How misinformation and disinformation affect the organization and its employees' performance in the digital era

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Abstract — **It is crucial to understand how information, when well managed, becomes the primary factor of intelligence and competitive advantage of an organization. Information management makes an essential contribution to achieving the organization's mission and strategy, affirming its business or area of operation, making its human resources and tangible resources profitable. Information is therefore so indispensable to the organizations that they often structure and classify it based on its organization, its functions and activities, that is to say, based on documentary production, information flows between departments, archiving and proof that this information constitutes. In 21st century organizations, where the digital paradigm is omnipresent, it's crucial that the information manager be aware that misinformation and disinformation are real threats to quality information and that can jeopardize the success of effective information management. Through the literature review, we intend to reflect on various theoretical issues, highlighting ideas and good practices to combat the danger of this negative reality. These include the need for all employees of an organization to have media literacy skills, which can be fostered and formally provided by the institution through lifelong learning.**

Keywords: strategic information management; informational functions; actors

of strategic management; misinformation; disinformation; media literacy

Introduction

Information is the most precious asset of an organization. In the age of information and knowledge we live in, with technological and scientific advances easily accessible to all organizations, the ones who have more information and know how to manage it more suited to their vision and strategy, will be able to gain competitive advantage faster than their competitors. Realizing the concept of competitive advantage as something that an organization does differently and/ or better than the organizations that compete with it in the same area of operations or business, it quickly becomes clear that the information obtained, filed, processed and produced by an organization is what gives it competitive intelligence to survive and succeed in its environment. The analysis of the environment, competition, politics, legislation, economy, society and technology allows the anticipation of trends, the prediction of eventual problems and the most effective decisions to achieve the previously defined objectives. All these studies, analysis and projections, which enable organizations to make decisions and gain knowledge and competitive intelligence, consist of the collection, processing, production, dissemination and use of information. In the 21st century, in the digital age, everything changes and happens very quickly. Access to information exists on every mobile or steady device,

with an internet connection, and thus information has become a weapon more accessible to everyone, allowing for faster learning, anticipation and greater ability to innovate [1].

Information management has its origins in documentary production, essential to the functioning of any organization. Only with the creation or production of documents can the data and information that enter in an institution be filed. Data is processed and becomes information that, in turn, when acquired and processed through the perception, understanding, concepts and values of individuals, becomes knowledge. Information managers are, therefore, indispensable actors in the management of organizations, they are the organizers of knowledge and the respective forms of information's distribution by organizations to their human resources.

In the digital era, organizations and information managers face a greater challenge in information management: the speed and ease with which information is disseminated through information and communication technologies. But also, the "dark side" of the digital era, which materializes in the misinformation, decontextualization, lack of rigor and intentional or involuntary error to which the employees of organizations are subjected [2].

The fight against the dark side of the digital era is accomplished through investment in information and media literacy. Humanity faces more than ever the daily floods of fake news and its sharing on social media with millions of people. It is misinformation and disinformation disguised as news and removed from its original context. Only the most enlightened and prepared are able to deal with the information and communication technologies and will be able to distinguish information from disinformation, misinformation and fake news, distinguishing the truth from purposeful deception conveyed by any digital platform. As the Commission's Communication to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions states in 2018 "The lifelong development of critical and digital skills, in particular for young people, is crucial to reinforcing our societies' resistance to misinformation." (our translation) [3].

Strategic information management in the organization

By the end of the twentieth century we were witnessing an abrupt development of information technology, with the internet's global spread booming in the 1990s. Information was quickly becoming easy to get and available to a large part of the world's population, organizations included of course. We have witnessed an excess of information at the time, and a need to separate excessive information from important and relevant information had begun to emerge. As early as 1971, Herbert Simon had already approached the information overload subject, claiming that there was a need for computer systems to process all the information in excess on that date.

The investment made by organizations in Information and Communication Technologies was beginning to grow rapidly, and with this, also an investment by individuals in their own training in new information technologies. In this highly competitive environment, managers soon realized the need to devise strategies for information-based organizations as a valuable asset for competitive advantage [4].

Lesca and Almeida [4] explored the strategic management of information, deepening their study and finding strong arguments that reinforce the extreme importance of information in organizations, such as: **decision making support** - decisions must be made based on complete, current, accurate, contextualized and appropriate information and on time in order to be as appropriate and effective as possible; **production factor** - with the relevant information and its proper management, there is a greater probability of developing products and services with higher added value for consumers, which is a key

aspect for business competitiveness; **synergy factor** - information's classification and distribution are essential to obtain positive results for an organization; each department and employee must have the necessary, correct, up-to-date and prompt information to carry out their activities and know the right path to assist the organization with their work, otherwise they will not communicate effectively between them and doubts, fears and poor performances will arise; **determinant factor of behaviour** - at the internal level of the organization, information is crucial for all human resources to be aligned with the mission and strategies to follow, performing their roles and tasks for the same purposes; externally, since the research and collection of information from the market, stakeholders and competitive environment, to information transmitted from customers, suppliers and competitors or even public opinion, information is one of the most important strategic factors.

Information management thus carries a great responsibility for managers, from search to document production, processing, classification, update, archive or retrieval, it's a process which must be totally appropriate for each organization. In addition, certain rules should be followed so that information's organization plans can be readily perceived or transposed, if necessary, to other environments and contexts such as different computer platforms.

Nowadays, most organizations have their organic structure and functions based on an information system or multiple integrated subsystems, which may include all the organization's functions and their activities, from customer management, billing, procurement, and related documentation produced by each of these activities, to data received by the organization, filed information and so on.

Most of these information systems are supported by computers due to the amount of information they support and the ease of information's distribution as they cover all stakeholders, activities, documents and their management, functions and people allocated to them.

The informational functions in organizations therefore involve the information management, the information systems' planning and implementation. It is also crucial to consider the maintenance of these same systems, the contribution to the employees' training, which are the users of information systems and so the fundamental contributors to the information systems' design and their maintenance over time.

Components of Strategic Information Management

Information management cannot fail to encompass the components of its life cycle, consisting of: 1) documentary production; 2) organization and archive; 3) distribution and 4) use of information.

As for those who manage the information, Tarapanoff et al. [5] mention that "Traditionally information managers who maintain information systems, decision support systems and similar operations in the public or private sector have never seen themselves as part of the same profession as librarians, archivists, or information scientists" (p. 5). However, their functions consist, to a reasonable extent, on the same functions as the professionals referred, because the information's inherent characteristics are the same in any of the organizational environments, as well as its life cycle.

Thus, strategic information management covers, regardless of the organization in which it is implemented, very similar and common activities to these professionals or actors of strategic information management, since the information's **acquisition or production**, where the existence of institutionalized practices is important and also, for which there should be norms for naming the produced documents, so they do not lose

track of any; with regard to the **organization and archive**, it is crucial to keep in mind that the purpose of information's organization is to contribute to improving productivity and ensuring the competitiveness of organizations, optimizing the identification and access to documents and preserving institutional memory; in the information's **distribution** phase, it should be considered the enterprise architecture, the information systems and/ or subsystems, the participants, the information flows, the roles responsible for the activities, the distribution of information, the human resources' training, the information system's maintenance in order to keep the whole information system useful, coherent, efficient and effective, because only then can the organization's investment in these information systems be justified.

Finally, in the **use** of information, which is the ultimate goal of information management, the manager must do all his work to achieve the organization's desired results enforcing its previously set and communicated objectives and ensuring the maintenance of information systems.

The actors of strategic information management

The actors of strategic information management are then those who intervene in the process of information management in the organization. Tarapanoff et al. [5] indicate **seven profiles**: **information managers**, who ensure the information provision to those who need it; **knowledge workers**, who place information at the service of organizational and production management, that is to say they convert information into knowledge; **knowledge managers** - knowledge management professionals - Chief Knowledge Officers – which are responsible for the strategy and implementation of information assimilation methods within organizations and for updating, refreshing and modernizing employees' knowledge; **knowledge engineers**, who develop the means to carry out the direction the processes should take; **knowledge management specialists**, who are responsible for knowledge transfer; **information content specialists**, who provide information services (content); and **specialists in the use of intelligent tools**, who are information technology specialists.

Given the amount of information that floods our devices on a daily basis, essentially over the internet, it is crucial to distinguish what is relevant and true for the organization, making it urgent for these information managers to effectively play their role in organizations in order to prevent the loss of information, underutilization of the existing knowledge and the dissemination of disinformation that ultimately may lead to complete loss of competitive intelligence and advantage over the competition.

Information, decontextualization, misinformation and disinformation in the digital era

Perceiving information as a more or less extensive set of data, properly processed and interpreted in the light of a given context, area of knowledge or situation, it will be easy to conclude that disinformation and misinformation consist precisely in the reverse of this process and that decontextualization alters part or all of the meaning previously attributed to that same data. In another sense, of a more qualitative nature, information can be understood as a human and social phenomenon, being intrinsically linked to the actions and human nature, as a living being that has emotions, feelings and an unavoidable need to communicate. The information, according to Malheiro da Silva (p. 24) [6]:

> It is, therefore, between knowledge and communication, against the background of upstream the psychosomatic totality of the human being (…) and downstream, furthermore, lies the human capacity for communication, since the

communication process cannot happen without the messages, the contents, in a word, the Information. (our translation)

As a phenomenon inherent to the human being and amenable to transmission, through communication and after internal processing by the transmitter so, therefore, imbued with subjectivity, the information's contextualization consequently plays a major role in its classification and sharing, or that is, it is always necessary to take into consideration the context in which the information is produced, distributed, transmitted and received, so its meaning can be preserved, otherwise it may become decontextualized or altered.

What distinguishes disinformation from misinformation is the very intention in the production of data, message, and context that is whether the error and the possibility of others' deceit is purposeful, intended and disseminated for economic advantage or to deliberately mislead and therefore we are facing a "fabrication" of disinformation [3]. Or, on the other hand, if there was no purpose to deceive but rather a misinterpretation, intrinsic to the receivers themselves, or the search occurred in untrustworthy sources of information and then shared the unverified data, incomplete or inconsistent with the course of events, in this case we are facing misinformation [7].

The ease of information dissemination and disinformation/ misinformation nowadays

In this society we live in, surrounded by information overload on the Internet and other media, our interactions are mostly mediated by technology. We are increasingly seeing a departure from the physical world and the strengthening of the virtual world [8]. We have our smartphones and tablets with us all the time, at our disposal every minute, the willingness for information acquisition and rapid sharing, decontextualized and without careful attention to the sources and the way in which information is disseminated, makes us vulnerable and conducive to the acquisition and sharing of misinformation, disinformation and fake news.

We consume too much information every minute in our daily routine, whether it is in our personal lives, at work or in the classroom, while we are traveling or doing various tasks simultaneously. With these constant floods of information, we are often unable to confirm all sources and facts, we do not know the context, due to lack of time, or even due to technologies and digital illiteracy. "Technology symbolizes a type of evolution, but it does not necessarily make the man more ethical and wiser, nor is it synonymous with the proper use of information" (p. 3, our translation) [8].

However, at the same time, we are also producers of information, or contents, using social networks as vehicles for the information we want to share. Dissemination of information and misinformation have never been easier than it is today.

Factors that most contribute to disinformation/ misinformation in organizations

At the professional level, in organizations, the situation is practically the same, that is, despite the institutionalized policies and practices of searching, processing and archiving information and cyber security, desirably existing in each organization, access to information and its spread is as easy as in the private life domain.

Much of the search for information is carried out in the professional field, since it aims to fill one or more gaps in knowledge with the aim of achieving better performance on professional activities. In addition, there is also the growing phenomenon of working from home, with authorised access to the organizations' databases and computer systems

that technology provides us with.

If it is true that the successive advances in technology have been providing comfort, greater life expectancy, ease of contact with remote places, faster learning and the execution of various tasks by the machines, resulting in greater productivity, it is also a reality that we are obliged to ubiquity and connectivity almost 24 hours a day.

The fast pace that we impose on ourselves, or that organizations impose on us, has its price in terms of health and the quality of our work. We work in our workplaces and at home, but we also take leisure to our workplaces with our mobile devices and our social networks. There is no longer a clear boundary between the personal and family environment and the work/professional sphere.

This entails risks for individuals and organizations, since, by opening doors and various accesses to employees, such as databases, emails, and information that should not be accessed from outside the organizations, through the Internet or stored on the cloud and on employees' devices, information can be accessed easily and illegally by anyone else. This way it's possible to ignore protection barriers, such as firewalls against cyber-attacks, exposing the information to possible manipulation, which may range from the decontextualization, alteration and violation of personal data that may exist in organization's databases to just the discrediting of an organization [2].

If not addressed or tackled in a timely manner, these weaknesses will lead to misinformation to the organization's employees, decisions made based on errors and mistakes that could prove fatal. It is up to information managers to counteract this global trend by taking measures in terms of information protection, care in its search, archive, internal and external dissemination of information and training of their human resources, so that disinformation and misinformation can be stopped or minimized.

How to minimize the effects of disinformation/ misinformation in organizations

The players in strategic information management are professionals who must have sufficiently advanced and up-to-date information and digital skills. They are the ones who implement, manage and take preventive, maintenance and corrective measures on organizations' information systems. Information architecture, the computational systems that will compose and operationalize it and security are the first factors to consider.

In parallel, it is not possible to think about these components of information systems without including their users - the employees of the organization - for whom the information systems are designed and who should be an integral part of their design and development, because they are the ones who will use them and, therefore, they will have to know sufficiently, know how to use and know the information flows underlying them and their stakeholders.

Assuming that the factors described above were considered and the security measures were ensured, maintained and periodically renewed, the daily focus of the information managers should then be on the organization's employees and the use they make of the systems and information.

From the search for information to the performance of their activities, the organizations' employees must follow established practices, so as not to put at risk the reliability of the information they acquire nor the organization's security or operations.

The Internet, as we know, is today one of the main sources of information, if not the main one, and there are essential precautions to consider in the search for information, in this case, essentially the websites where the information's search occurs. When we begin a search for information the results are infinite. It is difficult to distinguish between thousands of websites. How can we choose the correct, the up-to-date and the reliable information?

There are several indicators on a website that allow us to understand if it is reliable, credible and up-to-date. These quality criteria have been identified and listed over the years by many information specialists. Among them we can find some features that stand out immediately when visiting a website, such as: the indication of the website's ownership, visible contacts and location in case of need, the factual information they expose, its depth and authorship, sources from which the information comes, degree of content updates, information objectivity and writing without errors [9].

On the contrary, websites that convey disinformation or incomplete, subjective and biased information are often outdated, do not present the sources of information, their authors or even their ownership and their contacts.

So, among the various criteria for assessing the reliability of a website, the ones that stand out the most and are therefore easier to detect are: authorship, authority, accuracy, objectivity, actuality and depth of information. If these characteristics are not present in an information source, it is ideal to look for other sources of information to ensure the truthfulness, reliability, objectivity and integrity of the information. Thus, in order for employees of organizations, and indeed the whole of society, including young people, who have been using computers and smartphones from an early age, can use technologies to search and find reliable information and, consequently, on behalf of their personal lives and the organizations it is essential to foster and develop informational and media literacy in society.

Information skills and media literacy: How can they contribute to fighting misinformation in organizations?

More and more people, and mostly young people, are turning to social networks as a source of information, which entails risks of sharing and belief in misinformation, subjectivity and the spread of fake news at an overwhelming pace, initiating and strengthening real global campaigns of disinformation and misinformation [3].

While in some cases this creation and sharing of misinformation is clearly deliberate, in others, the sharing of misinformation occurs through the simple desire to share information that is considered true or relevant, without prior verification. Thus, in order to combat disinformation, in a world where we have the capacity to disseminate messages at a distance of a few "clicks", it is essential to have the capacity to know how to use technologies, distinguish information from disinformation and misinformation and to develop critical thinking.

The informational skills required for the use of technologies and the knowledge and understanding of how they work for a dignified, inclusive and participatory life in society today are already taught from the beginning of school age, or even earlier. However, it is important to foster lifelong learning in schools and in all other organizations as information and communication technologies and social trends change at a very fast pace.

Media literacy then emerges as a way to combat misinformation by educating people to critical thinking about everything they read and see in the media, whether it be news, advertising or publicity. The algorithms of social networks and search engines on the Internet were designed to highlight what is convenient for their users and their interests, thus critical thinking, raising questions and scepticism about what is seen, read and heard is indispensable to the exposure of what is hidden and disguised by subliminal messages.

Briefly, media literacy education requires, as one of its principles, the active and critical questioning of information, i.e., "active inquiry and critical thinking about the messages we receive and create" (p. 7) [10]. Media literacy not only contributes to

information-minded, information-demanding professionals, sceptical about the information they find and demanding about the sources of information, but also develops information's verification and confirmation attitudes and, thus, promotes an informed society of citizens less susceptible to misinformation and fake news [11].

Conclusion

In the globalized world in which we live, where information and communication technologies allow us to obtain information at every moment and to be not only receptors but also creators of information, both professionally and personally, with the mass use of social networks, it becomes imperative for information managers, in the performance of their duties, to protect organizations and their employees in order to obtain reliable information, fighting disinformation and misinformation and providing conditions for the performance of organizations' professionals, in this digital era, to be improved and more productive.

Promoting and encouraging information and media literacy and firmly investing on the continuous training of employees over the years, it will be possible to minimize the effect of disinformation in organizations, not least because, while it is true that information skills and media literacy are not capable, by themselves, of changing the values of individuals and, therefore, preventing the existence of misinformation, they are at least "weapons" that can stop its dissemination.

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