Information Infrastructures as a Pillar of Strategic Intelligence: An Interpretive Study in a Large Algerian Industrial Company

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Abstract:
Strategic intelligence has become an essential lever enabling firms to anticipate environmental changes and enhance their competitiveness. However, its effectiveness depends not only on firms' internal organizational capabilities but also on the quality of the information environment in which they operate.

This article examines the role of national information infrastructures in the integration of strategic intelligence in Algerian firms. The findings reveal that strategic intelligence practices remain informal and weakly structured due not only to internal organizational factors but also to an underdeveloped national information environment.

Keywords: strategic intelligence, environmental scanning, information infrastructures, territorial intelligence, strategic decision-making.
Jel Classification Codes: D83, L86, M15

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1. INTRODUCTION

The development of information and communication technologies and the intensification of competition have strengthened the strategic role of information, making strategic intelligence a key process for supporting decision-making and organizational competitiveness.

In the Algerian context, although several studies highlight that companies increasingly recognize the importance of strategic intelligence, its integration remains limited (Bouchicha & Bouyahiaoui, 2011; Bendiabellah & Djennas, 2015; Belhocine, 2015; Taguelmint & Boukrif, 2015; Redjdal & Chitti, 2022). However, these studies have primarily focused on internal organizational factors to explain its informal nature and limited integration. In contrast, external constraints remain relatively underexplored, particularly those related to the characteristics of the information environment and its influence on strategic intelligence practices.

Against this backdrop, the present study aims to ***examine how national information infrastructures influence firms' access to the strategic information required for strategic intelligence activities.***

To address this research problem, the study adopts an interpretive approach based on a semi-structured interview conducted in a large Algerian industrial company.

2. Foundations of Strategic Intelligence and the Central Role of Information Collection in its Process

2.1 Definition and strategic implications

Based on a review of several definitions, strategic intelligence can be understood as a continuous organizational process (Pateyron, 1998, p. 13; AFNOR, 1998, p. 6 ; Laethem, 2005, p. 130) that is both ethical and legal (Drevon, Dufour, & Maurel, 2018, p. 28), through which firms collect, analyze, and disseminate information related to their environment in order to support strategic thinking and inform decision-making.

It is primarily oriented toward the identification of ongoing or emerging changes in the firm's external environment (Thiétart, 1990, p. 98; Dumas, 1994, p. 72), but it may also adopt a forward-looking approach aimed at identifying potential future changes (Thiétart, 1990, p. 98; Lesca H., 1994, p. 32; Dollé, 1994, p. 25. Laethem, 2005, p. 130). In both cases, it contributes to reducing risk and uncertainty by identifying opportunities and threats that may influence the firm's development (Lesca H., 1994, p. 32).

2.2 Modes of Monitoring: Focused Monitoring vs. Radar Monitoring

In its classical form, strategic intelligence serves an informative function aimed at providing decision-makers with useful information to better understand the environment and support the company's strategic adaptation (Lesca, 1994, p. 37; Bernhardt, 2003, p. 28; Cavallo, Ghezzi, & Sanasi, 2020, p. 8). This form can be described as focused insofar as it is based on the targeted monitoring of domains or elements considered strategic by the company (Martinet & Marti, 2001, p. 29).

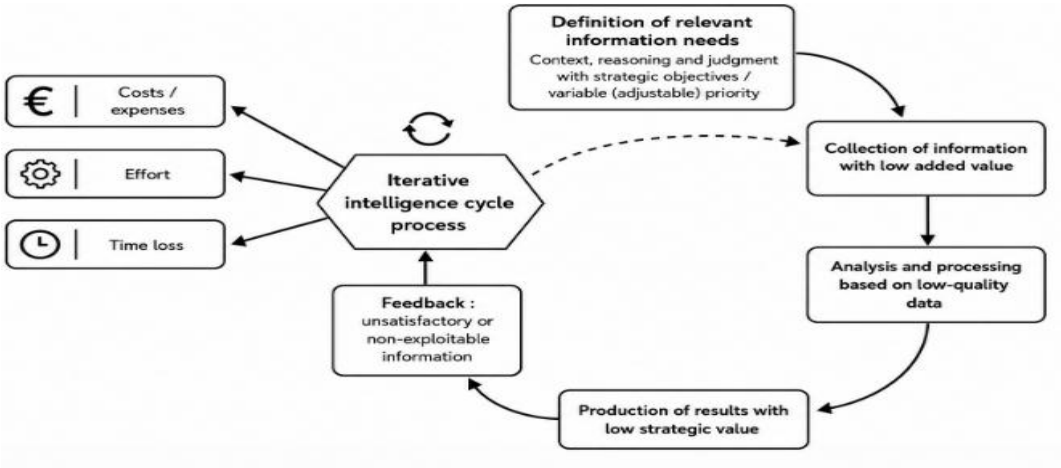
From a more proactive perspective, strategic intelligence may also aim to identify weak signals or anticipatory information in order to detect potential opportunities and threats (Ansoff, 1975; Lesca, 1994; Dollé, 1994). This form functions as an organizational radar (Xu, 2007; Lesca & Lesca, 2011; Mesguich, 2018), characterized by a more open exploration process, an evolving scope of monitoring, and the use of more diverse and often informal information sources.

2.3. The Strategic Intelligence Process and the Central Role of Information Gathering

The strategic intelligence models proposed in the literature (Gilad & Gilad, 1988; Lesca, 1994; Martinet & Marti, 2001; Choo, 2002; Bernhardt, 2003), largely inspired by the military intelligence cycle, generally rely on four main stages: identifying information needs, collecting data, analyzing and processing information, and disseminating strategic intelligence to decision-makers.

Among these stages, data collection plays a central role, as the relevance and reliability of the information gathered affect both the effectiveness of subsequent stages in the process and the usefulness of the intelligence produced for strategic decision-making. (see Fig. 1).

Fig. 1. Impact of irrelevant information gathering on the effectiveness of the strategic intelligence process



Source : Authors' own elaboration.

From this perspective, information gathering constitutes the pivotal point of the strategic intelligence process, which leads us to question, on the one hand, the conditions and constraints that govern its implementation and define its scope of action and, on the other hand, the factors that may facilitate its implementation and enhance its effectiveness.

3. Access to Strategic Information: Between Constraints and the Enabling Role of the State

3.1 Typology of Strategic Information and the Legal and Ethical Boundaries of Information Collection Practices

In the context of strategic intelligence practices, access to information cannot be unlimited. Information collection takes place within a space defined by legal and ethical considerations that define the boundaries between authorized and prohibited practices. In this context, the literature traditionally distinguishes three types of information : white information**,** grey information, and black information**.**

White information refers to data that is legally accessible, either openly available or obtained through restricted sources whose access is authorized under certain conditions, such as paid databases or subscription-based publications. It is predominantly formal in nature, produced and disseminated by identified and often impersonal sources (Hall, Pilbeam, & Corbridge, 2012, p. 25), and documented on physical or digital media (Martinet & Marti, 2001, p. 29). Its formalization is notably based on the existence of validation procedures prior to publication (Dou, Juillet, & Clerc, 2018, p. 81).

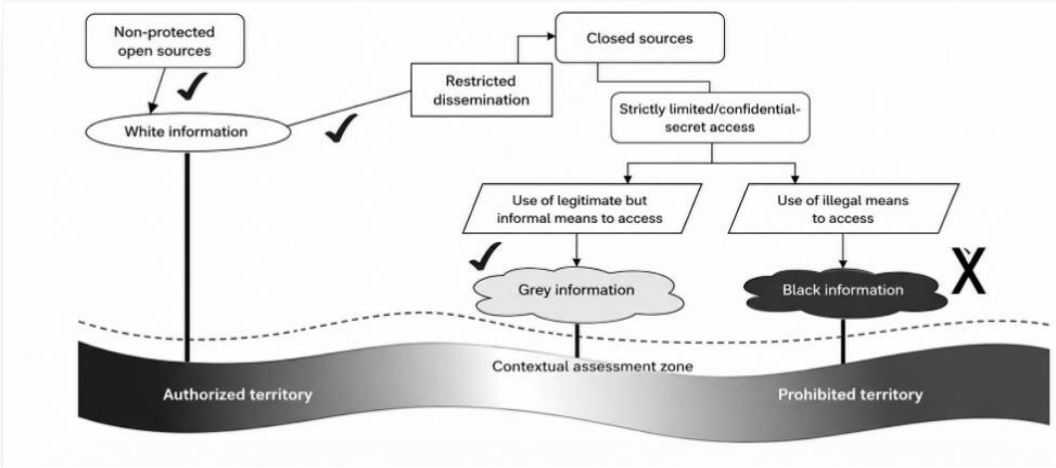
Grey information mainly derives from restricted sources, but its acquisition relies on informal yet lawful practices, although these may sometimes raise ethical questions. It is informal in nature, characterized by weak structuring and a frequent lack of documentation. It circulates primarily through relational networks (Martinet & Marti, 2001, p. 35) or direct interactions with the environment, such as participation in trade fairs, conferences, international assignments, or sector-specific meetings. In the digital age, it may also originate from social media platforms, specialized blogs, and professional forums (Alloing, 2012). Although it may reveal weak signals or novel information, its exploitation requires significant effort to assess its reliability (Rougé, 2005, p. 3). Nevertheless, despite these constraints, several authors emphasize that informal sources, which generate grey information, constitute an essential component of strategic information and can be considered primary sources in terms of strategic value (Gilad & Herring, 1996, p. 66).

Finally, black information refers to data obtained through illegal or unethical means, such as industrial espionage, intrusion into protected systems, and the fraudulent appropriation of confidential documents. This type of information lies outside the legal and ethical framework of strategic intelligence, and its use exposes firms to significant risks, both legally and in terms of reputation.

This typology makes it possible to distinguish an informational territory structured into three sets (Lebrument, 2012, p. 92): an authorized territory corresponding to white information, a prohibited territory associated with black information, and an intermediate space corresponding to grey information, whose ethical boundaries often remain contextual

and less clearly defined. In order to synthesize these different levels of information, their associated sources, as well as the legal and ethical boundaries that frame them, a schematic representation is presented below.

Fig. 2. Typology of strategic information and delimitation of the legal and ethical boundaries of information collection practices



Source : Authors' own elaboration

White information, located within the authorized territory, constitutes the dominant component of the informational volume exploitable by the firm within the framework of strategic intelligence. Some authors (Bulinge, 2002, p. 183; Bloch, 1999, p. 52; Malaval & Bénaroya, 2013, p. 144) estimate that it represents approximately 70 to 90% of the information required for this activity. It may be produced and disseminated by public institutions or private actors. The effectiveness of strategic intelligence therefore depends on the availability, richness, and complementarity of these sources. When institutional systems for data production and dissemination (both public and private) are limited in this regard, firms' ability to access reliable and structured data may be constrained, which leads them to rely more heavily on informal channels of information. This may affect not only the reliability and structuring of the strategic intelligence, but also its continuity, due to the more irregular and opportunistic nature of these informal sources.

3.2. The Role of the State in Facilitating Access to Strategic Information

At the global level, the collection and exploitation of strategic information by firms are governed by legal and regulatory frameworks aimed at protecting sensitive data and ensuring compliance with competition rules. However, while these mechanisms govern data collection practices by clearly defining the boundaries between what is permitted and what is not, they may also restrict firms' direct access to certain strategic information. In this context, the State is not limited to a regulatory role; it also acts as a facilitator by establishing institutional mechanisms aimed at promoting legal, structured, and reliable access to strategic information. These mechanisms mainly take the form of information infrastructures, territorial intelligence policies, and cooperation networks between economic and institutional actors (Delbecque & Fayol, 2012, pp. 185-198).

3.2.1. National Informational Infrastructures

Environmental scanning systems primarily rely on a national information

infrastructure, made up of a set of information production and dissemination systems that enable firms to access data across various fields in a legal and structured manner. These infrastructures may fall under different institutional spheres: they may be public, private, or other entities with mixed or specific legal status. They are generally based on several complementary categories of information sources. In order to provide a structured reading of these different components, we have attempted to group them into analytical categories, presented in the table below.

Table 1. Main Categories of National Information Infrastructures and Their Role in Strategic Intelligence

Category	Description	Role in strategic intelligence	Exampls
National business registers and directories	Databases listing legally registered companies in a country, providing basic identification data such as legal status, economic activity, location, managers, and sometimes financial or legal information depending on the source.	Fundamental sources of competitive intelligence enabling the identification and mapping of market competitors.	SIRENE, Infogreffe (France); Companies House (United Kingdom); Handelsregister (Germany).
National economic statistics systems	Systems producing and disseminating official statistical data on the economy and industry sectors.	Monitoring economic and sectoral trends, supporting strategic analysis and decision-making.	INSEE (France); Office for National Statistics (United Kingdom); U.S. Census Bureau (United States).
Technological information systems and patent databases	Structured platforms gathering information related to innovation and industrial property.	Monitoring innovation trends and anticipating technological and competitive mutations.	Patent Public Search (USPTO, United States); Espacenet (European Patent Office).
Scientific information infrastructures and research networks	Institutional and organizational systems ensuring the collection, structuring, dissemination, and interconnection of scientific outputs, as well as networking among research actors.	Identification of scientific expertise, laboratories, research projects, and national innovation dynamics.	ScanR; INIST-CNRS; HAL (France).
Specialized economic and financial databases	Mostly private databases containing standardized financial and economic data on firms.	Financial analysis, risk assessment, and competitive benchmarking.	Altares (France); Bureau van Dijk; Dun & Bradstreet; Bloomberg (United States).
Legal and regulatory databases	Databases compiling and disseminating legal and regulatory texts governing economic activities.	Monitoring regulatory developments and ensuring legal compliance.	Légifrance (France); EUR-Lex (European Union).

Source: Authors' own elaboration

All of these components form a structured informational foundation, whose diversity and complementarity determine organizations' ability to effectively collect, analyze, and exploit information within the framework of their strategic intelligence practices. However,

this categorization does not claim to be exhaustive; rather, it aims to group the main categories of information infrastructures that can be leveraged in intelligence activities. Other mechanisms may also be included depending on sectoral or national contexts, such as public procurement platforms, stock exchanges, and standards and technical databases.

Furthermore, access to various public sources is increasingly facilitated by the development of national open data portals, which serve as cross-cutting mechanisms for disseminating public data, thereby enhancing the accessibility and use of data required for strategic intelligence activities.

3.2.2. Territorial Intelligence Policies

Beyond national information infrastructures, public authorities implement territorial intelligence policies aimed at structuring strategic information exchange at the territorial level. These policies rely on institutional frameworks that organize cooperation among key actors, including firms, universities, research centers, public agencies, and professional organizations (Ferdj & Djeflat, 2023, p. 10). In this context, public authorities develop collective structures such as competitiveness clusters, which represent organized networks of territorial actors. They also provide stakeholders with the necessary tools, methods, and resources to support these initiatives (Pelissier, 2009, pp. 293–298). These mechanisms strengthen local interactions, facilitate strategic information flows, and enhance territorial cooperation, thereby fostering collective innovation and improving territorial competitiveness.

This process follows a top-down logic of territorial intelligence, as it extends national economic intelligence policies to the local level (Pelissier, 2009, p. 293). The State plays a central role in designing and implementing these mechanisms, while local actors mainly engage through participation and appropriation.

In contrast, a bottom-up approach emerges directly from local actors who develop their own cooperation and strategic information systems (Pelissier, 2009, p. 298). In this case, the State acts primarily as a facilitator, ensuring coordination and coherence of local initiatives.

3.2.3. Operational Networks and Local Partnerships

Territorial intelligence policies often give rise to operational networks and local partnerships that bring together various public and private actors within a framework of structured cooperation (Pelissier, 2009, p. 297). These mechanisms promote exchanges between stakeholders and facilitate access to strategic information, particularly tacit or grey information (Ferdj & Djeflat, 2023, p. 7), whose value significantly contributes to the effectiveness of strategic intelligence activities. These interactions thus complement national information infrastructures and territorial intelligence policies by adding a collaborative dimension that is essential to their overall effectiveness.

Taken together, these mechanisms form a national informational ecosystem enabling firms to legally access reliable and relevant strategic information, enhance their competitiveness, and operate in compliance with competition rules. Territorial intelligence policies and networks of actors contribute to the coordination of economic stakeholders as well as to the circulation of informal information, while information infrastructures constitute the fundamental foundation of strategic intelligence practices, insofar as they

provide the bulk of the information required for this activity. In this respect, their availability and development at the national level appear as an essential prerequisite for the development of strategic intelligence practices within firms and, more broadly, for strengthening economic competitiveness. At the organizational level, their awareness and effective use represent a major strategic asset for any firm operating in a dynamic and complex economic environment.

4. Empirical Analysis of the Role of National Information Infrastructures in Access to Strategic Information within an Algerian Industrial Company

4.1. Methodological Choices of the Research

The methodological positioning adopted in this research is grounded in an interpretivist approach. This choice is justified by the nature of the research objective, which seeks to understand how national information infrastructures concretely influence strategic intelligence practices within an Algerian industrial firm. More specifically, it involves analyzing how this factor is perceived and interpreted by organizational actors, as well as the effects it produces on the integration and effectiveness of the strategic intelligence system. From this perspective, interpretivism appears particularly suitable, insofar as it allows organizational reality to be apprehended through the meanings that actors assign to their practices and their environment (Gill & Johnson, 2002, p. 42). The use of a case study, based on a semi-structured interview with a senior manager, is consistent with this logic.

The choice of a large firm is based on an analytical rationale aimed at isolating the effect of national information infrastructures as an external constraint on the integration of an effective strategic intelligence, while excluding internal constraints widely documented in the literature, particularly those related to the limited availability of financial resources and human capabilities. Indeed, large firms in principle possess these resources, which suggests that the analysis can focus more on other explanatory factors underlying the limitations of strategic intelligence integration, particularly those related to the external informational environment.

Furthermore, the choice of an industrial company is justified by the informational intensity of its environment, which makes the analysis of monitoring practices particularly relevant due to the strong dependence on varied and up-to-date information to support firm’s competitiveness.

4.2. Presentation of the Company and the Sectoral Context

The case study is conducted within a large company operating in the construction materials sector in Algeria, whose identity has been anonymized at the request of the interviewee to ensure data confidentiality. Established in the late 1990s as small production units, it has progressively evolved into a large-scale industrial group, legally structured as several private limited liability companies (SARLs) operating under a common commercial name.

The construction materials sector plays a strategic role in the national economy, being directly linked to construction and infrastructure development, and remains strongly influenced by public policies related to housing and territorial planning (Belaribi, 2025, p.

3). It has also undergone significant transformations, characterized by the rise of private actors, industrial modernization, and, in certain segments, overcapacity situations that have intensified competition (CETIM, 2022). Moreover, it accounts for approximately 22% of large private industrial companies employing more than 250 workers, according to data from the Ministry of Industry.

This context makes the selected company a relevant case for analyzing the impact of national informational infrastructures on strategic intelligence practices, given its size, industrial positioning, and exposure to competitive dynamics and public policies.

4.3. Organization and Strategic Intelligence Practices within the Studied Company

The information presented in this section is based on a semi-structured interview conducted with the Head of Human Resources of the company. The interview was guided by a structured framework covering four main axes: the description of the company's strategic intelligence system; the analysis of its functioning and implementation across the different stages of the process; the identification of the difficulties and constraints encountered; and the examination of the influence of national information infrastructures on the company's access to information in the context of this activity.

4.3.1. Description of the Company's Strategic Intelligence System

The respondent states that although the company has sufficient financial means and qualified human resources to implement a formal intelligence system, with a dedicated unit or service, no formalized system has been established to date. He also specifies that, drawing on his experience in companies equipped with formal intelligence systems, he has recommended the implementation of a similar system, but no concrete action has yet been undertaken.

In practice, no actor is formally responsible for strategic intelligence activities, and no structured framework (manuals, procedures, or guidelines) governs this activity. No specific budget is allocated to it, and no external service is requested to ensure it. Planning is not carried out on a regular basis and does not rely on a formal definition of objectives, priorities, or timeframes.

Nevertheless, an implicit intelligence scope does exist, adjusted according to market developments, public policies, and competition. The elements to be monitored are identified, although they are neither formally defined nor documented.

4.3.2. Functioning of the Strategic Intelligence Process

The respondent indicates that the functioning of strategic intelligence within the company relies primarily on the involvement of the owner-manager, who ensures the bulk of the activities of collecting, processing and using information.

He specifies that information gathering is primarily triggered by specific decision-making needs, relying mainly on informal sources such as professional networks and personal contacts. However, the nature of sources varies depending on the type of environmental scanning. Thus, in the case of regulatory monitoring, the manager favors formal sources, such as official journals and institutional publications, which provide access to official texts and normative documents, in order to ensure the reliability of the information.

Information processing is mainly carried out individually by the manager. In addition, no structured dissemination mechanism has been put in place, and intelligence outputs remain largely centralized.

Despite this informal and centralized structure, intelligence plays a significant role in decision-making by directly informing strategic choices.

Finally, he adds that regulatory monitoring is the most frequently practiced form of environmental scanning, with close to daily monitoring of regulatory developments.

4.3.3. Identification of the Difficulties and Constraints Encountered

The interviewed manager emphasizes that the main internal constraint to conducting more active and effective strategic intelligence is related to organizational culture. As previously highlighted, the owner-manager centralizes most of the strategic intelligence activities and communicates very little about his information needs as well as the strategic information that informs his decision-making. Information sharing is described as risky or counterproductive, which limits the development of sharing networks and the circulation of information.

He also indicates that he conducts certain monitoring activities out of passion, in a completely autonomous manner, but that the results of this work are, for the most part, not requested in the internal decision-making process. He specifies that the manager generally does not use internally held information before making strategic decisions, either because of a limited perception of the value of an internal information-sharing network, or because of a desire to preserve the confidentiality of information with strategic relevance and, consequently, of his decision-making intentions.

He further adds that the manager, being solely responsible for information collection, sometimes faces information overload, particularly when relying on formal sources. This situation is exacerbated by the lack of dedicated IT tools for intelligence activities, as well as the manager’s limited technical and methodological skills. These constraints reduce the effectiveness of the information collection phase, especially as access to reliable, structured, and high-value sources remains limited. The respondent emphasizes that these difficulties lead to a reliance on informal sources, which are considered more accessible but are often more fragmented or less structured.

Regarding the information processing phase, he primarily mentions two major constraints. The first stems from the highly centralized nature of the decision-making process, insofar as the manager is responsible for the analysis, interpretation, and use of information gathered for decision-making purposes. According to him, this centralization has repeatedly led to inappropriate decisions with significant consequences for the company. He considers that some of these situations could have been avoided through more thorough collective information processing. In this respect, he emphasizes the importance of collective intelligence in the monitoring and decision-making process, considering that the analytical capabilities of a group are broader and more relevant than those of an individual isolated from that group. The second constraint concerns the tight deadlines imposed by certain decision-making situations, which limit the time available for analyzing and

interpreting strategic information. According to the respondent, this time pressure reinforces the limitations related to individual information processing, insofar as the lack of collective reflection and confrontation of viewpoints reduces the depth of the analyses carried out and increases the risk of insufficiently considered decisions.

Finally, he adds that the dissemination of monitoring results remains very limited; employees essentially receive the decisions made by the manager, without access to the information or analyses that led to them.

4.3.4. Impact of National Information Infrastructures on the Integration of Strategic Intelligence

Following the identification of internal constraints, the respondent emphasized that the difficulties encountered stemmed not only from organizational factors but also from a national information environment deemed unfavorable.

He explained that strategic intelligence develops gradually, beginning with the use of formal and reliable sources providing access to structured, validated, and relatively accessible information, before evolving towards more advanced forms of monitoring that utilize more diverse and informal sources, such as professional networks, trade shows, or customer feedback, in order to capture emerging, less visible, and loosely structured information.

From this perspective, the respondent specifies that the initial forms of intelligence monitoring rely primarily on the availability and quality of formal sources, enabling targeted, regular, and verifiable information gathering. He emphasizes, however, that certain tools frequently mentioned in the literature, such as email alerts and newsletters, can generate information overload and prove difficult to use effectively without appropriate sorting and structuring mechanisms. Consequently, companies generally favor established sources, such as economic and financial, regulatory, technological, and patent databases.

In this context, he stresses that the effectiveness of a strategic intelligence approach depends, upstream, on the availability and quality of national information infrastructures, which he considers a prerequisite for implementing formalized and integrated strategic intelligence practices. According to him, when these infrastructures have shortcomings due to limited availability or deficiencies in the structuring, richness, or updating of content, companies do not give up all monitoring activity, but move, by necessity, towards more informal, less regular, and loosely structured practices, which tends to limit their effectiveness.

Building on these observations, the respondent specifies that, in the Algerian context, the shift of firms towards more informal strategic intelligence practices is largely explained by the limitations of national information infrastructures. Indeed, although some of these infrastructures exist, they remain insufficiently developed to effectively support formalized strategic intelligence processes. According to him, the available data suffers from several limitations, particularly in terms of accuracy, sectoral granularity, frequency of updates, and regularity, while access to certain information remains limited, thereby reducing its effective use by firms.

In this context, he points out several structural shortcomings. Private business

directories have limitations in terms of coverage, updates, and level of detail. As for the main public database available in this regard, namely the CNRC (Sidjilcom), access remains restricted and conditional; and even when possible, the available data often lacks sufficient detail for in-depth competitive analysis.

Similarly, he points out that the data produced by statistical institutions, particularly the National Statistics Office (ONS), are generally aggregated and adopt a macroeconomic perspective, which limits their use for more detailed analyses of competitive dynamics. He emphasizes, in particular, the insufficient granularity of the available data, which, according to him, prevents a precise understanding of these dynamics, whether at the sectoral level or at the level of individual firms or categories of firms. He adds that even some macroeconomic data series, such as censuses, are not updated regularly, which further limits their usability for strategic intelligence purposes.

Regarding industrial property, he highlights the limited informational richness of the data made available by the National Institute of Industrial Property (INAPI), particularly concerning patents, whose volume remains relatively limited compared to international standards. This situation forces companies to use international databases, characterized by a larger volume, continuous updating, and more detailed patent information, but also by higher access costs.

In this respect, the respondent nuances this by pointing out that, while companies can indeed use international sources, particularly to access technological and economic data, as well as company databases and global standards, these sources do not cover the specificities of the national context. National information infrastructures play a crucial role in this regard, providing contextualized information on sectoral dynamics, local actors, and domestic market conditions.

5. Discussion and Interpretation of the Results

First, it is necessary to situate the findings related to the organization of strategic intelligence within the studied company in relation to existing literature.

The results reveal an informal and weakly structured strategic intelligence system, which contrasts with the existing literature on Algerian SMEs (Bouchicha & Bouyahiaoui, 2011; Bendiabellah & Djennas, 2015; Belhocine, 2015; Taguelmint & Boukrif, 2015; Redjdal & Chitti, 2022), which often associates the lack of formalized strategic intelligence practices to resource constraints. According to the respondent, the studied company possesses organizational, human, and financial conditions that are theoretically favorable to the implementation of a formal, structured, and regular strategic intelligence system, thereby leading to questions about approaches that primarily explain the formalization of strategic intelligence through resource availability.

At the organizational level, the findings points out the limiting effect of the strong centralization of strategic intelligence activities, which restricts information sharing and the involvement of other organizational actors. These results are consistent with studies showing that the concentration of strategic intelligence functions at the top of the hierarchy hinders employee initiative, timely information management, and the formalization and

overall effectiveness of the strategic intelligence system (Dumas, 1994, p. 41; Ludovic & Levy, 2003, p. 22).

Beyond its organizational dimension, this centralization reflects a culture of information retention, contrasting with the literature that emphasizes systematic information sharing among organizational actors as a means to promote internal networks, knowledge circulation, and the effectiveness of strategic intelligence practices (Bloch, 1999; Guechtouli & Boudrandi, 2012; Lesca N., 2013; Dou, Juillet & Clerc, 2018; Chamoni & Kaufmann, 2014).

In this context, an initial reading might lead one to interpret this situation as a lack of awareness regarding the importance of strategic intelligence and its collective methods. However, the results suggest a more nuanced interpretation. The manager appears highly involved in monitoring activities, indicating a clear recognition of its importance. It also appears difficult to conceive, in light of usual organizational information management practices, that internally held informal or tacit information would not be perceived by the manager as potentially useful within a strategic intelligence approach. The persistence of informal and centralized practices seems rather to reflect a perception that the risks associated with information sharing outweigh its potential benefits.

From this perspective, the culture of information hoarding, while constituting an organizational and cultural factor limiting the formalization and effectiveness of strategic intelligence practices, appears more as the result of a trade-off between perceived benefits and risks, rather than a simple lack of awareness regarding the formalization of strategic intelligence and collaborative information sharing. Thus, this finding is not consistent with studies that tend to explain the informal nature of strategic intelligence primarily by a lack of awareness.

Moreover, the findings of this case study provide a renewed perspective on the conditions affecting the integration of strategic intelligence within firms. They suggest that the constraints affecting strategic intelligence practices are not solely internal, but also closely linked to the quality of the informational environment. The interview reveals that even a stronger culture of information sharing would not, by itself, be sufficient to ensure the implementation of a formalized and effective strategic intelligence system when access to reliable and structured information sources remains limited.

However, this assessment should be qualified, as the respondent demonstrated only partial knowledge of the available national information infrastructures, referring mainly to general sources such as the CNRC, the Official Journal, ONS, and INAPI. By contrast, no specialized scientific, economic, or financial information infrastructures were mentioned, even when he was asked to identify the platforms or databases known or used within the company in these fields. Nonetheless, a basic comparative analysis still highlights certain structural limitations of national information infrastructures when compared with international reference examples (see Table below).

Table 2. Main Information Infrastructures in Algeria and Comparative Limitations

Category	Information infrastructures	Comparative limitations
National Business Directories	National Trade Register Centre (CNRC) / SIDJILCOM	Limited and non-ergonomic interface, with restricted access to certain data that appears to require additional administrative procedures.
	Online private Business directories (e.g., El Mouchir, Adresse-Algérie, DZ-Annuaire, Pages Jaunes Algérie, PagesMaghreb)	Incomplete coverage, irregular updates, and lack of data standardization.
National economic statistics systems	National Office of Statistics (ONS)	Low data granularity, limited possibilities for statistical cross-analysis, weak inter-institutional data integration, and less developed continuity and harmonization of statistical series.
Technological and Patent Databases	National Institute of Industrial Property (INAPI)	Limited data coverage and scope, reduced analytical exploitation of patent databases, weak international integration, and less advanced search functionalities.
Scientific information infrastructures and research networks	Scientific and Technical Information Research Center (CERIST) ; University portals (theses, Algerian journals and revues) ; National Agency for the Valorisation of Research Results and Technological Development (ANVREDET)	Limited integration between platforms, weak linkage between researchers, laboratories, projects and publications, restricted volume and diversity of accessible scientific content, a limited international visibility of scientific output, and weak visibility of collaboration networks and university–industry partnerships.
Specialized Economic and Financial Databases	Bank of Algeria statistical databases and publications ; Financial data and reports of the Securities Commission (COSOB)	Strong reliance on static institutional reports, absence of structured private databases comparable to major international platforms, difficulty accessing standardized and comparable financial data suitable for competitive analysis and benchmarking.
Legal and Regulatory Databases	Official Journal of the People's Democratic Republic of Algeria (JORADP) ; Regulatory portal of the General Secretariat of the Government (SGG) ; Sectoral public portals (DGI, AAPI, ANPP, etc.)	Fragmentation of sources, with relatively limited search, classification, and document retrieval functionalities.

Source : Authors' own elaboration

The critical point emerging from this analysis lies not so much in the insufficient availability of national information infrastructure as in its fragmentation, weak interconnectivity, and the quality and usability of the data provided. Most of this infrastructure has existed for several years, and in a context marked by the spread and maturation of information and communication technologies (ICT), its limitations cannot be attributed to its recent development nor to a weak development of ICT.

Moreover, this constrained informational environment may indirectly reinforce internal patterns of information centralization and retention within firms. In this sense, difficulties in establishing a culture of information sharing cannot be understood independently of the surrounding national context, as organizational practices tend to reflect the characteristics of their institutional environment. This dynamic can be interpreted

through the lens of institutional isomorphism (DiMaggio & Powell, 1983), according to which organizational practices tend to align with the dominant logics of their environment, particularly in its mimetic and normative dimensions.

Finally, the findings highlight a two-level strategic intelligence integration. The first level, focused monitoring, relies on structured and reliable formal sources and depends on the degree of development of the firm's informational environment. Only once this level is stabilized can firms move toward a more advanced scanning-oriented intelligence focused on weak signals and anticipation. In contexts where the informational environment is underdeveloped, firms struggle to stabilize the first foundational level of monitoring, which in turn limits the development of more advanced strategic intelligence practices. Comparable to Maslow's hierarchy of needs (1943), this hierarchical logic reflects a cumulative process in which the development of more advanced forms of strategic intelligence depends on the prior stabilization of foundational monitoring practices. This distinction, which to our knowledge is rarely made explicit in the strategic intelligence literature, provides additional insight into the progressive and cumulative nature of strategic intelligence integration.

6. CONCLUSION

This study aimed to examine the role of national information infrastructures in the integration of strategic intelligence practices in Algerian firms through an interpretive case study conducted in a large industrial company. The findings reveal that strategic intelligence practices remain largely informal and weakly structured despite the availability of organizational, human, and financial resources theoretically favorable to the implementation of a formalized strategic intelligence system. Beyond internal organizational constraints, the study underlines the significant influence of the national informational environment, particularly the limitations related to the structuring, accessibility, interconnectivity, and data usability of national information infrastructures.

The results of this research therefore invite a reconsideration of the conditions shaping the integration of strategic intelligence practices within firms. They suggest that the observed limitations may stem less from internal organizational dynamics than from the national informational environment, whose level of development and structuring appears decisive.

These findings therefore suggest that the development of strategic intelligence practices in the Algerian context is embedded within an institutional framework shaped by public authorities, which should primarily follow a structured top-down logic consisting first in strengthening and modernizing the national informational environment through better database structuring, greater system interconnection, improved accessibility and exploitation of information, before more broadly promoting territorial intelligence policies and strategic intelligence networks among firms.

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