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A project management approach to competitive intelligence

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OPINION ARTICLE

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ABSTRACT The research problem that this study seeks to solve is to examine the relationship between competitive intelligence (CI) and project management (PM). These disciplines coincide in their threefold approach to action, collection of results, and ability to react in response to environmental signs. However, the academic and professional literature has not explored the possible synergies between CI and PM, with the exception of the seminal proposals by Prescott in 1988 and 1999. The aim of this opinion article is to propose a new methodological approach for the production and transfer of CI in accordance with the international standards of PM. The methodology consists of an inductive reasoning process from specific observations and evidence gathered in our professional experience as CI practitioners over twenty years, contrasted with the findings of the scientific literature, the PMBOK® Guide of the Project Management Institute, and with the CI model proposed by the most relevant Spanish technical standards in R&D&I management and strategic intelligence management. The paper discusses the vision of intelligence production and dissemination in a project with five phases or groups of processes: initiation, planning, execution, monitoring and control, and closure. Also, the responsibilities of the human intelligence team are exposed. This proposal could be an alternative to the departmental-based intelligence cycle model more aligned with the organizational culture and the usual operational practices and business processes of companies, founded on the design and deployment of projects with a specific beginning and end that is carried out to create a product, service or unique result. It is concluded also that there is a need for undertaking experimental implementation and case studies of this proposal in companies and their assessment by future academic studies.

KEYWORDS Competitive intelligence, intelligence cycle, intelligence production, PMBOK, project management

1. INTRODUCTION

In a VUCA context (Volatility, Uncertainty, Complexity and Ambiguity of the current world) it is necessary to continually reconsider routines to survive. In the society of knowledge,

today's certainties always become tomorrow's absurdities (Drucker, 1995). Looking around over a time horizon confirms that the only permanent thing is change. Organizations with a flexible corporate culture in relation to transformation establish warning systems that

allow anticipation. Competitive intelligence and project management help by identifying, facing and managing situations of change and, therefore, maintaining leadership positions.

Competitive intelligence provides relevant information, evaluated and analysed, oriented to the making and execution of decisions (Global Intelligence Alliance, 2013 a). It especially stresses the prevention of risks and threats and the identification of opportunities, which makes it a useful tool for the design of the organizational strategy, the start-up of operations and the making of actions of influence in the exterior. The bibliographic reviews show a broad coincidence in literature specialized in the distinctive elements of their nature (Calof and Wright, 2008; García-Alsina and Ortoll-Espinet, 2012). However, Solberg (2016) found in a recent study that existing definitions of competitive intelligence overlap with definitions of other more established fields of study, like decision sciences and marketing. Competitive intelligence can be applied to the deployment of all managerial functions (planning, organization, human resources management and control) and in all functional areas of a company (García-Madurga and Esteban-Navarro, 2018). The generic term competitive intelligence includes several specialized intelligences of use in the company: strategic intelligence, environmental scanning, customer intelligence, competitor intelligence, marketing intelligence, technical intelligence and supplier and manufacturing intelligence.

Project management is a management model that arose in the United States in the mid-20th century to guide the execution of complex processes that require the mobilization of numerous resources (financial, human, material and informative) and the participation of several functional units in an organization. A project is a temporary effort with a specific beginning and end that is carried out to create a product, service or unique result (Project Management Institute, 2017). The projects are planned following deterministic models, such as the work breakdown structure (WBS), critical path method (CPM) and program evaluation and review techniques (PERT)- that set objectives and clear deliverables, and which give oversight as they are executed. This requires continuous monitoring and documentation that allows one to maintain a high control over what is done and its effects, in order to quickly correct the course and align the actions with

the decisions if necessary. It is crucial for the success of a project to have information about the activities and the evolution of the environment in all its phases. The PMBOK® Guide, Fundamentals for Project Management (2017, 6th ed.) of the Project Management Institute (PMI®, non-profit organization created in 1969 to defend the interests and serve professionals) is the reference document for a significant number of professionals around the world and it is considered the international standard.

The competitive intelligence and the project management disciplines coincide in their threefold approach to action, collection of results and ability to react in response to environmental signs. At a glance, and attending to its aims, intelligence reveals itself as a great help to manage projects. Considering that intelligence processes look for concrete results, they could be inspired by the methodology of this management model. On the other hand, organizing and carrying out activities as projects is a common practice in companies and also part of the skills of managers and middle managers, unlike in the case of intelligence.

However, none of the academic literature, professional literature or technical standards of both disciplines have ever explored the possible synergies between both disciplines; with the exception of the proposal by Prescott (1999) and Vedder et al. (1999), still undeveloped twenty years later, to consider intelligence as more of a process to be used by many in the execution of projects than an organizational function. Hence, it is considered relevant to enquire about new ways of incorporating intelligence into organizations to support the change and so strengthen their ability to adapt to a dynamic and constantly evolving environment.

The aim of this paper is to propose a new methodological approach for the production and transfer of competitive intelligence in accordance with the international standards of project management for its experimental implementation in companies and its assessment by future academic studies. This new approach can contribute to the expansion of the practice of competitive intelligence and, in the disciplinary field, to explore an improvement of the intelligence cycle more aligned with the way in which companies execute their business processes.

The methodology consists of an inductive reasoning process from specific observations

and evidence gathered in our professional experience as competitive intelligence practitioners over twenty years. This method of reasoning is founded on the assumption of various premises collected through informal participant observations. This includes what is learned from others, where there is not full assurance but where it provides a sufficient basis to develop arguments to compare in an inference process with the current theories and models. The method is founded on the emergent grounded theory approach that proposes “to develop a theory based on a participant’s experiences and perspectives of a phenomenon” (Corbin and Strauss, 2008). The researchers do not need “clearly specified objectives, research questions, or a hypothesis before the initiation of the research project” (Flynn and Korcusk, 2018).

We contrasted the developed arguments with the findings of the scientific literature, the PMBOK® Guide of the Project Management Institute, and the cyclical model of intelligence, as it is proposed by the most relevant Spanish technical standards in R&D&I management and strategic intelligence management (AENOR, 2011; AENOR, 2015; UNE, 2018). These Spanish standards have no ISO equivalents. The results are a discussion about the dynamics of the management of competitive intelligence projects and the responsibilities of the human team involved.

2. LITERATURE REVIEW

2.1 Identifying the problem

The practice of competitive intelligence can be present throughout an organization or restricted as support for one or several strategic processes. Companies can choose between different models of implementation: occasional or usual purchase of intelligence reports from specialized companies, creation of an intelligence department with their own means, total or partial outsourcing of their management, or they can even dedicate part of the day of some management to the production of intelligence after equipping them with competence.

Many organizations still lack some kind of stable competitive intelligence structure. The consultant CRAYON (2018) has detected that, from 700 interviews of experts and consumers of competitive intelligence from 54 countries, in 17% of the companies interviewed no employee performs intelligence and in 24% only part of the day is dedicated to it by a single employee.

It is also observed that, as the size of the company increases, so does the economic support given to competitive intelligence: 80% of the companies investigated with more than 1,000 employees have a specific intelligence team.

According to a global report by the Global Intelligence Alliance (2013b), 80% of the companies interviewed with an implemented competitive intelligence process show satisfaction with their return in spite of the benefits, which are usually not direct or immediate. A report by the Competitive Intelligence Foundation indicates that the main contributions of competitive intelligence are manifested in the creation of new products or services, reduction or elimination of costs, time savings, improvement of margins, increase or the creation of new sources of income and achievement of the company's financial objectives (Fehringer et al. 2016). A study of hundreds of companies from different industrial sectors that use competitive intelligence concludes that companies where the value of intangible assets has a higher *q Tobin* put more money in their budgets to intelligence, which is more valued by top management (Erickson and Rothberg, 2012).

The classic intelligence model presents the production of intelligence as a continuous and repetitive transformation process of information and knowledge articulated in a series of phases, which form a cycle. It begins with planning and direction, which includes the identification of intelligence requirements. The second phase consists of the collection and technical processing of information from documentation, via human and technological sources from different channels. It continues with the evaluation, integration, analysis and interpretation of the said information with a prospective orientation. It follows with the protection and communication of intelligence to predetermined users, generally with restricted diffusion. It concludes with an assessment of the whole process, taking into account the results of the application of intelligence, which can activate new intelligence needs and re-start the process.

There is a broad consensus regarding the basic configuration of the intelligence cycle (Figure 1), although the stated activities are grouped according to the authors in four, five, six or even seven stages (generally to separate the reception and the processing and whether or not to include the assessment report) and with certain variations in their denominations,



Figure 1 Universal model of the intelligence cycle (prepared by the authors).

which generates confusion. There is an exhaustive compilation of the visions of the intelligence cycle in Anglo-Saxon literature (Pellissier and Nenzhelele, 2013).

Although the intelligence cycle is considered the ‘heart of the intelligence system’ in an organization (Kahaner, 1998), this model has never been exempt from criticism coming from the perspective of its practical application. These deficiencies in the operations of the intelligence cycle have been outlined (Clark, 2004; Esteban-Navarro and Carvalho, 2012):

- It encourages no communication between those who obtain information and analysts.
- It arbitrarily assumes that analysts can control all variables on their own.
- It makes it difficult to know the real quality of data, as it masks potential problems during collection.
- It responds poorly to emergency situations where intelligence is required, even if it is provisional before having enough information.
- It does not establish channels to integrate the knowledge of a situation that the intelligence recipients have or the variations in their demands during the collection and analysis of information.
- It prevents managers and conductors from participating in the production of intelligence in a technological environment that enables easy and rapid access to information.

Therefore, it has even been proposed to view the cycle as a fundamentally theoretical model (McGonagle, 2016).

It has also been indicated that the cycle is not able to respond to the variety of needs of competitive intelligence: it works well for long-term strategy design tasks and technological surveillance, but is poorly adapted to the production of tactical intelligence on sales and marketing (McGonagle, 2007). In addition, this model is irrelevant facing a very common situation in the business world: a single person that has the role of both collector and analyst, and even that is the user of the intelligence. As a matter of fact, after the Cold War the intelligence cycle was considered dysfunctional and bureaucratic by those who systematized it, the US government intelligence services. This was due to the inherent problems it posed, such as the difficulty in dealing with uncertainty, identifying threats and emerging adversaries, working on unforeseen objectives, and facilitating communication between teams (Hulnick, 2006). Calof, Richards and Santilli (2017) have also concluded that the traditional model of competitive intelligence “appears to be inadequate to address the intelligence challenges arising from the speed of change in the environment, increasing data complexity, and the growth of international activities”.

2.2 Searching for an alternative

However, the intelligence cycle model continues to be presented not as a model but as *the model* of universal validity. To correct this divergence between theory and practice, competitive intelligence should evolve towards more flexible and networked work models, as happened with strategic planning. It is a matter of considering competitive intelligence more as a process to be used by many instead of a function attended by a few at the service of a few (McGonagle, 2007).

Another relevant issue related to the model is where the intelligence function should be placed in the organizations. Solberg (2010) showed that intelligence often comes from an initial marketing research function in the marketing department, and develops to a special and separate department, where the practitioners build a strong organizational culture. The special departmental model of intelligence causes communication problems with top managers, so an advisory model to place a senior advisor to the CEO as the person responsible for the first and the last functions in the intelligence model has also been proposed: formulating the needs and delivering the results. Solberg (2010) discussed the pros and cons of these and other placement models

of intelligence function implemented in companies from an organizational perspective: the professional model, the top-down model, the integrated intelligence model, the down-up model, and the departmental model.

Within this search for alternatives, Prescott (1999) already suggested, expanding on an idea outlined in Prescott and Smith (1988), to explore the possibilities offered by project management when they suggested approaching competitive intelligence with a project focus: 'Competitive intelligence must be managed as a core business process. Projects are the basic building blocks of an action-oriented competitive intelligence program. That is, making the intelligence production process operational is a project'. That same year Vedder et al. (1999) also proposed that companies could choose not to have specific intelligence units and perform ad hoc intelligence work when necessary, managing them as projects. However, twenty years later neither Prescott nor other authors have developed an operational model of the process of intelligence production understood as a project, more aligned with the professional skills and the usual work procedures of the intermediate staff in the departments with the highest demand and use of intelligence in companies (senior management, project management, R&D, marketing and operations).

Exploring new contributions to competitive intelligence from other disciplines, in this case engineering, is in accordance with the recent suggestions of Solberg (2016) about the scope for a new research agenda for intelligence studies in business. Solberg (2016) warned that the compartmentalization of competitive intelligence in the social sciences "has been to the disadvantage of its development as a discipline".

The application of project management techniques and tools to competitive intelligence has the following relevant implications for its practitioners: it helps to identify the diverse needs of stakeholders; it contributes to prioritize resources and ensure their efficient use; it allows practitioners to accurately budget in advance, as well as stay on schedule and keep costs and resources on budget; it improves communication between stakeholders; it reduces the risks of project failure; and, consequently, it increases the satisfaction of internal and external customers.

This aim is aligned with the suggestions of Calof, Richards and Santilli (2017) to break the

traditional model of an in-house competitive intelligence unit and to move towards "a cross-pollination approach whereby others in the firm contribute to all intelligence activities", mainly in the selection of key topics and participation in the analysis. In this way, Alnouraki and Hanano (2017) have exposed the impact of business intelligence on modern and flexible organizations when it is integrated into corporate strategic management. They proposed a framework that facilitates their integration with a balanced scorecard methodology. Our proposal explores another option complementary to the strategic vision, more focused on the operational dimension of the companies. In recent practical research about the implementation of business intelligence in relation to the role of information systems integration and enterprise resource planning, Zafary (2020) suggests it is time to investigate "suitable approaches by a focus on the appropriate factors for successful business intelligence implementation and by a comparative analysis of ways to boost business intelligence preparation".

In the meantime, competitive intelligence can support the following plans and activities of project management as described in The PMBOK® Guide (2017, 6th ed.): identification of stakeholders (point 13.1) and monitoring of their engagement (13.4); planning of risk management, specifically the identification of risks, the qualitative and quantitative risk analysis, the monitoring of risks and the planning and implementation of risk responses (11.1;11.2,11.3;11.4; 11.5; 11.6; 11.7); and planning of procurement management (12.1).

The proposal of this project management approach to competitive intelligence is founded in the comparison of the similarities and differences of the two disciplines in various categories (nature, scope, practice, process, recipients, and human resources) and, therefore, what they can learn from each other, as shown in Table 1. There is an important coincidence in the nature, the main objectives, and the recipients of both disciplines, with the relevant exception that the IC is also focused on understanding the external environment and not only on supporting managerial decisions and decision-making, as pointed out by Solberg (2016). Obviously, there are differences in the processes, but these are not obstacles to collaboration.

Table 1 Comparison of competitive intelligence and project management (prepared by the authors).

	Competitive Intelligence	Project Management
Nature		
Actionable knowledge.	X	X
Look for suitable results, not for generic knowledge.	X	X
Focus on risk reduction.	X	X
Search opportunities.	X	
Scope		
Enrich the intellectual capital of the organization.	X	X
Principal focus actually to support strategic decisions.	X	
Seeks knowledge about the environment in which organizations develop their activity.	X	
Principal focus actually to accompany development of operations.		X
Practice		
Most common practice actually in companies.		X
A standardized practice.		X
It is exercised in a formal or informal way.	X	
Process		
Consists of a series of processes whose outputs constitute the following process inputs.	X	X
Continuous and repetitive transformation process of information and knowledge articulated in a series of phases.	X	
Temporary effort with a specific beginning and end that is carried out to create a product, service or unique result vs. cyclical intelligence process.		X
Determined by the triangle constituted by the variables scope, time, and cost; fixed all of them, any modification of a variable necessarily implies the modification of the other.		X
Continuous monitoring and documentation exercise that allows to maintain a high control over what is done and its effects.		X
Recipients		
End users are the key decision makers.		X
Managers and directors of the companies have significant responsibilities in relation to the objectives, plans and actions of the design and planning of the processes.	X	X
The interaction between producers and users is complex, but they try to build communication channels and information flows.	X	X
Communication and activity processes between stakeholders are clearly established.		X
Human resources		
Highly specialized competences.	X	
Common skills of managers and middle managers.		X
Specialized director in this field is a common place in the organization chart on companies.		X
Frequently outsourced.	X	

3. DISCUSSION

3.1 Intelligence production and dissemination is a project

The five groups of processes of project management are initiation, planning, execution, monitoring and control and closure (Figure 2). Consequently, the main processes for carrying out a competitive intelligence project should correspond to each of these groups. The initiation processes consist of the identification of intelligence and information needs based on the intelligence requirement

received and the realization of the project's constitution. The planning process corresponds to the drafting and approval of the management plan. The execution processes consist of two complementary and interdependent processes: the collection of reliable and credible information and the analysis and evaluation of information. And the closing process corresponds to the dissemination of knowledge and the protection of information and intelligence created.

The management of the competitive intelligence project would include planning,

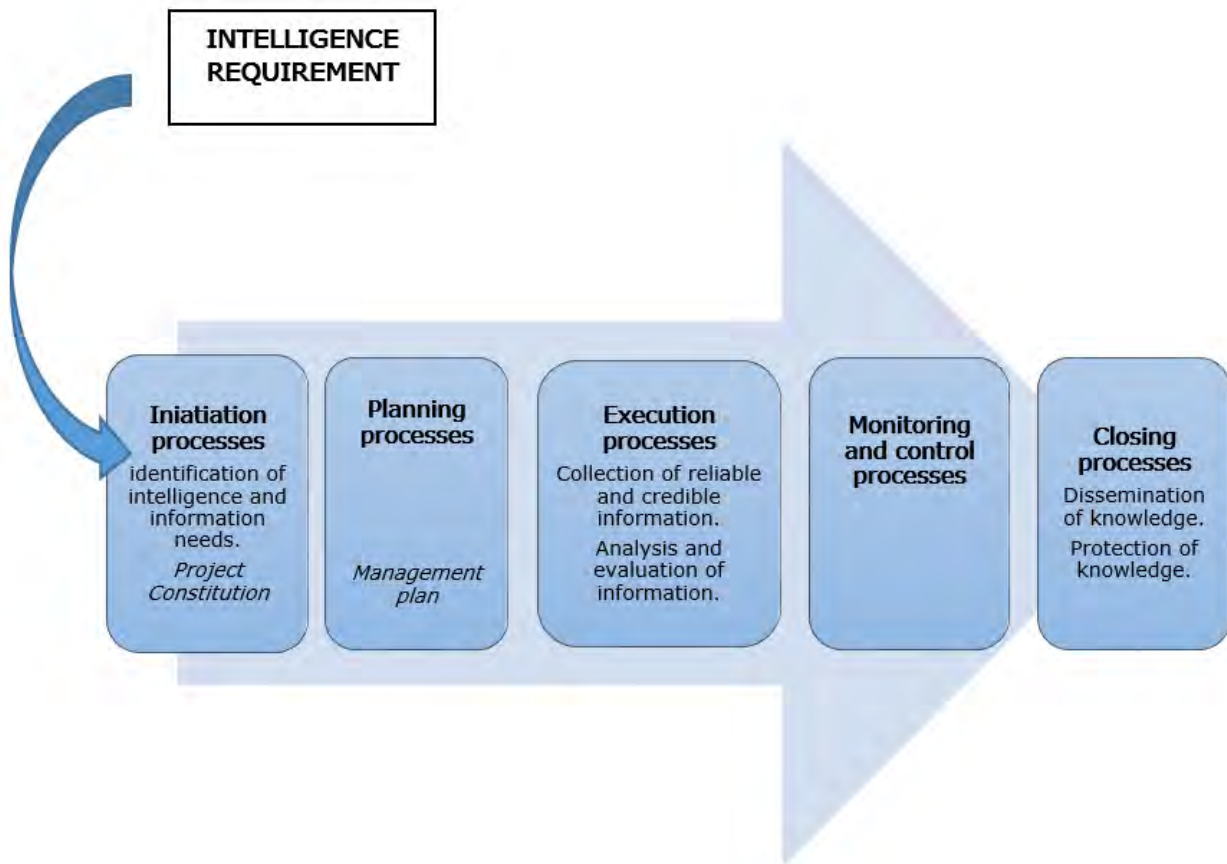


Figure 2 Competitive intelligence project management (prepared by the authors).

organizing, monitoring, controlling, reporting and taking the pertinent corrective actions of all the project processes that are necessary in a continuous way. The execution of an intelligence project should consider at least the following aspects: objectives and expected results, tasks to be performed, necessary material and immaterial resources, milestones that must be met (including start and end dates), formal revisions to evaluate the progression of the project, identification and risk management, control and documentation of results and changes and, finally, necessary support activities.

The organizational structure of a competitive intelligence project should be established in accordance with the requirements and policies of the organization and the specific conditions of their projects. The experience of previous projects, if any, should be used to select the most appropriate organizational structure. It should also be designed in a way that encourages communication and collaboration among all participants. The competitive intelligence project team should have at its head two key figures: the chief competitive intelligence officer (CCIO) of the organization and the

project managers of the various intelligence projects.

3.2 The team

The chief competitive intelligence officer of the organization must actively participate in the management of intelligence projects:

- In the initiation phase they lead the beginning of the project, collect the requirements, are the spokesperson before the client (internal or external) and the highest authority for the project, draw up the constitution minutes and names the competitive intelligence project manager, guaranteeing the alignment of the objectives with the strategy of the company.
- In the planning phase, they facilitate the work with the competitive intelligence project manager and the team, assigning them the necessary time, means and information.
- In the implementation and follow-up and control phases, they supervise the competitive intelligence project manager and once again exercise the role of project leaders before the management, resolving

conflicts that are outside the competence of the project manager, approving the changes and ensuring the fulfilment of the goals and objectives.

- In the closing phase they approve the deliverables before being sent to the client and ensure the administrative closure of the project.

When a situation arises with multiple projects in parallel, the chief competitive intelligence officer must proceed to organize the integrated management of the project portfolio. To do this, they will consider aspects such as the alignment with priorities according to the strategy, the policy and the established objectives; the balance between short and long-term projects, between low- and high-risk projects, etc.; the global supervision of the progress of the projects, taking into account the impact of the evolution of the internal and external context during its execution; and the optimization of shared resources.

The chief competitive intelligence officer entrusts the management of intelligence projects to the managers of intelligence projects, people of recognized experience and prestige who assume the leadership of the work team (normally multidisciplinary) that can be of a temporary nature and even be outside of the organization (e.g. university departments, technology centres, intelligence companies). Depending on the organization, the intelligence manager should identify and coordinate one or several project managers corresponding to different markets, activities and technology domains.

The competitive intelligence project manager plans and organizes the work, makes decisions, supervises and checks the execution of the project and controls and creates commitment with the team, among other tasks. Their operational responsibilities include to:

- Design and develop the processes of initiation, planning, execution, monitoring and control and closure of the competitive intelligence projects assigned.
- Determine the objectives and requirements of the client and stakeholders in the project, as well as delimit the scope and control of its execution throughout the life cycle of the project.
- Determine the deliverables and validate this information together with the client.

- Gradually transform high-level information into detailed action plans throughout the life cycle.
- Prepare the project management plan and all subsidiary plans that are necessary.
- Constitute and direct the project team to meet the objectives.
- Prepare and document descriptions of the positions or functions of the team members and other important actors for the project, including attributions of responsibility and authority.
- Lead and ensure the execution, monitoring and control of assigned projects, controlling and documenting possible deviations and establishing the necessary corrective measures.
- Control project documentation.
- Coordinate with other departments and processes of the organization to ensure the effective progress of the project.
- Anticipate the changes in the projects and implement the necessary processes to manage and control these changes.
- Advise the chief competitive intelligence officer in the establishment of e.g., strategies and budgets, and respond to technical and organizational issues related to project management.
- Review the fulfilment of objectives, action plans and indicators of the projects, reporting the results to the chief competitive intelligence officer.
- Evaluate the success of the projects assigned in relation to the quality of the service or product, the deadlines, compliance with the budget and the degree of customer satisfaction, considering the objectives and requirements documented and approved by the client.
- Document and reflect on the lessons learned.

The management of intelligence projects imply the creation of ad hoc teams with the participation of specialized technicians in the search, collection and analysis of information. These processes can involve a large amount of knowledge (e.g. technical, legal, intellectual property, economical, and/or sociological), so total or partial subcontracting will be at the discretion of the organization. The processes and associated activities can also be performed by a single technician based on the size and means of the company.

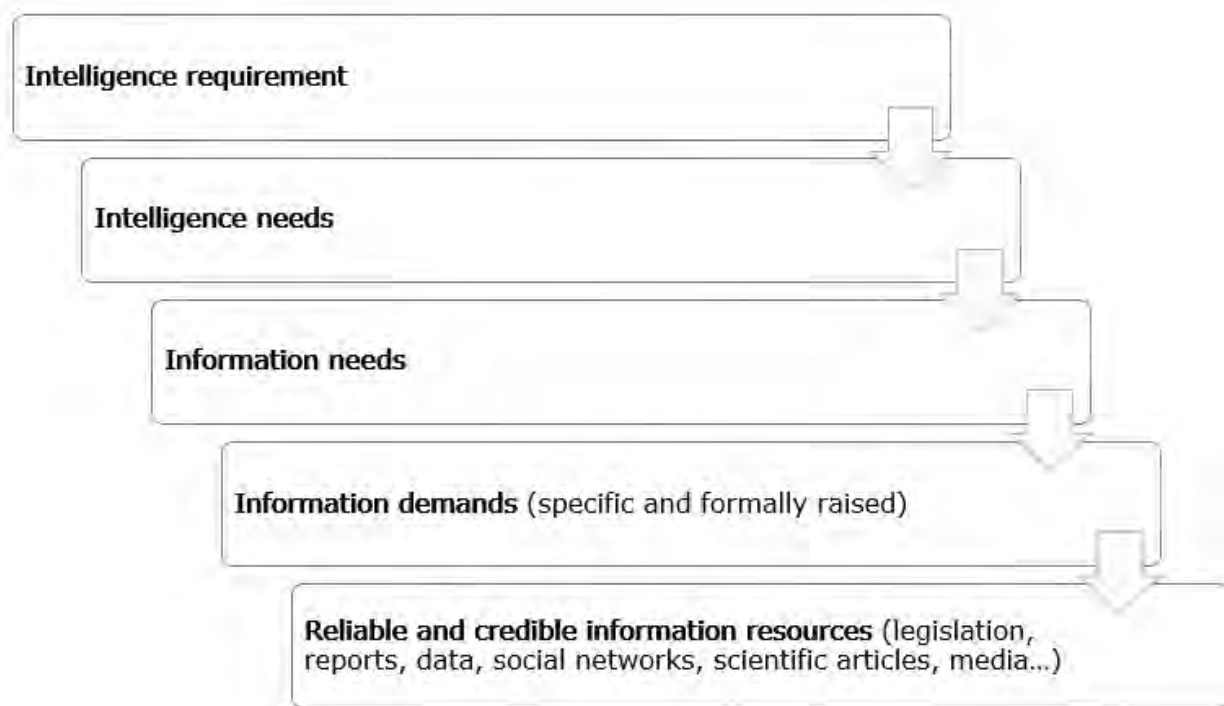


Figure 3 From intelligence requirement to information resources (prepared by the authors).

3.3 Initiating processes

A competitive intelligence project is activated with the approach of an intelligence requirement by the chief executive officer (CEO) of the organization or a functional unit. Each intelligence requirement or group of related requirements generates a specific intelligence project with its own plan, means, processes and unique actions.

The requirements can be general and prolonged in time or specific and singular. Applications from functional areas that express needs of the processes (e.g. knowing the activity of a competitor and making a prospective of their intentions) as well as monitoring critical issues of the environment will be addressed. Intelligence requirements may originate as a result of the evolution and different applications of the products, processes, materials and technologies based on the organization or the demands expected or expressed by the interested parties or external to it. Likewise, they may arise due to the socioeconomic, legislative, normative or project evolution or actions of the competition.

The chief competitive intelligence officer will evaluate the intelligence requirements to discard, promote, prioritize and organize the projects that it considers to be of the most strategic value given the available means. The results will be validated with the CEO of the organization. The methods and criteria for the

evaluation and prioritization of the requirements and, therefore, of the project, will integrate the needs of the users and other interested parties, the alignment with the strategy of the organization, the technical and economic viability, the expected result, legality, and sustainability. Once the requirements have passed this first evaluation according to general strategic criteria, there is a second criterion based on factors weighted and previously established by the chief competitive intelligence officer. The selection procedures to be used in this phase can be qualitative (e.g. a weighting matrix) or quantitative (e.g. NPV, IRR).

Initially, requirements that can be satisfied in a better way by other processes of the organization (e.g. market studies) will be redirected to them. Requirements that involve only basic information on a specific topic will also be discarded, but not before advising the plaintiff where and how to obtain it in the most effective and efficient manner.

The main process of initiating a competitive intelligence project is the conversion of the intelligence requirement that activated it into intelligence needs, which will be specified below as information needs that will subsequently lead to specific information demands (Figure 3). The conversion of intelligence requirements into intelligence needs must consider both the foreseeable use

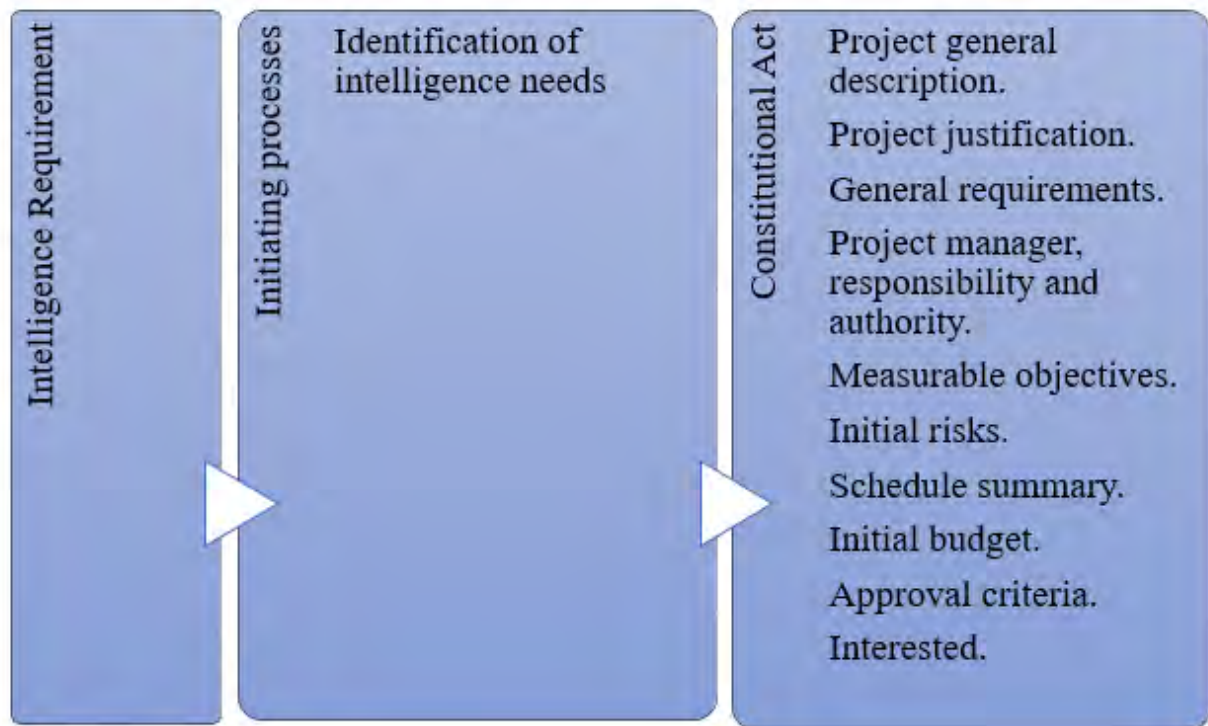


Figure 4 Initiating processes (prepared by the authors).

and the final recipients of the intelligence produced.

For the conversion of the intelligence requirement into the need for intelligence, the project manager must always bear in mind that users need intelligence to apply it, so they mainly seek the necessary, rather than a lot of information, through a simple and powerful process to achieve benefit from its use. As the end of the intelligence process is to respond satisfactorily to the needs of your client, the participation of the latter in the determination of intelligence needs from the general requirement is highly recommended for the success of the process. The intelligence project manager will assess, depending on the case and the circumstances, the need for the user to participate also in the formulation of information needs. In any case, it is recommended that those responsible for the strategic processes of the organization participate actively in the evaluation, validation and prioritization of the detected intelligence needs.

The intelligence project manager is also responsible for transforming the identified intelligence needs into information needs. If the project has a team it will get support from the analysts for this work. Each information need will give rise to different demands for information, of a more specific nature, which will be raised and expressed formally. The

basic principle that must be followed is that generating concrete questions will lead to precise answers. Procedures will be devised to propitiate the formulation of information needs and their upwelling as conscious needs capable of being formalized as demands, expressing themselves in a suitable way to interrogate the sources of information.

The start-up processes will be included in an act of constitution of the competitive intelligence project, with the following contents: general description of the project, justification, general requirements, director (indicating responsibility and authority), measurable objectives, initial risks, summary of the schedule, budget initial, approval criteria and interests.

3.4 Planning processes

The planning processes establish the scope of the project, determine, describe and review the objectives and goals of the project, and define the course of the actions necessary to achieve the objectives. The result is the project management plan, whose degree of detail depends on factors such as the magnitude and complexity of the project. Its design will:

- Ensure by the chief competitive intelligence officer that all the necessary means are available to complete the

- project, agreed upon and approved by the chief executive officer and all involved.
- Identify the participants involved in the execution of the project, mainly those with identified information and skills in documentation. This should define the necessary competence in terms of training, skills and experience of the personnel working on the project.
 - Define the support roles, when required for the implementation of the project (e.g. information systems, information security, and logistics).
 - Make sure that the organizational structure of the project is adequate.

- Encourage effective and efficient communication and cooperation among all project participants.

All agreements, including informal ones, that affect the performance of the project should be formally documented.

3.5 Executing processes

The execution processes complete the work established in the project management plan. The most characteristic aspects of competitive intelligence projects are the steps that include obtaining of reliable and credible information

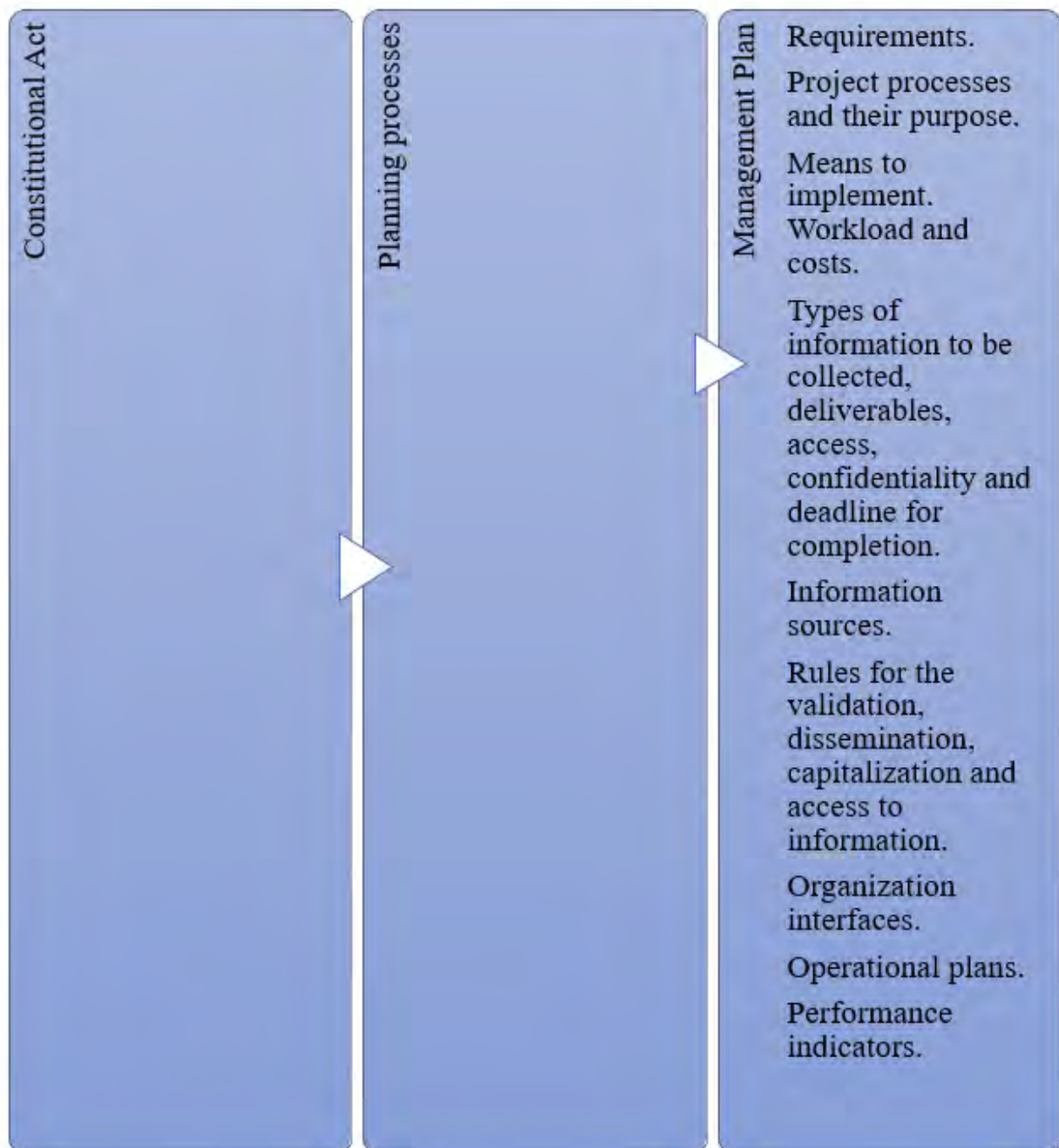


Figure 5 Planning processes (prepared by the authors).

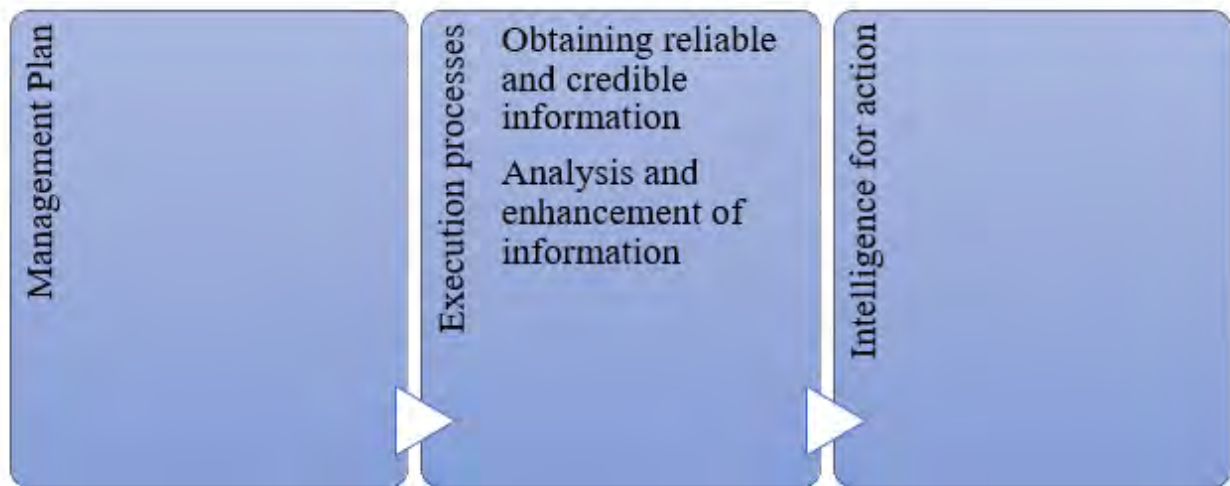


Figure 6 Executing processes (prepared by the authors).

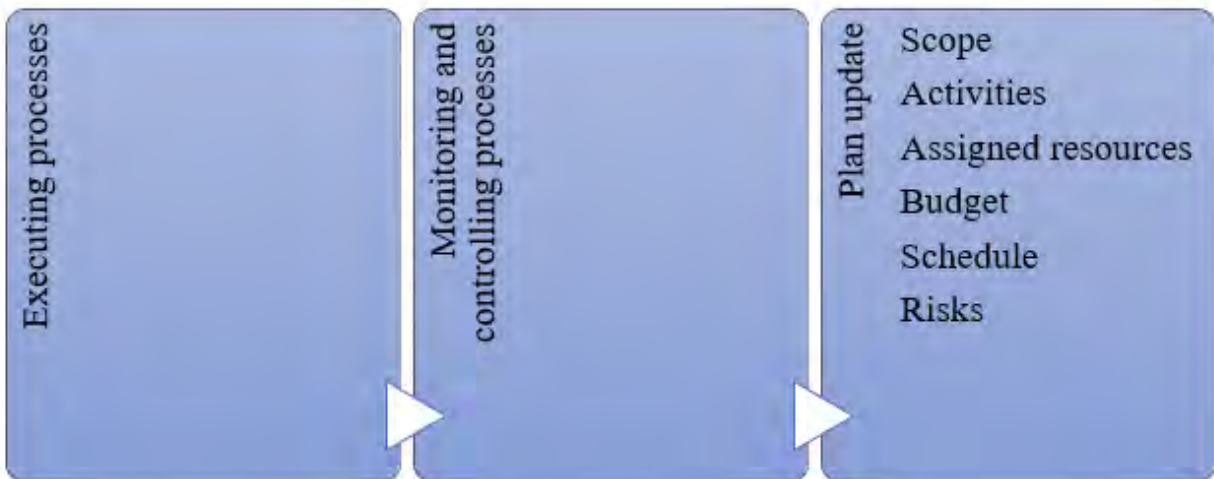


Figure 7 Monitoring and controlling processes (prepared by the authors).

and the analysis and evaluation of the information.

Information demands will be resolved during the process of obtaining information. They are satisfied by identifying and locating heterogeneous information sources that are public access, free or paid, to create a repository with the most appropriate material, consisting of information extracted from documentary or statistical databases, raw material price lists, directories of companies, academic publications, web pages, and social networks.

Human resources are another asset that is highly sought after and valued in intelligence projects: these include clients, employees, competitors, suppliers, market analysts, journalists, shareholders, and experts. Their participation is necessary in most intelligence projects. Hence, the chief competitive intelligence officer, with the collaboration of

project managers, must be concerned with creating, activating and using a network of internal and external informants to collect information. When using these sources, it is very important to document the information collected, to facilitate its later use and analysis (e.g. minutes of meetings with suppliers or customer visit reports).

It is advisable to start with the collection of information from open sources. This starts from the premise that expert professionals are available in this task, because it is cheaper, simpler and helps to limit the information to be collected by human sources, and then, if it is not necessary, to resort to them. On the other hand, the use of human resources may involve legal risks if not done correctly (e.g. it may be illegal for former workers of some companies to provide relevant information if they signed confidentiality agreements at the time), so it is recommended to take extreme precautions in

this regard and systematically resort to the safest sources.

The user can also provide information for the production of intelligence, because their knowledge of the organization, the environment and their experiences are fundamental inputs for the analysis. The user can indicate and help evaluate sources of information, can facilitate access to their personal contacts and can produce very useful documents during the performance of their activities.

The information retrieved must be validated to discriminate which data contribute to satisfy the information requirements formulated, in terms of reliability and credibility. The ultimate goal is to find time-pertinent, relevant and useful information to solve the user's intelligence needs. This will make it easier to determine if sufficient and quality information is already available to proceed in their integration and analysis, or if the information gathering process should continue.

It is convenient to document the processes of searching for and selecting information. In particular, the recovery strategy follows and indicates, keywords, descriptors, operators used, geographical or temporal segmentation.

When the needs raised require a deep analysis, the information obtained is put to use for decision-making through three activities. First, we proceed to integrate data from different sources in order to create a whole of greater relevance and scope than that covered by each information separately. Next, an analysis of that information is carried out to determine what information is accurate and relevant, to put it in context and establish

relationships to understand the subject investigated. Finally, these data are interpreted to achieve an understanding of the phenomenon and to forecast its possible consequences and evolution. The enhancement may require re-activating processes to obtain information, so procedures must be established to ensure the continuous communication between the leaders of both tasks.

Effective decisions are based on the analysis of data and information. This information processing can include both qualitative and quantitative techniques. As a result, we obtain formal information that can be complemented with other information of an informal nature (e.g. comments from a client or provider, or answers in an interview) and even with subjective assessments. There is a wide range of methods and analysis techniques. The person in charge of the competitive intelligence must establish procedures that minimize and guarantee the control of possible biases that may occur during the analysis.

3.6 Monitoring and controlling processes

The monitoring and control processes ensure compliance with the project in terms of time, cost, quality, anticipating problems, deviations and facilitating the adoption of corrective and preventive measures. If necessary, these processes will require the modification of the initial plan.

3.7 Closing processes

The closing processes are carried out to complete all the activities of the competitive intelligence project and formally terminate it.

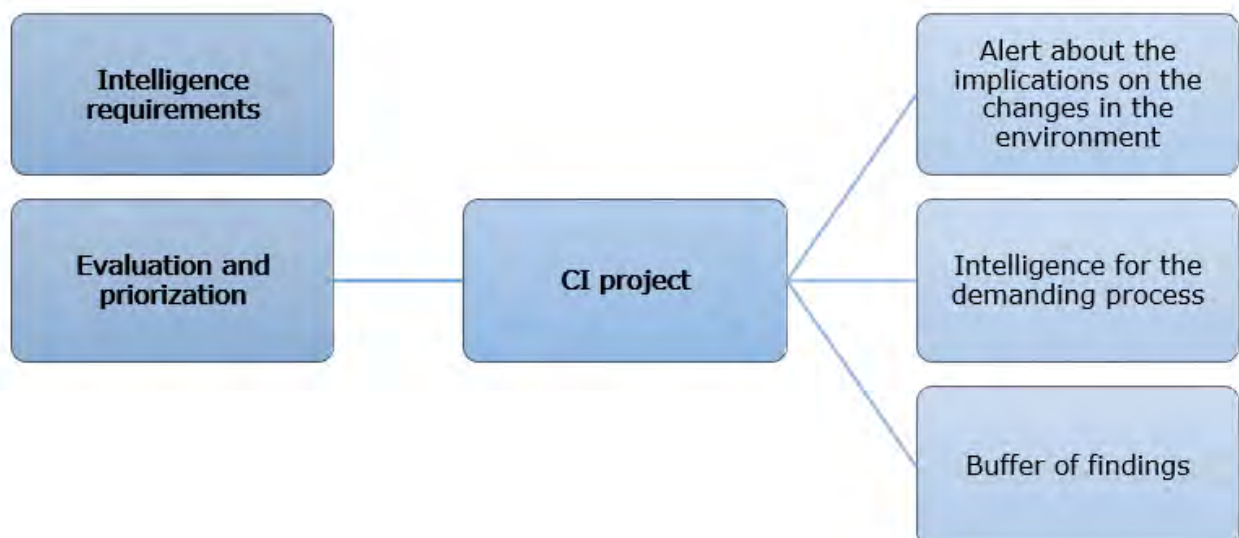


Figure 8 Inputs and outputs of a competitive intelligence project (prepared by the authors).

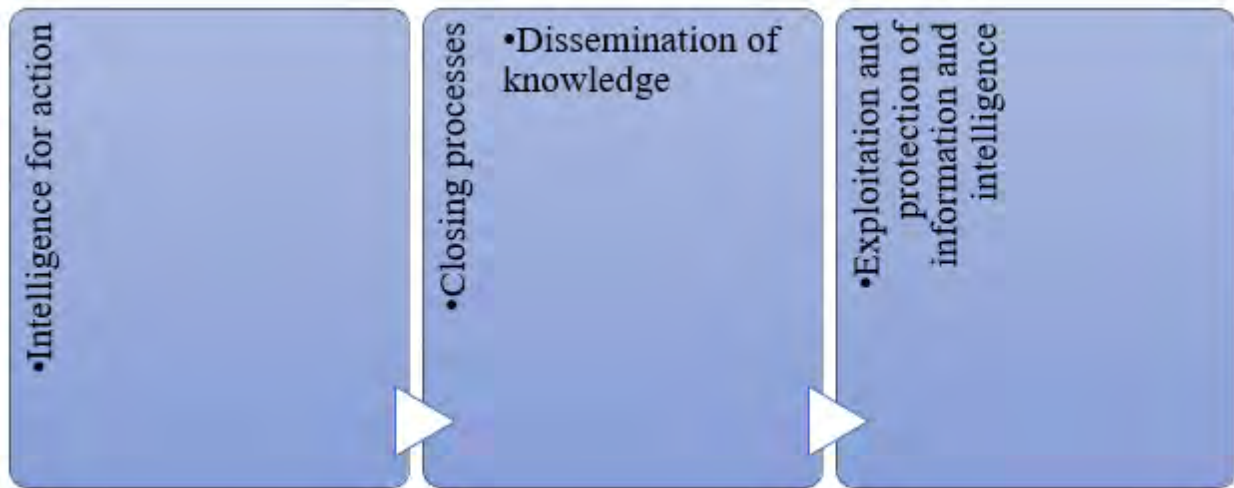


Figure 9 Closing processes (prepared by the authors).

The most important closing process for competitive intelligence projects is the dissemination and protection of the information obtained and the intelligence created and transmitted.

The results of the competitive intelligence project will have two forms. The first is called 'alert' and deals with the implications of the transcendental changes in the environment for the strategy and the plans of the organization. The second is 'proposed decision' for intelligence requests emanating from the different functional areas. Regardless of whether they are contemplated in the competitive intelligence project, all findings that may be of interest, presumably for other projects, should be preserved, forming a repository of strategic information or a buffer of findings (Figure 8).

The effort of competitive intelligence is not a process of compilation but of socialization of information and available knowledge. The knowledge created is not intelligence until it is transferred successfully to its recipient. In any case, the communication of the intelligence product must be carried out through secure channels and maintain the proper level of secrecy or confidentiality.

The timing of the dissemination of intelligence products depends on the nature of the end user, the intelligence needs to which it responds, the thematic or geographical coverage of the matter, the availability of new information or whether the organization is in a crisis situation.

The chief competitive intelligence officer must establish procedures to identify those

aspects of the intelligence provided that require clarification or expansion, have been more relevant to decision making, are relevant for implementation by users, have contributed more value to the business process with which it is linked or have generated new intelligence needs. When the intelligence transfer has been effective it can lead to the beginning of a new process of intelligence production, destined to solve new needs generated from the achieved results and the assimilation of the intelligence communicated.

4. CONCLUSIONS

The main conclusion is that companies will be able to implement a documented project management methodology that will establish a detailed plan for each intelligence project, with clear objectives and deliverables that will be monitored as it is executed. The methodology will include the management of the processes of obtaining reliable and credible information, and of analysis and enhancement of information as well as dissemination and protection of knowledge.

The proposal here could be an alternative to the departmental-based intelligence cycle model more aligned with the organizational culture and the usual operational practices of companies. This traditional model is founded on the design and deployment of projects with a specific beginning and end that are carried out to create a product, service or unique result. The combination of systematic activities and project management that arise in response to specific proactive and reactive intelligence needs favours the prediction of opportunities

and timely solutions of possible problems, guaranteeing the necessary permeability of organizations against the environment and avoiding the indiscriminate dissemination of information.

Likely, this project management approach to competitive intelligence will contribute to the use of competitive intelligence in all business processes and managerial functions, and not only in strategic decision making. Overcoming departmental structures as unique ways of organizing intelligence processes helps to break down cultural and, above all, organizational barriers. Because of this, and considering the development of intelligence as a project aligned with project management, this methodology facilitates its understanding by managers and their integration into the general dynamic as a subproject of support linked to a general project of creating a product or service. The only goal should be to ensure that the relevant information about the environment has been captured, evaluated, analysed, contextualized and made available to decision-makers at the right time, which will undoubtedly contribute to improving their competitive position.

The latter will also facilitate communication between collectors, analysts and users, and, in particular, the participation of managers involved in the management of a project in the processes of obtaining and analysing information, after equipping them with basic or advanced skills through in-company training. Sometimes, competitive intelligence is practiced spontaneously on an individual basis, in response to an urgent need to gather information and make decisions in changing environments. In fact, almost all companies produce intelligence in some basic way, whether or not they are aware of it.

This model of production and transfer of intelligence presented differs from the sequential approach in the form of a cycle developed more than sixty years ago, which underlies the Spanish technical standards UNE 166006 and UNE-CEN/TS 16555-2. For the validation of this proposal, it is necessary to conduct experimental implementations and case studies in companies using a project management methodology and their assessment by future academic studies.

In conclusion, it is necessary to think and act in competitive intelligence more with the entrepreneurial and project focused culture of a business manager than with the bureaucratic and secret procedures of an intelligence officer

in an intelligence service. Different intelligence tribes need to explore on their own and innovate techniques for their specific functions in the diverse organizations where they serve.

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