes with a high degree of adaptability.

Information from open sources, and especially information from digital open sources, are a tactical and essential strategic resource that can contribute to the reduction of unpredictability and uncertainty, not only at the governmental level, but also at the level of companies that understand that they need to work in order to be competitive. Open sources provide quick and low-cost access to a vast domain of information that can prove its strategic, operational or tactical usefulness, that offers

a framework which enriches already obtained information, contributing to the creation of an overall picture necessary to the field of competitive intelligence.

Even if the advantages take precedence, we cannot disregard the challenges and problems that open-source tools can create for the business field. The problems can mainly deal with overcharging the networks, the predisposition to manipulation or disinformation, and the eventuality of collecting information that is incompletely validated, which can harm the entire process. This is why information provided by the Ministry of Public Finance is more trustworthy, being an official source for enquiry by the economic field (and more) in Romania. Other types of platforms are dynamic (they exist today and may not exist tomorrow) and they sometimes imply additional expenses.

Yet, as mentioned above, using such tools can contribute in a considerable manner to the competitiveness of a business. Even though the benefits are countless, the exclusive use of such platforms does not suffice. They must be placed in a context, analyzed and interpreted. If used only as a source for companies to obtain information, a constant briefing with what is happening all around, especially in a specific field of activity, is achieved. Yet, the final purpose is not this, but aiding the company to compile forecasts and long-term plans, to become a leader, a trailblazer, not a simple follower. Ideally, they will gain a competitive advantage in the long term, a stability, a continual evolution.

Companies that carry out actions specific to competitive intelligence must use tools and methods pertaining to open sources in order to be at the avant-garde of the current globalized economic field.

### **BIBLIOGRAPHY**

- Bean, Hamilton. 2011. *No More Secrets: Open Source Information and the Reshaping of U.S. Intelligence*. Praeger.
- Bernhardt, Douglas. 2003. *Competitive Intelligence: How to Acquire and Use Corporate Intelligence and Counter-Intelligence*. Edited by Financial Times Prentice Hall.
- Cavallo, Angelo, Silvia Sanasi, Antonio Ghezzi, and Andrea Rangone. 2021. "Competitive intelligence and strategy formulation: connecting the dots." *Competitiveness Review* vol. 31 (no. 2): 250-275. doi:<https://doi.org/10.1108/CR-01-2020-0009>.
- Clark, Robert M. 2013. *Intelligence Collection*. Sage Publications.
- Coșea, Mircea. 2006. *Manual de Economie*.



- Dixit, Avinash. 2012. "Paul Samuelson's Legacy." *Annual Review of Economics* 4 (1): 31. doi:<https://doi.org/10.1146/annurev-economics-080511-110957>.
- Harbulot, Christian, and Philippe Baumard. 1997. *Perspective Historique de L'Intelligence Economique*. Intelligence Économique. [https://www.ege.fr/sites/ege.fr/files/downloads/16.perspective\\_historique.pdf](https://www.ege.fr/sites/ege.fr/files/downloads/16.perspective_historique.pdf).
- Ministry of Finance. n.d. *Agenți economici și instituții publice – date de identificare, informații fiscale, bilanțuri*. Accessed noiembrie 11, 2022. <https://mfinante.gov.ro/domenii/informatii-contribuabili/persoane-juridice/info-pj-selectie-dupa-cui>.
- NATO. 2001. *NATO Open Source Intelligence Handbook*. [https://www.academia.edu/4037348/NATO\\_Open\\_Source\\_Intelligence\\_Handbook](https://www.academia.edu/4037348/NATO_Open_Source_Intelligence_Handbook).
- Williams, Heather J., and Ilana Blum. 2018. *Defining Second Generation OSINT for the Defense Enterprise*. RAND Corporation.