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The Definition of Competitive Intelligence Needs through a Synthesis Model

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ABSTRACT: Based on an exhaustive literature review, this paper presents an overview of the evolution of different methods useful for defining competitive intelligence needs, where the information helps the firm to justify its strategic decisions, the analysis of the early warning topics and the elements of the competitors' environment and the actors influencing the organization or its value system, and their categorization. These findings are part of a doctoral study aiming at identifying the usefulness of data coming from open intelligence. The researcher presents, on one hand, a categorization of competitive intelligence needs, and on the other hand, a synthesis model that assists managers in defining competitive intelligence needs. It also aims to show how to foster innovation.

KEYWORDS: Competitive intelligence, needs definition, decision support, innovation

1. Introduction

Competitive intelligence (CI) is about information gathering and use, looking for opportunities and threats; driven by the expression of the managers' needs and expectations, focused on finding the information «believed to be wanted», which they «would like to have» (Nicholas, D., 2000).

According to Larivet, S. (2009), the oldest definition of competitive intelligence (CI) is found in a publication of Hans Peter Luhn, in 1958, where

he refers to the use of information gathered through a communication system, emphasizing the «intelligence» character of the process because of its «*ability to apprehend the interrelationships of presented facts in such a way as to guide action towards a desired goal*» (Luhn, H.P., 1958, 314).

Nowadays, Choo, C. (1999) classifies the various information gathering activities based on four complementary definitions:

- *Competitor intelligence*, defined by Porter, M.E. (1982), as the activity aiming at developing «a profile of the nature and success of the likely strategy changes each competitor might make, each competitor's probable response to the range of feasible strategic moves other firms could initiate and each competitor's probable reaction to the array of industry changes and broader environmental shifts that might occur»;
- *Competitive intelligence*, proposed by the Strategic and Competitive Intelligence Professionals (SCIP) as the «process of monitoring the competitive environment»;
- *Business intelligence*, described by Gilad and Tamar (1988), as the «activity of monitoring the environment external to the firm for information that is relevant for the decision-making process in the company»;
- *Environmental Scanning*, outlined by Choo, C. (1999) as follows: «Environmental scanning is the acquisition and use of information about events, trends and relationships in an organization's external environment, the knowledge of which would assist management in planning the organization's future course of action», and «Environmental scanning casts an even wider net and analyzes information about every sector of the external environment that can help management to plan for the organization's future. Scanning covers not only competitors, suppliers and customers, but also includes technology, economic conditions, political and regulatory environment, and social and demographic trends».

According to Prescott (1999, 45-46), who refers to a 1997 study by the American Productivity and Quality Center, CI efforts mainly focus on (1) early warnings, with the aim of identifying «the opportunities and threats in the competitive landscape», (2) «strategic decision making», (3) «tactical decision making», (4) «competitive monitoring and assessment», and (5) «assistance with the strategic planning process of the organization». Therefore a central question concerns the choice of the focus, and «the types of intelligence that are most critical, both currently and in the future ».

Competitive intelligence concerns amongst others the identification of opportunities and threats, and then is at the starting step of a creativity and innovation process (Debois et al., 2011, 44).

Hence, we can identify two phases during which environmental scanning takes place, namely during the project development phase, and during the conduct of the project. The need for environmental

scanning is indeed recognized «At the business model elaboration stage, environmental scanning provides a precognition of the environment of the project necessary to the elaboration of strong and competitive business models (Osterwalder and Pigneur (2010, 14). When the business model is confronted to the market, the involvement of scanning takes on another dimension: it is the insurance of the business model's continuity by its redesign according to the environmental changes (Lequeux and Saadoun, 2008)» (Grèzes et al., 2012).

The monitoring process, or intelligence cycle, can take different forms depending on the different authors. The environment scanning activity is based on a formalized process, which is iterative and adaptable and is called «intelligence cycle», «information cycle» or «monitoring cycle». The aim of this process is to manage the quality of the procedure by systematizing it, and to adapt it to each situation. The successive steps of this process are described by the French Agency for Standardization (AFNOR, 1998) as follows: 1) to identify and map the users of information; 2) to assess information needs; 3) to identify and evaluate sources of information; 4) to provide access to information for each user; 5) to convert the raw information into useful knowledge; 6) to capitalize knowledge.

In his commented presentation of the standardization document AFNOR X 50-185, Sutter, E. (2005, §8.2) states that «the analysis of the collected information should identify threats and opportunities for the business' activities or market changes» (free translation).

Although critically discussed, this process illustrates the logic of the sequence of the environmental scanning process. Even if it is, for some authors (Bulinge, F., 2006), not directly transferable to the organization, this model has the advantage of providing a tool for rapid and effective understanding.

A process that is able to detect the opportunities for a sustainable business model is proposed by Bonazzi and Grèzes (2013). This process follows the steps shown in Fig. 1, and can be adapted to the general monitoring process in the following manner:

- (1) employees answer a series of questions concerning to the CI needs of the organization;
- (2) managers confirm the relevance of the questions by checking their accordance with strategic priorities;

(3) employees or the associated system collect the variables in open databases, perform data analysis, gather trends, and present them to the managers;

(4) managers and experts gather information about trends and design new scenarios based on the detection of opportunities or threats;
(5) new scenarios are tested.

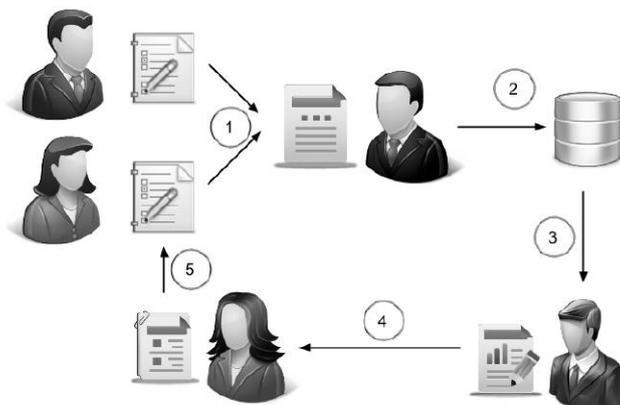


Fig. 1: Weak signal detection process, Source: Bonazzi and Grèzes (2013)

In order to define the CI needs, several methods are regrouped and compared by Vuori (2006), such as questionnaires, interviews, observations, Critical Success Factors (CSFs), which are defined as «the few key areas of activity in which favorable results are absolutely necessary for a particular manager to reach his goals» (Bullen, C. V., Rockart, J. F., 1981), and Key Intelligence Topics (KITs), which allow the manager to focus on the strategic actions and decision of the firm, the early warning topics (competitor's initiatives, technologic and governmental issues), and the key competitors profiles (competitors, customers, suppliers, potential partners) (Herring, J. P., 1999).

Vuori's findings show that questionnaires, interviews and observations are mainly affected by the skills of the researcher, whereas CSFs and KITs, structured to elicit critical and specific information needs, are more affected by the manager's skills.

Hence, the manager's skills are crucial in the CI needs definition process. Butcher, H. (1998) identified that the major problem concerning the CI needs definition are the ignorance of the information's availability, and the misunderstanding of its obtaining and use. Moreover Madinier, H. (2007) and Belin et al. (2008) show that environmental scanning processes encounter implementation problems due to a lack of managers' ability to define objectives and strategies, in order to elicit scanning axes.

Regarding the managers' attitudes towards the definition of CI needs, Herring (1999) recognized three types: (1) the reticent manager who has some problems expressing his needs, (2) the one who wants to know everything, but who is not able to

describe his needs and believes that he will recognize the pertinent information, (3) «the manager who asks the business intelligence unit what he needs to know».

Regarding the needs, Marti, Y. V. (1996) considers three categories: (1) «information that is wanted but that is not really needed», (2) «information that lacks and that is recognized to be needed», and (3) «information that is needed but not known to be needed, nor wanted, nor asked for». This distinction is important in that it allows to distinguish between the «wanted information» as «nice-to-know» information, and the required information.

One of the main problems concerning the CI process in a firm is that managers do not know what to ask their CI manager, because they sometimes seem to ignore the vectors of opportunity, threats and innovation. Hence it is of utmost importance to look for methods that help managers to know about it. Therefore our research question is the following: How to support the managers in the definition of their competitive intelligence needs? It is the aim of our research to propose a model that supports managers in defining their CI needs.

The remainder of this article is organized as follows: the second section exposes the methodology used; after the state of the art, results are analyzed in the fourth section; a discussion on limits and further research concludes this paper.

2. Methodology

This research consists of a literature review and analysis based on scientific and professional literature in the fields of competitive intelligence

and strategic management, related to the definition of the CI needs. We synthesized the results from the literature review and produced a CI needs design model, based on a typology of the CI needs, that facilitates the identification of their types. On this basis we also deduct a CI alert matrix, or strategic matrix, which allows to link information from the outside to the inside of the firm and in order to identify opportunities and threats for an organization. The typology allows one to describe the potential collectable knowledge in a given geographical area and provides an analysis of the factors that determine the structure of production of that knowledge (Doty et al., 1994). The approach we adopted to infer the theory from the analysis of the data is called «grounded theory» (Strauss and Corbin, 1994).

3. State of the art

There are only a few studies in the existent literature that concern our research question, amongst them are Müller (2004), Vuori (2006) and Herring (1999, 2006) which propose a method to elicit the CI needs based on questionnaires, or on a comparison of several methods. In order to enlarge our analysis of the literature on CI needs, we searched and consulted the following references in the field of competitive intelligence and strategic management: Porter, M. E. (1982, 1986), Ghoshal and Westney (1990), Bloch, A. (1999), Herring, J. P. (1999), Prescott, J. E. (1999), Bieger, T. 2002, Besson and Laloum (2003), Conseil Régional de Lorraine (2003) Fleischer and Bensoussan (2003), Müller, M.-L. (2004), Vibert, C. (2004), Fleischer and Bensoussan (2008), Abels and Klein (2008), ICOMTEC (2010), and SCIP (2013). Finally, the state of the art confirms the need of our research question.

4. Analysis, typology and model creation

The research steps were threefold: (A) analysis of the evolution of different methods useful to define CI needs based on competitive intelligence and strategic management literature, (B) analysis of the CI needs and typology, and (C) creation of a model which is a synthesis of the existing models and which serves as a support for managers to define their CI needs.

A) Evolution of different methods useful to define the CI needs

The literature offers several approaches in order to define the CI needs of an organization. They can be defined as the categories of information, or themes, on which the company or organization must focus its environmental monitoring efforts.

In the early 1980s, Porter emphasized the need to establish, within the company, a competitor intelligence system. According to him «the competitive analysis aims at revealing the nature and the degree of success of strategic changes that, in all likelihood, each competitor could undertake, and the possible reactions of other firms, and their likely responses to all the industrial changes and, broader, to all the transformations in the environment that may arise» (Porter, M. E. 1982, 52 – free translation).

Following these developments, Martinet and Ribault (1989) systematized the CI needs based on the model of the 5 forces of Porter, ME (1979, 1982), including customers, suppliers, substitute products or services, new entrants, as well as intra-industry competition (public authorities are not mentioned in the first model of Porter).

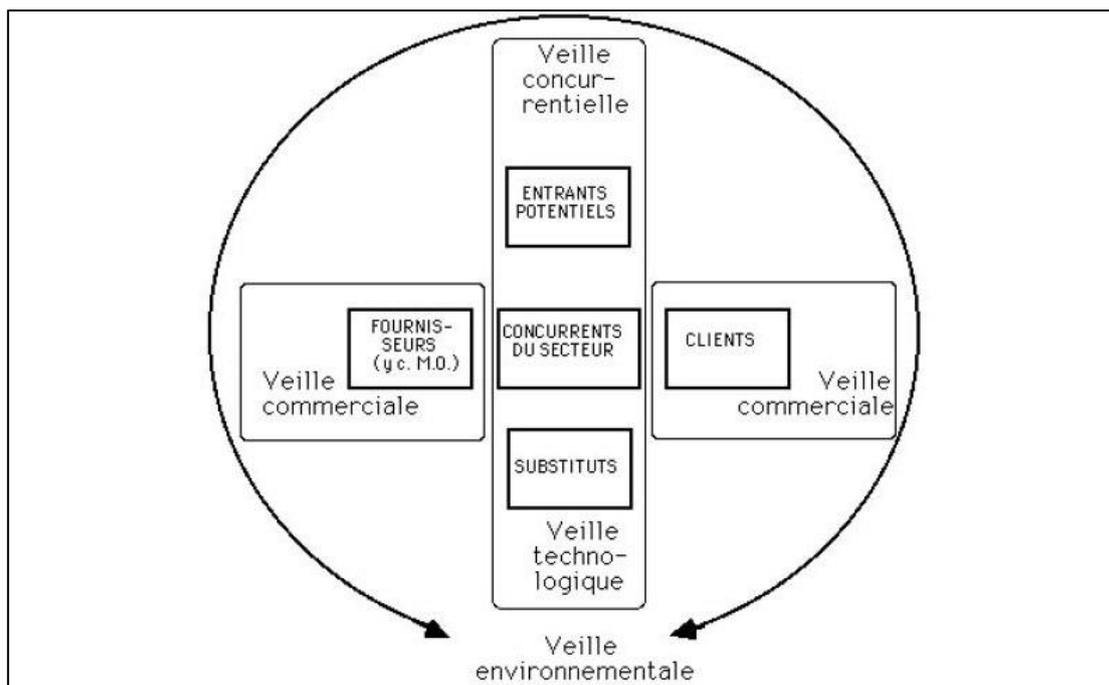


Fig. 2: The CI needs

Source: Martinet and Ribault (1989), based on the 5 forces of Porter, M.E. (1979)

The model proposed by Martinet and Ribault (1989), followed by Bloch, A. (1999), has the advantage to offer a simplified view on external issues in terms of external pressure forces related to the organization. According to Fleischer and

Bensoussan (2003, 60), this approach allows to identify opportunities and threats in the industry, by studying its participants and its characteristics. Fleischer and Bensoussan (2003) propose the following model by developing Porter's (1982) model of the 5 forces of Porter:

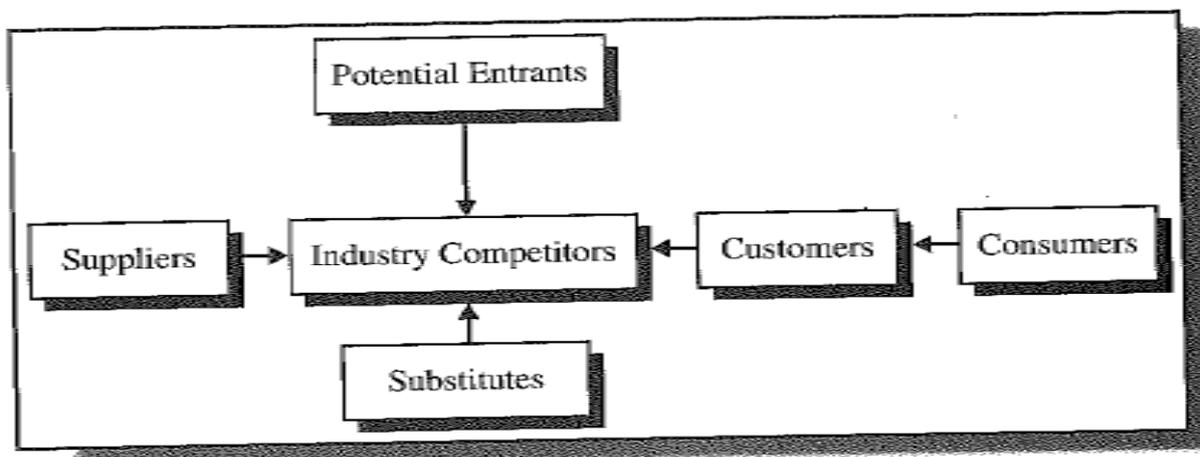


Fig. 3: Standard process of sector analysis. Source: Fleischer and Bensoussan (2003, 67)

The authors, referring to M. Porter, propose to collect information on each element of the competitive environment successively: competitors, suppliers, potential entrants, substitutes, customers, consumers.

Bloch, A. (1999) recalls the principles proposed by Porter, ME (1982), which advocates, achieving a monitoring on the competitors' value chain, in addition to the CI needs model including the 5 forces approach as presented by Martinet and Ribault (1989) first, then by Fleischer and Bensoussan (2003).

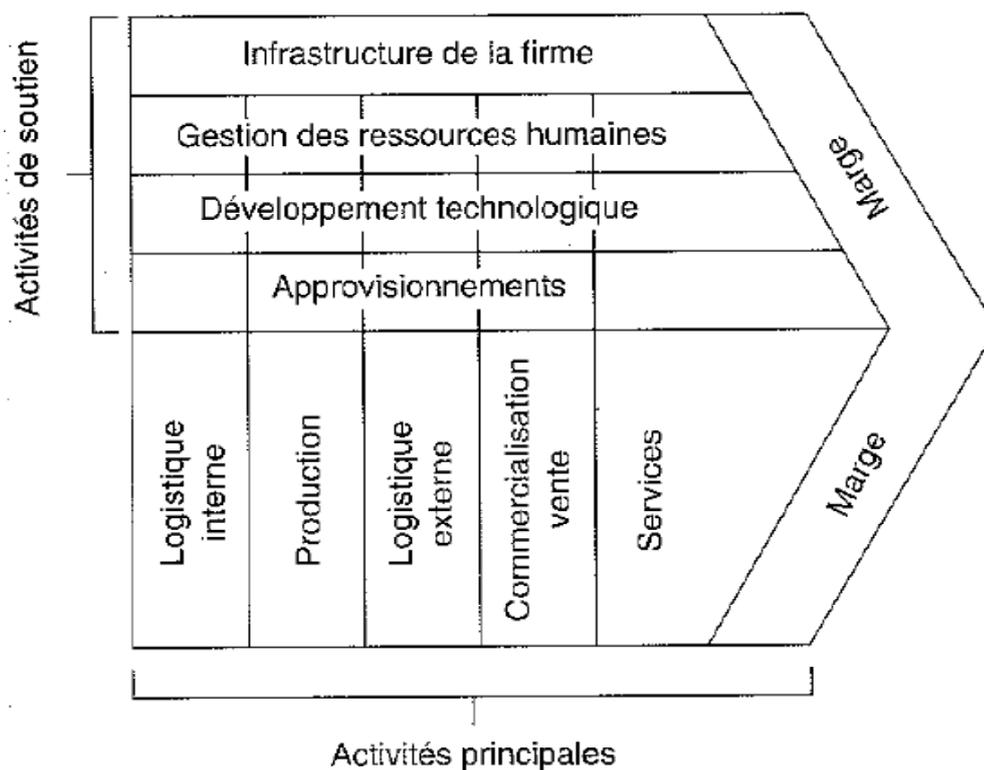


Fig. 4: Michael Porter's Value Chain. Source: Bloch, A. (1999, 21)

According to Porter, ME (1986) the advantage of this approach based on the value chain model, is its ability to simplify the main activities (internal and external logistics, production, marketing and sales, service), and the support activities (infrastructure, human resources, technological developments, supplies) for a company or organization.

This approach also allows to analyze the companies' functioning, by employing a competitive intelligence approach, and additionally to analyze the microeconomic environment of the company.

The most recent developments in modeling the business components have taken the form of business models designs. This approach, formalized by the business model canvas proposed by Osterwalder and Pigneur (2010) is complementary in terms of mapping and simplifying a

complex reality. Indeed, the authors define a business model as describing « the rationale of how an organization creates, delivers, and captures value. »

The proposed framework therefore aims at helping to « describe and analyze the economic model [a] company [a] competitor or any other organization. » Based on the results of a doctoral research (Osterwalder, A. 2004) and tested with many companies, this framework is composed by 9 interrelated blocks:

- the value proposition,
- key activities,
- key resources,
- key partnerships,
- distribution channels,
- customer relationships,
- customer segments,
- cost structure and revenue streams

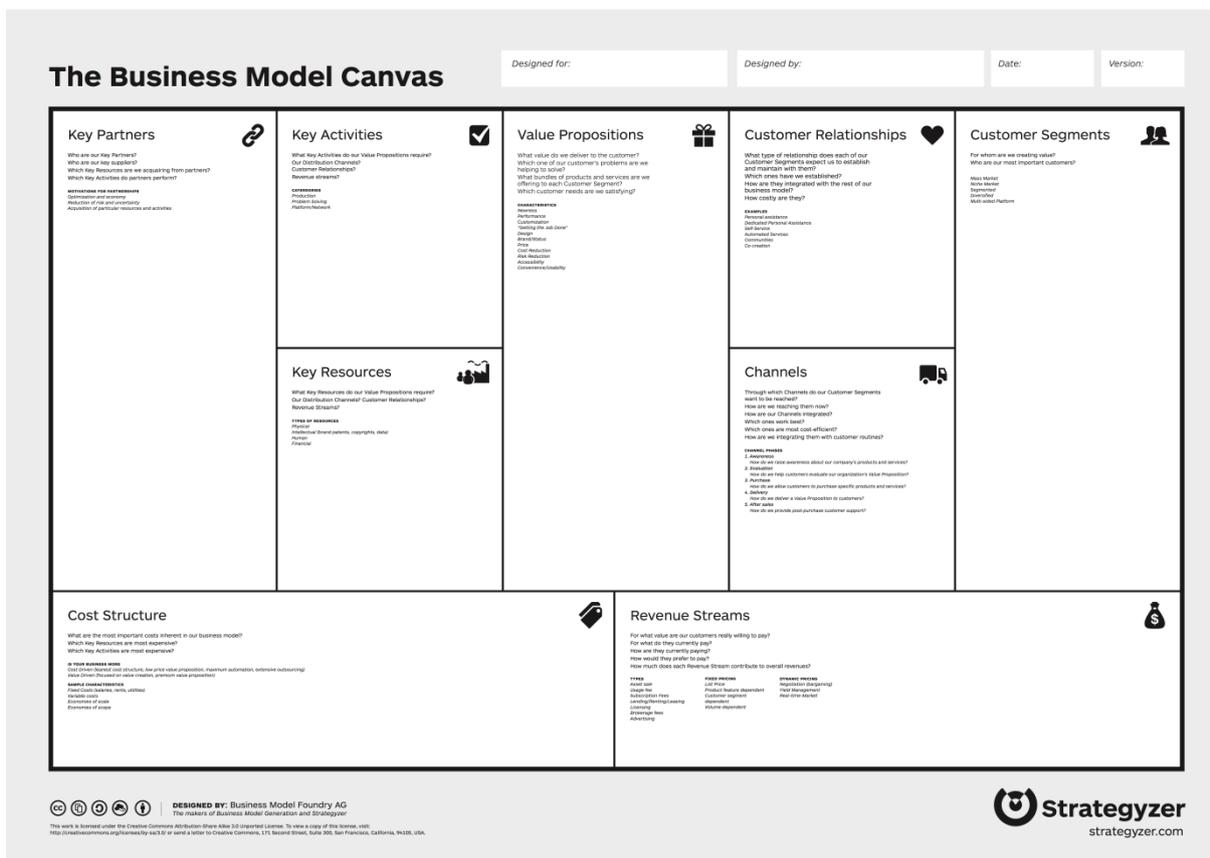


Fig. 5: The business Model Canvas
Source: Strategyzer.com based on Osterwalder and Pigneur (2010)

Moreover, and according to Seddon and Lewis (2003), the design of one or several business models takes part of the strategy

of the organisation as an abstract tool that can be multiplied according to the different value propositions of the firm (Fig. 6).

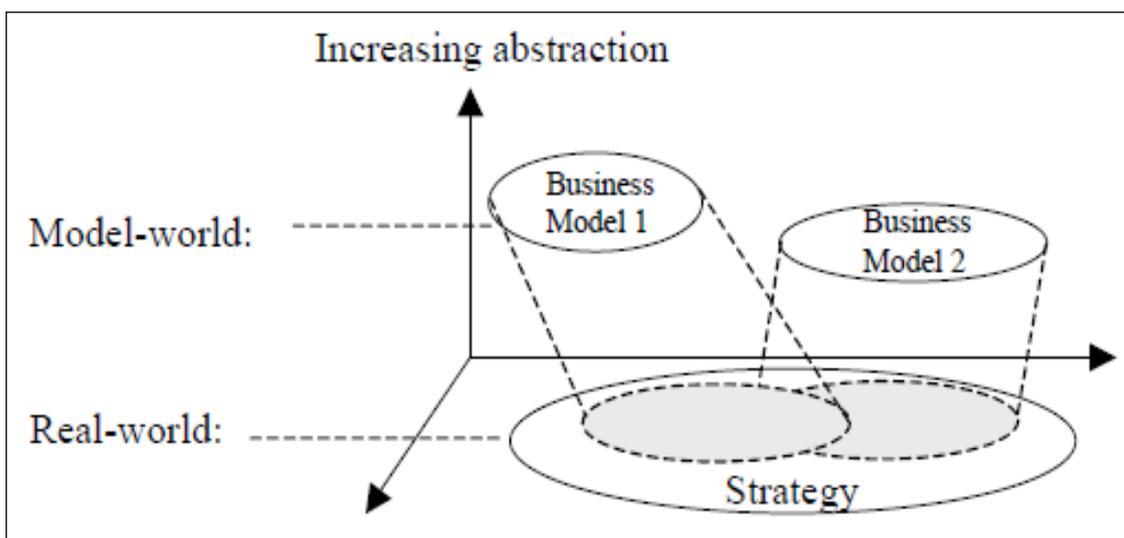


Fig. 6: The relationship between « Business Model » and « Strategy »
Source: Seddon and Lewis (2003)

Assuming this position, synergies can be found between the business model design and the

environmental scanning in order to benefit from their complementarities, as

much in the definition phase of the strategy of the company as during its activities. One major limitation of these approaches which aim at defining CI needs relies on the fact that they only take into account the internal factors of the company and those of its direct microeconomic environment. Hence, they should be complemented with the observation of the elements emerging from the company's macro-economic environment. According to Andrews, K. (1971, 59-60), «the determination of a suitable strategy for a company begins in identifying the opportunities and risks in its environment». The author states that «the environmental influences relevant to strategic decision operate in a company's industry, the total business community, its city, its country, and the

world. They are technological, economic, social, and political [...]». In addition, Andrews emphasizes the continuous nature of the monitoring, without which it «become[s] inappropriate or even obsolete».

The synthesis of the microeconomic and the macroeconomic approaches has been achieved by combining the 5 forces of Porter's approach and the analysis of the environment as initiated by Andrews, K. (1971). This particular model is formalized by the analysis of the 9 sector strengths proposed by Fleischer and Bensoussan (2008) (Fig. 7).

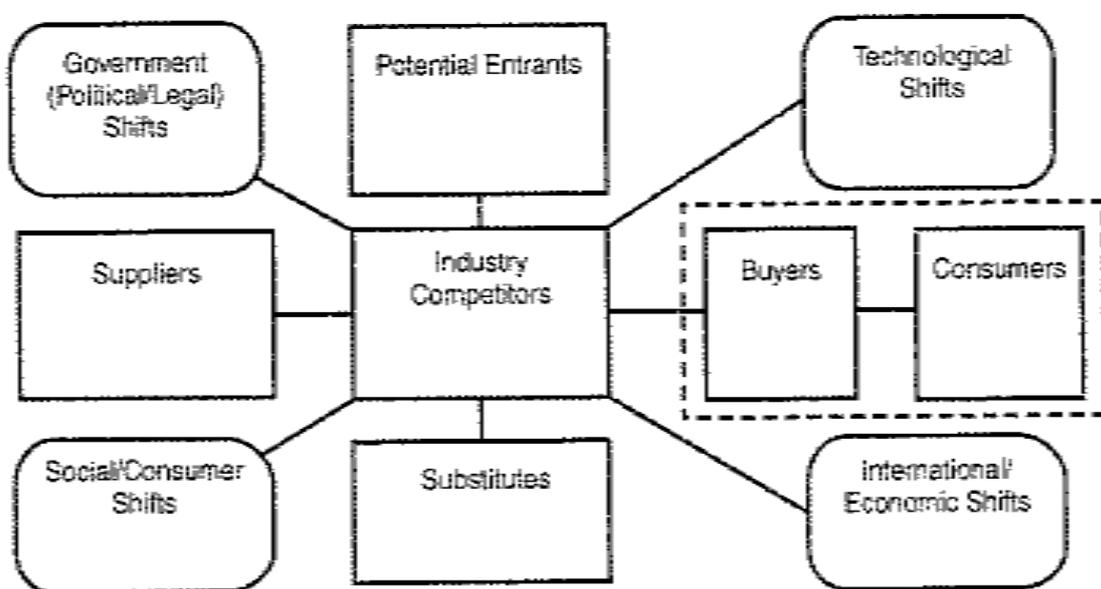


Fig. 71: The 9 sector strengths. Source: Fleischer and Bensoussan (2008)

The model proposed by Fleischer and Bensoussan (2008) has the advantage of linking internal and microeconomic CI needs with the environment of the firm, based on a logical evolution of the model of Porter, ME (1979), supplemented with elements from the PESTEL analysis. This approach has a holistic and schematic nature, which can address part of the theoretical CI needs of the business.

Moreover, this model allows to consider all the elements required in the analysis of the environment proposed by the French Ministry of Economy, Industry and

Employment (2009) in his guide of best practice in competitive intelligence, as well as Osterwalder and Pigneur (2010), which present a systematic approach to the analysis of the environment in order to support leaders in their strategic thinking.

However, Porter, ME (1986) states that «to gain and maintain a competitive advantage, we must not only understand the value chain of the firm, but also how the company fits into the overall value system». (free translation). This value system is shown below (Fig. 8). This position is also shared by Andrews, K. (1971), for whom the observation of the evolution of the corporate sector and cross-sector developments having an indirect link with the structure is necessary.

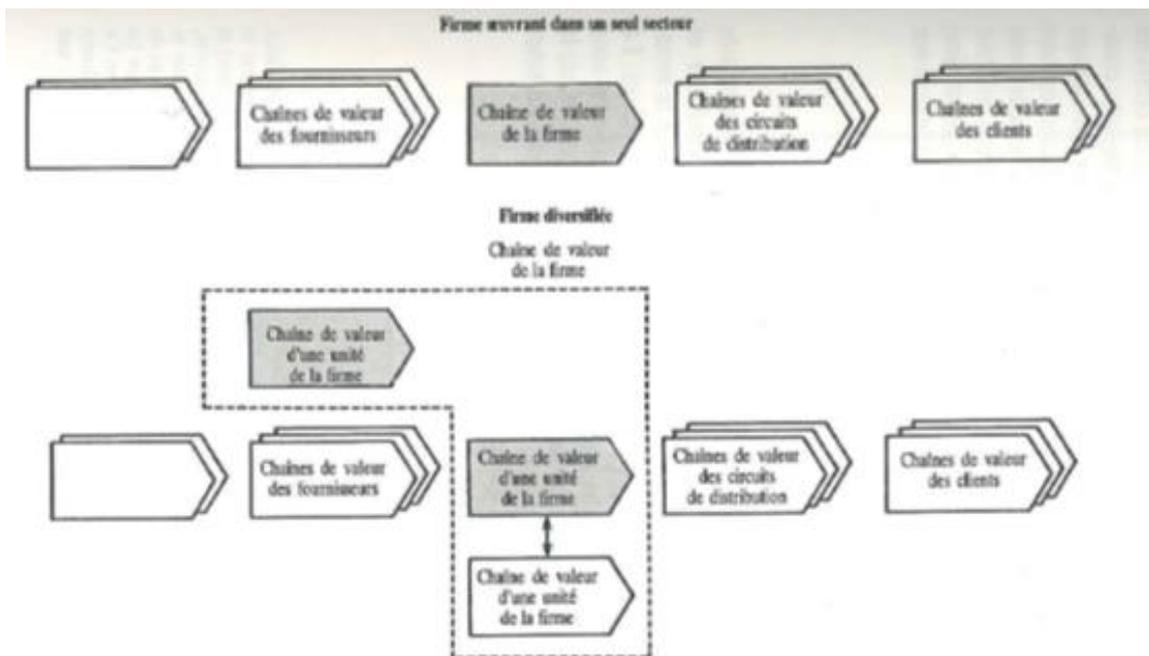


Fig. 8: The value system. Source: Porter, M.E. (1986, 51)

This system can be schematized, as in the example of Porter, ME (1986), by a series of activities that add new value to the same good or service. Hence, this is called a chain for industrial activities.

This broader flow of activities is the clustering of different value chains of suppliers and customers in an economic relationship. For example, the construction industry includes activities such as material extraction and processing, transport, several building activities, promotion, sales and management.

Thus, the observation of the structural changes (diversification and integration of activities) of the analyzed sectors composing the value system is likely to provide information about the potential development of the other sectors of the chain, and the chain as a whole.

Other value system approaches are presented, particularly in the field of tourism industry, where different types of tourist services are divided into sectors connected by a functional link through geographic and temporal elements. (Leiper, N., 1979) (Fig. 9)

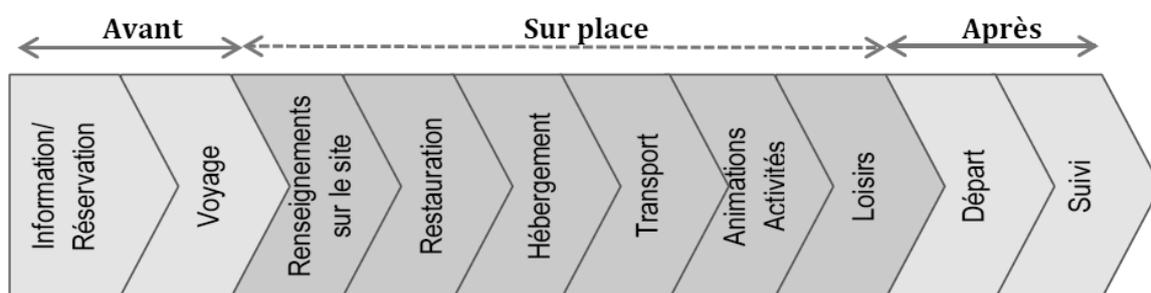


Fig. 9: Tourism Services Chain. Source: adapted from Bieger, T. 2002

The various activities in the chain have no direct commercial relation as in the model of Porter, ME (1986); however, according to Leiper, N. (1979) and Bieger, T. (2002), this succession of services can deliver the value expected by the tourist in a tourist destination. A change in the structure of the various activities of the value system is therefore also likely to affect other system activities.

B) Types of CI needs and categorization

The definitions of the identified types of CI needs are summarized below. These types of CI needs cover the various strategic information needs aiming at providing the company a pertinent knowledge about the opportunities and the threats from its environment. The CI needs are distinguished according to the level of connection

with the organization: (a) microeconomic level CI needs, (b) macroeconomic level CI needs.

1) CI needs at the microeconomic level

The CI needs at the microeconomic level concern the elements which are directly related to the organization. These are the competitive CI needs (1), the marketing CI needs (2), the partnerships CI needs, (3) the substitutes and new entrants CI needs (4), and technologic CI needs (5). These types of CI needs are particularly relevant for risk management and benchmarking, as well as in the conquest of new markets and skills acquisition.

According to Aguilar, M. (1992), based on a study conducted by the French Government on 845 SME, information about competitors (71%) was the third largest CI need after the technology sector (75%) and the markets (82%). This study confirms the results of Aguilar, FJ (1967, cited by Andrews, K., 1971), which stated that the information about the market, including competitive field information, dominates other categories of information search (including technological). More recently, Digimind's study (2012) revealed that 89.6% of the respondents announced that the competitive CI need is one of the key areas of business intelligence, while two thirds agree that the acquisition of talent is a less prominent concern.

It should be noted that some authors include, in the competitive CI needs, all activities involving the observation of customers and suppliers (Besson and Laloum, 2003, Rouach, D. 2005). Indeed, relations with suppliers of the company, as well as with its customers, are represented by a chain of contractual relations. However, we have chosen to distinguish these different interests by basing us on the type of relationship, such as participation in the company's business (partners) or end consumers (marketing), rather than on the legal artifact used.

a) CI needs about competitors

Competitor CI needs means the monitoring of the economic agents using simultaneously the same resources (natural, human, intellectual, etc.) and acting simultaneously on the same market. This type of intelligence focuses on all direct or indirect competitors of a project, company or organization (Bourcier-Desjardins et al., 1990). Bloch, A. (1999) states, that this monitoring should cover the entire competitors' value chain. These information requirements are intended to identify the advantages and disadvantages of competitors (Osterwalder and Pigneur, 2010) i.e. the observation of competitors' business model as a whole: competitors' value proposition (pricing strategies, quality, services), markets, distribution

channels and key activities, key resources, physical, intellectual, human and financial resources (Osterwalder and Pigneur, 2010, Besson and Laloum, 2003), technological partnerships and their cost structure (Marcon and Moinet, 2011, Besson and Laloum, 2003).

Some authors emphasize that this monitoring should focus on the management choices (Besson and Possin, 1996, Porter, ME, 1982 Calori and Atamer, 1988) which should allow to highlight the competitors' strategies, and thus to have a vision of the market's direction.

b) CI needs about marketing

Marketing CI needs focus on the observation of the opportunities and threats that may have an impact on the promotion and distribution channels, the targeted places, and the pricing strategy (Besson and Laloum, 2003, Rouach, D. 2005). Some authors insist particularly on the importance of data from the market (Jakobiak, 1992), as well as customers' follow-up, new prospects' detection, and image among customers (Marcon and Moinet, 2011). According to the business model of the organization, elements relating to customer relationships and distribution channels, as well as customer segments and revenue streams, might be relevant. Quantitative methods (business intelligence, investigation, etc.) and qualitative customer analysis (focus group, survey, etc.), will be advantageously coupled with sociological approach, in order to assess the acceptance of products and distribution channels by the public.

Risk management associated with current partners, with marketing related activity, is analyzed in terms of partnership CI needs. In the marketing field, it is important for the organization to detect trends in distribution, commercial methods, expression of new needs (Marcon and Moinet, 2011) and new pricing strategies.

c) CI needs about partnership

The partners are strategically important due to their involvement in the production of the company's value proposition, this way providing a key activity or a complementary key resource to the company. Partners can also participate in the delivery of the product or service to customers, or in maintaining relationships with customers.

Therefore, the Partnership CI needs particularly focus on suppliers, business partners, and contractors or distributors of the organization (Besson and Possin, 1996, Bourcier-Desjardins, et al., 1990, Besson and Laloum. 2003, Rouach, D. 2005, Marcon and Moinet, 2011). According to

Osterwalder and Pigneur (2010) the four types of partnerships are: strategic alliances between non-competitors, strategic partnerships among competitors, joint ventures to develop new activities, and buyer-supplier relationships. For its part, Wanner, R. (2011) distinguishes partnerships depending on their purpose as pre-production, on an alliance related to a specific demand, on distribution or on marketing.

The Partnership CI needs have two facets. The first is based on the management of risks in relationships with existing partners (a), the second is to identify opportunities and threats related to the emergence of actors or alerts in the field of current business partners (b).

a) The Partnership CI needs are particularly related to limiting risks associated with agencies' relations and information asymmetries between the partners. The bigger the value added by the partner is, the more its potential failure is likely to have important consequences for the organization. This monitoring focuses first of all on the review of the capacity of partners to fulfill their obligations to ensure their non-failure (Besson and Possin, 1996, Besson and Laloum, 2003). Consequently, the CI needs also focus on actors and partners' strategic positions and moves. For example, the vertical integration of a partner in order to strengthen his market power, or the strategic alliances with some competitors, could limit access to resources or customers (Osterwalder and Pigneur, 2010, Porter, ME, 1982, Calori and Atamer, 1988).

b) The Partnership CI needs focus also on monitoring and identifying new potential partners to optimize the processes, looking for costs reduction through the acquisition of new resources and activities, or to expand or gain a customer segment. (Marcon and Moinet, 2011, Wanner, R. 2011)

d) CI needs about new entrants and substitutes

CI needs concerning potential entrants and substitutes could have potential effects at different levels of the organization. Observation of new entrants and substitutes must cover the identification of actors in the different areas which are partners, marketing, technological developments and competition (Porter, ME, 1982, Rouach, D., 2005 Osterwalder and Pigneur, 2010).

Different authors insist on substitute's detection (Rouach, D., 2005) and potential new entrants (Marcon and Moinet, 2011). According to Porter, M. E. (1982), CI needs concerning substitutes and

potential entrants are on the boundary of competitive and technological intelligence.

The CI needs concerning potential entrants and substitutes focus on the identification of actors acting simultaneously on the same customer markets, offering the same products or services, meeting the same needs, or acting with the same resources as the organization. This CI needs seek to identify potential threats that arise from the emergence of new competitors or new replacement offers.

The identification of new players could have an impact on the product or service, markets, distribution channels, customer relations, or on the pricing strategy. It also focuses on the opportunities associated with the implementation of new collaborations for the resources management and the achievement of key activities, as well as threats to current collaborations. It may include the identification of good practices among peers, and consider benchmarking.

e) CI needs about technology

Technology CI needs are a special type of CI needs that has many facets: it concentrates on developments in the near and distant technological environment of the company (Bourcier-Desjardins et al., 1990).

In terms of close technological environment, it refers to the changes in technological fields related to key activities, key resources, and the company's value proposition, but also in its distribution activities and customers' relationship. According to Rouach (2005), technology CI needs cover fundamental and applied research activities, processes and machining processes, as well as patents and standards (Besson and Possin, 1996). This field deals with monitoring of brands, seminars and expert publications on innovation in the sector of activity (Besson and Laloum, 2003). It is also necessary to focus on all relevant scientific information (scientific articles and books), technological data, research programs and development projects (Jokobiak, F. 1992 Marcon and Moinet, 2011).

2) CI needs at the macroeconomic level

The CI needs at the macroeconomic level concern the indirect environment: technology (1), policy (2), law (3), economy (4) and social issues (5).

This field is of particular interest to the public service and its definition of policies and strategies, concerning the development of tools and organizational and working methods in the

government and the administration, in order to increase the economic performance of a nation, of a state.

a) CI needs about technology

According to Andrews, K. (1971, 60), technological developments are the elements of the environment of the organization that may have the fastest deployment, and are likely to have the largest impact on the creation or limitation of opportunities. Indirect technological environment of the company refers to the detection of technological developments which lead to a change in the general environment of the company, in his value system. Referring to the work of Bright, JR (1963), Andrews, K. (1971, 61) identified seven major areas where progress is apparent. These are (1) the increase in transport capacity, opening new horizons in reducing costs or necessary transportation time, (2) increasing energy efficiency, changing the intensities and amounts of available energy, (3) increasing the capacity to expand and control life and associated services, such as life extension of perishable goods, control of growth of biological materials, etc. (4) increasing capacity to alter the characteristics of materials, providing new properties or new materials, (5) the extension of human sensory, (6) the growth of physical activities' mechanization, in terms of production, distribution, communication and control, even for industries such as mineral extraction, (7) the growing mechanization of intellectual processes such as problem solving, processing information and process' extension by the use of machines.

b) CI needs about politics

The CI needs concerning politics refer to the government stability, which is likely to affect the security and public tranquility, the fiscal policy of the country of residence or activity and the social protection measures, corruption, risk of theft by states or parallel organizations (Hassid, O. 2005), legislation on intellectual property and protection of private and confidential information, measures of attracting foreign expertise and the rules of foreign trade in force in the relevant state, conditioning border flows of goods and services. (Rouach, D., 2005) (Andrews, K. 1971 Marcon and Moinet, 2011) The objective of those CI needs is to anticipate any changes in the political, legal, economic and social environment, which may influence the activity of the organization. Indeed, changes in political conditions are likely to have an impact at all levels of the business model of the organization, on one or more activities of the component, and on its value system. It is related to the observation of the discussions and debates

which are likely to have an effect, related to the creation of legislative rules, economic or social framing, of the activity. It is therefore an upstream monitoring, sometimes legal, sometimes economic, and sometimes social. It includes monitoring of proposed laws, parliamentary debates, and employer proposals. These elements are upstream because they do not yet constitute positive law.

c) CI needs about law

CI needs concerning law issues focus on the legal environment of the organization, allowing it to exert in accordance with the laws that govern its business. Its purpose is also to anticipate any legislative changes that could affect the activity, including the regional and the European level e.g. that are crucial for all sectors (Besson and Laloum, 2003). This type of CI needs includes all legal and normative acts that affect the business, such as new legislation, laws and decrees, and the case law which has links with the organization's activity or with an activity in the value system of the organization (Besson and Possin, 1996, Rouach, D. 2005). It also focuses on the evolution of labor law and collective agreements governing the sector's activities, and the value system in the country or in countries where the activity is carried out, as well as subcontractors. By observing the rules governing social movements in the industry will include information on how the employees could make claims (Besson and Possin, 1996).

d) CI needs concerning economic issues

CI needs related to economics concerns information about economic and sector specific issues (Rouach, D., 2005, Jakobiak, F., 1992). It focuses on the observation of key players in the value system, prices and trends in the raw materials' prices and resources of the organization, as well as the level of infrastructures such as transport, education, access to suppliers and consumers in a market. Some authors include the general perception of the market, the unemployment rate and the country risk studies for countries in which the organization is active (Besson and Possin, 1996). Andrews, K. (1971, 64) specifies that this type of CI needs must also take into account national and international trends, including the extension of the industrial revolution phenomenon to less developed countries, which are sensitive to quick changes in living standards. The author also stresses the importance of the economic policies of different states, especially in the field of customs barriers. At a more basic level, it concerns the following of the reappraisal of minimum income.

e) CI needs concerning social issues

The CI needs concerning social issues include different factors: demographic trends in the relevant regions, changes in cultural and societal modes, as well as those related to consumer trends. Social factors are indeed likely to affect directly the organization's human resources and consumer segments (Rouach, D. 2005). The effects of social factors can be felt at every step of the organization's value chain likely to involve human resources, both at the organization's level as well as at that of partners and other entities in its value system. The monitoring of sociological and environmental changes includes film critics, studies and press articles on consumer tastes, articles on fashion, leisure, and gastronomy (Besson and Possin, 1996), expenditure patterns (housing, health, leisure), habitat (urban, etc.) (Osterwalder and Pigneur, 2010). It also includes the impact of the activity on the environment, and the management of natural

and technological risks, which is, according to Besson and Laloum (2003), more relevant in an industrial context. Andrews, K. (1971) outlines five major trends in social change: (1) work mode changes and leisure, (2) minority groups looking for the recall of old grievances or for inequality, (3) change of values moving from self-interest to the good for society, (4) consideration of the environment at the expense of efficiency, (5) growing interest in education.

C) A synthesized model that supports managers to define their CI needs

In order to synthesize those different and complementary approaches on a microeconomic respectively a macroeconomic level, we designed the following model (Fig. 10). We also take into account different sectors and industries.

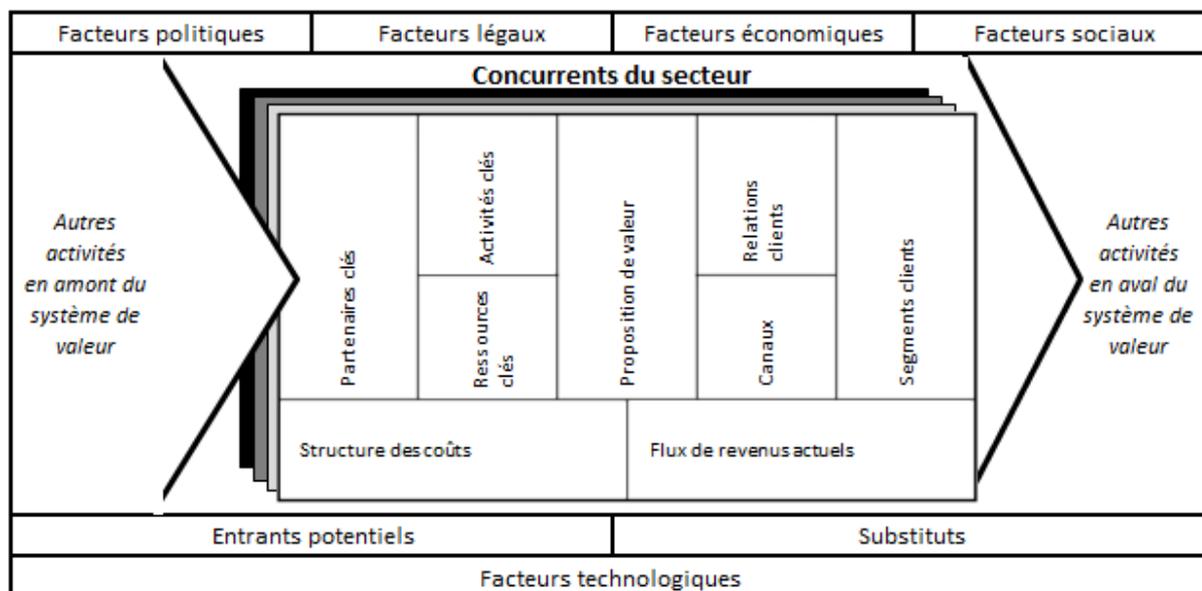


Fig.10: Model of Definition of CI needs. Source: Author contribution

The advantage of this model is to bring together internal and external elements of the organization: its business model and its value chain, microeconomic forces that can exert pressure on its business, able to support an analysis of its industry and its value system, as well as macroeconomic factors derived from the approach of Andrews, K. (1971).

by scanning the current and the potential external factors as well as the opportunities and threats related to internal components. Hence, the specificity of the CI needs lies in a dual approach combining monitoring threats or risks related to the existing, and detection of opportunities and threats related to the discovery of new elements likely to influence the company or the organization.

Moreover, such as Andrews, K. (1971), Clerc, P. (1995; cited by Carayon, B., 2003), and Fleischer and Bensoussan (2003) recommend, monitoring activities should identify opportunities and threats

To represent this dual position of the CI needs, we designed the following matrix in order to estimate the impact of each CI need. (Fig. 21)

Axe de veille		Opportunité	Menace
<i>Détail des éléments à surveiller</i>	Facteur actuel		
	Facteur potentiel		

Fig. 11: Alert Matrix, or Strategic Matrix of CI Needs. Source: Author contribution

This matrix can be used to connect each element of the model of definition of CI needs (Fig. 10), including all internal and external elements of the company or organization. With this approach,

managers have the ability to estimate the impact of information related to external elements, resulting from the use of different types of CI needs, on the internal elements of the business.

This strategic matrix of CI needs supports strategic thinking within the business intelligence processes in the company or organization, attributes quality to the information (opportunity or threat) and analyzes it in terms of current or potential impacts on the business model of the company or organization.

To detect weak signals depending on CI needs, the following matrix (Fig. 12) allows eliciting key issues, to point out the relevant topics.

Matrice d'alerte stratégique de veille		Entreprise de référence 1		Concurrent 1		Partenaire 1		Autres facteurs externes ...	
		Opportunité	Menace	Opportunité	Menace	Opportunité	Menace	Opportunité	Menace
Proposition de valeur	Facteur actuel								
	Facteur potentiel								
Ressources clés	Facteur actuel								
	Facteur potentiel								
Autres éléments internes...	Facteur actuel								
	Facteur potentiel								

Fig. 12: Alert Matrix, or Strategic Matrix of CI Needs (extended version). Source: Author contribution

External elements of the strategic matrix of CI needs are numbered according to the amount of identified relevant elements. This matrix is complementary to the model of definition of the CI needs (Fig. 10), in order to deepen the thinking on CI needs.

The use of the model of definition of the CI needs is illustrated in the following figures (Fig.13-18), as a support for the presentation of the different types of CI needs.

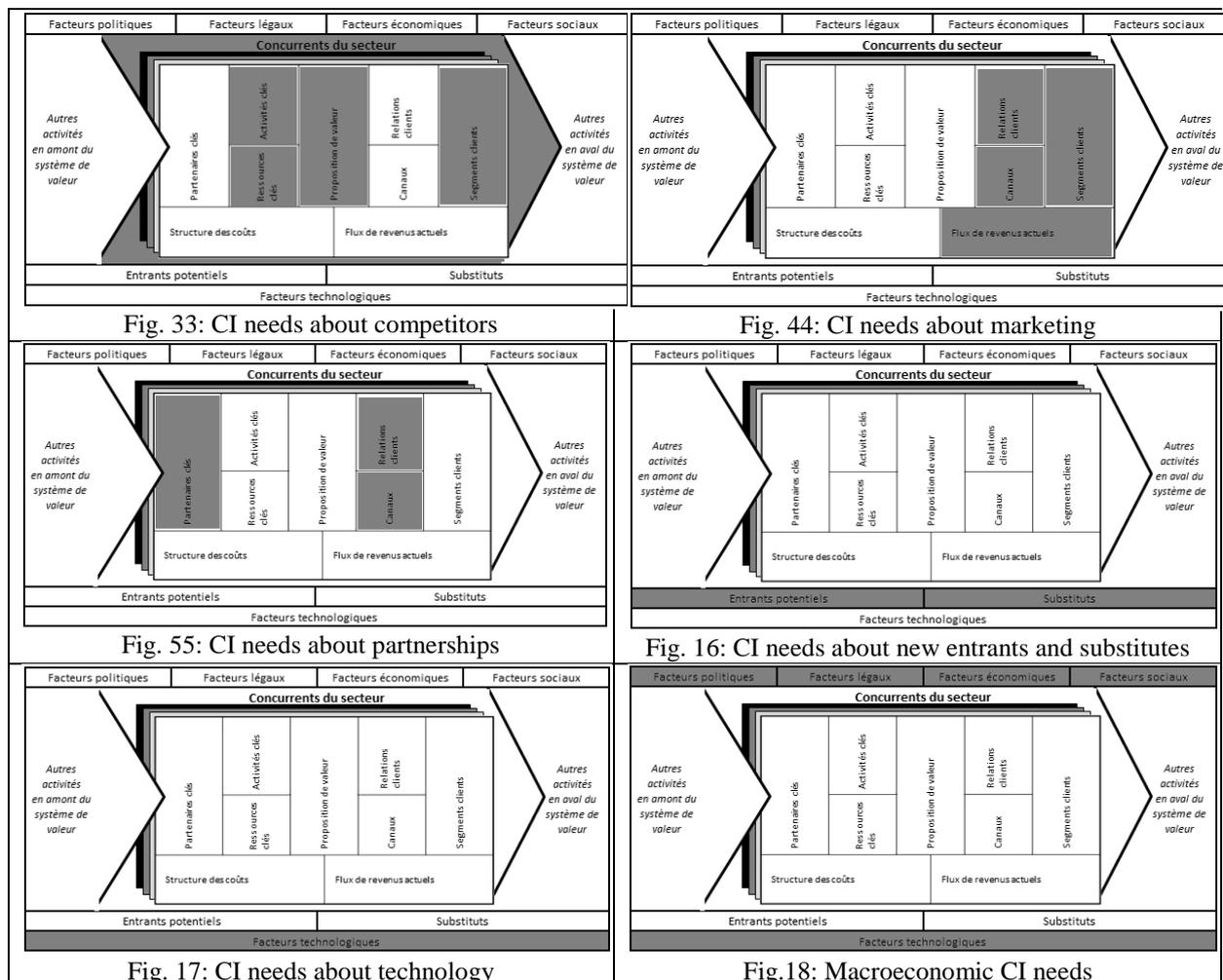


Fig. 13-18: Source (author's contribution)

5. Conclusion

Based on our literature review and analysis of proposed methods able to define the CI needs, we categorized the CI needs, identified several types of CI needs at the microeconomic and at the macroeconomic levels, and synthesized a model able to support managers in the definition of their CI needs.

We postulate that this approach could accompany and help managers in the definition of their CI needs. Furthermore it can help them to identify opportunities and threats, as well as to foster creativity and innovation.

As we were not able to test this model with a sufficient panel of managers during our current research, this will be part of our further researches. It would also be very interesting to test it with several types of organizations.

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