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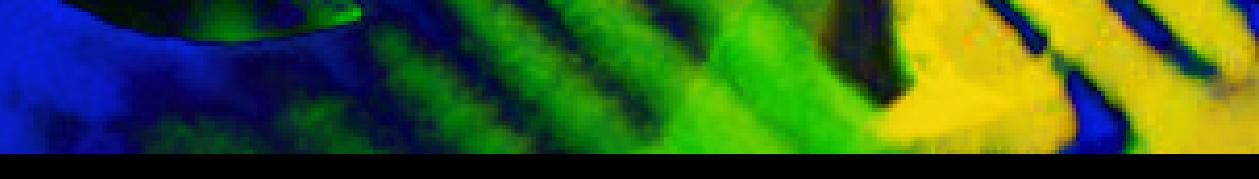
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READINGBOOK

Mapping & Anticipating the Competitive Landscape

Alessandro Comai & Joaquín Tena Millán

EMECOM Ediciones



READINGBOOK

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Anticipation is now an essential key for strategy!

New disruptive business models, innovation, geopolitical forces, emerging markets all require constant attention and anticipation if a firm is to sustain its competitive position.

Mapping and Anticipating the Competitive Landscape is a book in which a new perspective is introduced. The book helps identify which actors are sources of the critical changes in the environment having a significant impact on the organization. The anticipation of these changes means that the right action/decision can be taken in the right time frame.

The model proposed in this book is practice-oriented. We consider that it can be used by private and public organizations for strategic purposes. It becomes a strategic weapon once the organization has included it in the strategic planning process. We therefore invite you, not only to read this text in detail, but also to procure success for your organization using the tool presented herein!

Published by:
EMECOM *Ediciones*

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ISBN-13 978-84-935178-7-8

ISBN-10 84-935178-7-9

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National Book Catalogue Number:
ISBN-10 84-935178-7-9
ISBN-13 978-84-935178-7-8

Depósito Legal: B-52407-2006

Printed in Spain

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*To my young son Axel who allowed me to
sacrifice some of our precious time together.*

Alessandro Comai

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ACKNOWLEDGEMENTS

We would like to thank the companies that have supported this work by allowing us to use their case studies and suggestions. We would also like to thank all the people who helped us in developing and writing this book.

INTRODUCTION

The dependence of organizations on their environment for ongoing success justifies all the attention and effort that goes into monitoring that environment. The resources and techniques used for this task can be called collectively strategic environmental analysis supported by competitive intelligence (CI).

This book is aimed at experts as well as a wider audience interested in a practical approach to company management. Many of our readers are already aware, therefore, when reading these pages that what is being dealt with here is the mapping and anticipation of the competitive environment using a new analysis tool. Strategic environmental analysis is a tool for ascertaining what is happening in the surroundings relevant to the firm. Its main objective is to help anticipate the future and encourage the adoption of decisions which are most likely to lead to success. It is mainly used by firms in competitive environments, but also by industrial or trade institutions supporting these firms and non-profit organizations. Even governments are introducing promotional measures in this area intent on improving the competitiveness of the economy for which they are responsible. The reader will find examples of all these situations in the following chapters. Like all the other corporate techniques and practices introduced over the years into the activities of organizations, the justification for competitive intelligence and strategic analysis is that the tasks to be managed are becoming increasingly complex. With all the changes and risks occurring in the firm's external reality, environment monitoring has now become an activity which no organization can do without.

The changes occurring outside the firm and involving opportunity and risk are many. An abridged list of these might include the following: the transformation of society as a whole, with the countless immediate and long-term repercussions this would have on a specific organization, scientific progress and technological innovation, the development of global or local economies relevant to the firm, the actions and reactions of competitors and other economic actors, the ecological implications

of the firm's activity together with the regulations and innovation which are currently giving environmental issues a special kind of dynamism and, last, but certainly not least, the political changes, in a world of nation states, very often combined at suprastate and local level (within each state), with the relevant repercussions and trends that are so often self-contradictory and at loggerheads with the firm.

Of all the actors playing a role in the environment relevant to the firm, it is the competitors and governments which should be spotlighted as being two necessary and permanent axes. Other relevant interest groups which can also heavily influence the achievements of the firm are clients, suppliers, employees, trade unions, consumer defense groups, ecologists and those affected by the initiatives of the firm in general. Although this is not a comprehensive list, the interest groups mentioned form the terrain on which competitive intelligence functions.

Technology has a decisive impact on certain activities and sectors, which means that scientific and technical progress becomes essential to the success of the firm. Technological observation assembles together all the activities and techniques which must be used in order to carry out this monitoring. It includes aspects such as evaluation of the impact of technology in resolving problems and meeting the current or potential demand for products and services, definition of the rhythm and scope of the innovation which could occur, verification of the development of competitor achievements. This activity also endeavors to anticipate the risks and potential benefits of implementing a scientific-based innovation. Nevertheless, verifying not just the technological but also the social and political impact of the progress achieved or to be achieved (in biotechnology or health sciences, for instance) would be part of the wider, CI environment.

Both trends – market and technology – are relevant to the management of a firm and underline its rising importance and the increasing recognition that the directors of a firm attribute to them. On the one hand, the members of the board of directors of a firm show great interest in knowing more about the environment and having information which allows them to anticipate it. On the other hand, the emphasis on corporate social responsibility and the role of interest groups also provides an incentive to the monitoring and mapping of the competitive landscape.

Why a book about environment analysis?

Anticipation is now an essential key for strategy! New disruptive business models, innovation, emerging markets all require constant attention and anticipation if a firm is to sustain its competitive position.

Mapping and Anticipating the Competitive Landscape is a book in which a new perspective is introduced. The book helps identify which actors are sources of the critical changes in the environment having a significant impact on the organization. The anticipation of these changes means that the right action/decision can be taken in the right time frame.

There are several reasons behind the writing of this book:

- The environment is changing faster than ever.
- Global markets are shifting sooner.
- New emerging markets are now threatening other established markets.
- Markets are prompting the creation of new disruption models.
- The increase in global actors makes it harder to concentrate on just a few actors.
- New technology replaces traditional operations processes.
- Shifting of global regulations.
- New geopolitical forces.
- Increase in market uncertainties.

We consider, therefore, that additional resources should be invested to track and anticipate trends and changes that have a significant impact on the business of a particular organization.

Contents of our book

The book consists of the following seven key chapters:

1. The first chapter discusses the two paradigms applied in strategic management: the organization and the environment.
2. The second chapter introduces the practice of competitive intelligence and its different perspectives and dimensions. Particular attention is given in this chapter to the relationship

- between the strategic decision-making process and CI.
- 3. Chapter three explores the environment using actors and trends. These two components of the model are essential elements in the mapping and anticipation of the competitive landscape.
 - 4. This fourth chapter is concerned with identifying the possible relationship between the actors. It shows how actors contribute to an industry trend and vice versa.
 - 5. This central part of the book presents several strategic analysis models which serve as the foundations for the competitive landscape map.
 - 6. Chapter six proposes several sources which may be useful for tapping information needs. A scheme for associating them to the competitive landscape is also suggested.
 - 7. This chapter applies the concepts discussed in the previous chapters and turns the competitive landscape model into an anticipation framework. The model will serve as a base onto which several competitive early warning processes can be built and structured.

Some final considerations

Although environmental scanning has been discussed in the management field since the sixties, none of the existing works explain how environmental scanning is applied to the key players/actors in the environment or exactly how these actors play a main role in anticipating the environment. We consider, therefore, that this work may be a first step in an attempt to bridge this gap and establish some points for further discussion.

Moreover, the model proposed in this book is practice-oriented. We consider that it can be used by private and public organizations for strategic purposes. It becomes a strategic weapon once the organization has included it in the strategic planning process. We therefore invite you, not only to read this text in detail, but also to procure success for your organization using the tool presented herein!

CHAPTER 1

ENVIRONMENTAL ANALYSIS: A VANISHED PRACTICE?

"It is not the strongest of the species that survive, nor the most intelligent, it is the one that is most adaptable to change" Charles Darwin

1.1 The two paradigms

Academic contributions in the strategic field have given rise to two contrasting paradigms which can be summarized in the terms internal and external corporate vision.

The former, internal vision is represented by the school based on internal resources, or, in other words a resource-based view. The resource-based view (RBV) considers that all kinds of stable internal tangible and intangible assets are sources for an organization's strategy and performance (Penrose, 1957; Daft, 1989; Wernerfelt, 1984; Barney, 1991 and 1997; Barney, Wright and Ketchen, 2001). The RBV considers that a firm will sustain its competitive advantage through the right choices on internal resources (Barney, 1991; Grant, 1991) and the external environment will play a minor role.

Barney (1991) discussed four empirical indicators of stable resources which allow competitive advantage to be sustained: value, rareness, imperfect imitability and non-substitutability. These characteristics can classify the internal resources of a firm as unique and therefore a possible source of differentiation and competitive advantage. According to APQC (2003, p.25-26) "the resource-based view of an organization emphasizes the uniqueness of each organization's strategy" and therefore, internal resources would represent the main source of profitability.

The resource-based theory in strategic management was initially suggested by Wernerfelt (1984), who saw the connection between firm

resources and competitive advantage. He defined a resource as "anything which could be thought of as a strength or weakness of a given firm". An extension of the RBV, based on the unique idea of managing resources, can be seen with Grant (1991, p.136), who introduced the notion of capabilities. He argued that "the firm is essentially a pool of resources and capabilities, and these resources and capabilities are the primary determinants of its strategy" (Grant, 1991; p.133).

On the other hand, the external resources school bases its argument on the idea that the relationship with the environment is the main source from which an organization can achieve results. The resource dependency perspective or theory (RDT) indicates how organizations depend on the external environment for the resources they need in order to succeed or survive. There is an external dependency. This perspective is the main one adopted by scholars belonging to the resource dependency school such as Pfeffer (1972), Pfeffer and Salancik (1978), Boyd (1990), Daily and Dalton, (1994a, 1994b), Gales & Kesner (1994) or Hillman, *et al.* (2000). RDT also discussed the possible reduction of external dependency of the organization. How a firm decreases its dependency on the external environment may be achieved in several ways. As resources are produced by organizations, collaboration and vertical integration may be a strategy for taking over the limited number of resources available in the environment. RDT discusses the potential role of the organization in getting to understand the external environment. Pfeffer and Salancik, (2001, p.62-63) discussed the fact that there are three environmental levels. The first two of these describe the system of organizing players and transactions whilst the third type of environment is the kind of environment perceived by managers. This discussion introduces management perception and the actions that are taken under these constraints. "Important elements of the environment may be invisible to organizational decision makers, and hence, may not be considered when they are determining organizational action" (*ibid*, p.62).

1.2 The influence of the two paradigms in the decision making process

As we can see, the two perspectives are not mutually exclusive. According to Pfeffer and Salancik (1978, p.258) "to survive, organizations require

resources". Indeed, both are used by decision makers in order to achieve a superior competitive position. Pfeffer and Salancik (1978) say that if decision makers fail to understand the changes in their environment, they may also fail to adapt the organization to the new changes. Whilst internal resources may be helpful in defining strategic direction and applying strategies, external resources may influence decision makers in their use of internal resources. This double dependency allows us to introduce the idea that information is an important factor for both internal and external focus. Without a good information system, resources will be less effective and less profitable. Internal and external resources should be well-balanced, according to the strategic priorities of the firm.

In knowledge- and information-intensive environments, the provision of external resources creates a certain dependency which will be more significant in those companies with a lack of internal sources. Ghoshal (1985, p.30) considers that the high rate of scanning process adoption is due to "the increasing awareness of the importance of the organizational-environmental interdependencies".

On the other hand, the RBV provides an interesting perspective on how organizational resources should be used as a source of knowledge. CI managers are an important ingredient in company resources. The more CI specialists collaborate with decision makers, the more information will be converted into actionable intelligence (APQC, 2003). The way in which decisions are taken will significantly affect the competitive performance of the organization.

1.3 The Need to monitor and analyze the environment

"Next to knowing all about your own business, the best thing to know is all about the other fellow's business." John D. Rockefeller

This quote by Rockefeller allows us to introduce the need, even if it is not perceived or appreciated as such, for tracking the various businesses in which a company has invested. "Environmental orientation is the recognition by managers of the importance of environmental issues facing their firms, and environmental strategy is the extent to which environmental issues are integrated with a firm's strategic plans." (Banerjee, et al. 2003). Knowledge of the key players in the environment

can be very important for the strategic position of a firm. For instance, ignoring signs of change in a competitor "is like ignoring competitors altogether" (Porter, 1980; p.87).

The environment, such as industry or markets, has been analyzed either informally or formally. An analysis of the external environment can be carried out at the corporate or business-unit level. The former offers a more general and global perspective on the position of the organization whilst the business-unit level focuses on the potential markets open to each of the different business lines. To distinguish the two, some companies may use the concept of industry and market. For instance, Kotler (1997, p.230) defines an industry as "a group of firms that offer a product or class of products that are close substitutes for each other". He also argues that the industry approach looks for companies making similar products. In contrast, the market approach studies companies which satisfy the same or similar customer needs.

Daft and colleagues (1988) proposed that the task environment would create greater perceived strategic uncertainty for top executives than industries in the general environment because the task environment changed more rapidly, was more complex, and was perceived as more important than the general environment. Organizations have to face several difficulties when analysing the environment (Johnson and Scholes, 2001; p.87-88). For instance, decision-maker interpretation plays a major role in understanding which main challengers, for instance, will be present a couple of years from now. Moreover, the environment can have several relevant conditions that make the interpretation of it more difficult. The two conditions that have been largely discussed are indeed complexity and dynamism. The first one refers to the difficulty of understanding the environment and the second one refers to the changes. If these conditions reach the higher level of change, then organizations face the issue of understanding future outcomes in the sector (see Figure 1.1).

The case of Yahoo is a good example of how a leading competitive position can be sustained through a period of intense turbulence and uncertainty as the internet industry has suffered. In 1999, Tim Koogle, the director of Yahoo said: "as a company, we're heavily externally focused. We maintain a level of paranoia about the environment that is pretty healthy, and we seldom actually get surprised. If anything tectonic is going on (we) get word of it before it occurs"¹. The forecasting of how both the general and the specific environment will develop is an explicit or implicit need for the firm. The improvement of this process doubtlessly

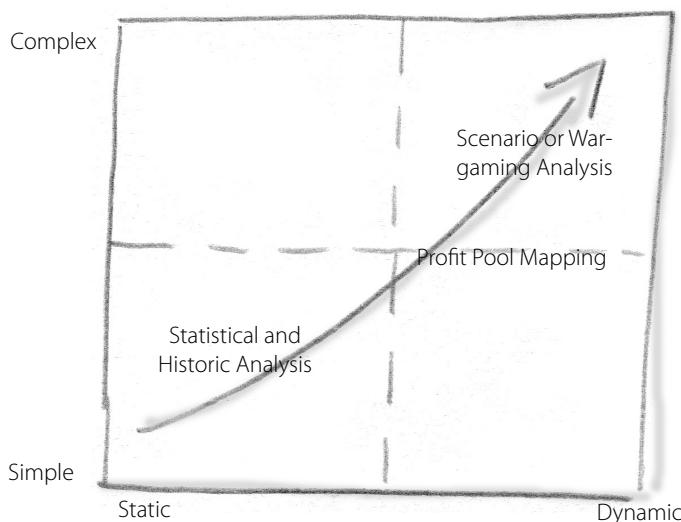


Figure 1.1 - The four status of an Environment.
Adapted from Johnson and Scholes (2001, p.91).

allows the firm greater "control" over external agents and influences the behavior of an organization.

The book will examine how this process can benefit from the application of the proposed model and the flow of information which keeps the firm alert.

1.4 Models of Business Environment Analysis

At present, there are several models which can be applied to scan or analyze the environment. A review of literature suggests that there are two appraisals used in strategic management when assessing an organization: the external and the internal (see for instance Mintzberg, *et al.* 1998; Bowman and Asch, 1987; p.9). The external refers to the industry or sector while the internal refers to the organization itself. Usually the organization and the environment are studied and compared together to assess the strategic position of the company with regards to the industry and the competitors. Moreover, the organization and the environment are not isolated and therefore interact together. Freeman (1984, p.11)

states that external changes affect the nature of the company and also therefore affect its ability to respond to its own internal changes. Freeman (1984, p.13) considers that in order to reduce uncertainty and disagreement, there should be some theories or concepts which can provide firm answers to events. Xu and Kaye (1995, p.23) consider the relationship between internal and external information to be of enormous importance for generating value. "Developing a business environment-scanning system ... is a systematic process that adds value, not only by scanning the environment, generating internal data, gathering these disparate data together, but also by adding meaning to the data, and presenting the information in an acceptable way to managers." Internal resources are developed in order to deal with external events. More specifically, "economic strategy will be viewed as the match between qualification and opportunity which relates a firm to its environment" (Andrew, 1971).

If our focus is the environment, it is possible to classify the external elements based on the type of interaction that the firms or organization has within the environment (Worthington and Britton, 1994, p.5; Fleisher and Bensoussan, 2003, p.271). Laudon and Laudon (2001, p.72) consider that "organization and environments have a reciprocal relationship". The task environment is formed by suppliers, customers or competitors, for instance, who interact together. In contrast, the general environment is created by indirect interaction with the organization. The two focuses are also associated to the timeframe of the decision-making process. For instance, the task environment seems to involve short decisions, while the general environment influences long-term decisions.

Several theoretical perspectives have studied the relationship between the organization and the environment². Firstly, one of the most influential perspectives is the design school which for Mintzberg, *et al.* (1998, p.24) is "without question the most influential view of the strategy-formulation process". This approach regards strategy development as the match of the internal situation of the organization to the external situation of the environment. The strategy of the organization is designed to achieve the best possible fit. In other words, the external and the internal appraisal serve to select the best strategy (Bowman and Asch, 1987; p.8) and therefore adapt the company to the environment. Figure 1.2 shows a model in which two appraisals are developed to obtain the best possible position for an organization with regards to the environment.

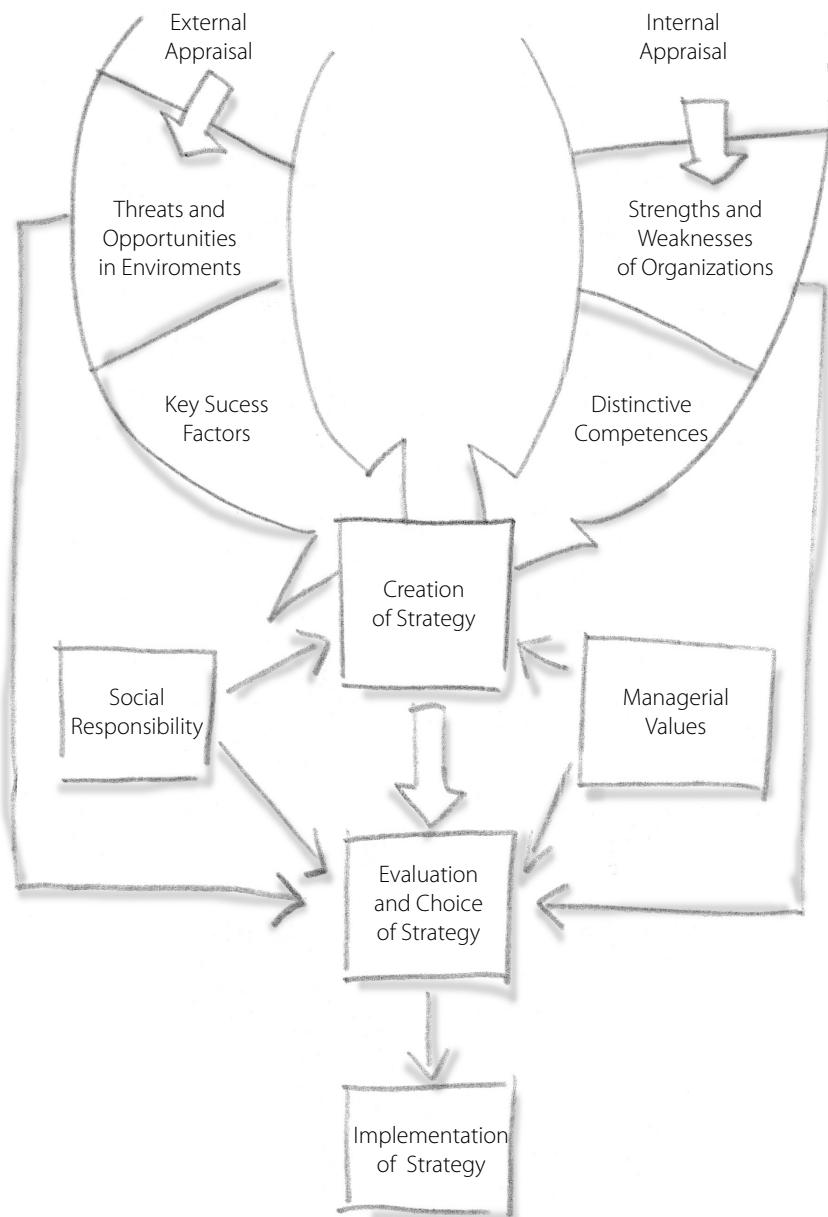


Figure 1.2 - The design school. Source: Mintzberg, et al. (1998, p.26).

On the other hand, the most influential and recognized author of industrial economics is Michael Porter (1980) who proposed a systematic process for analyzing industries and competitors. Lenz and Engledow (1986) consider that Porter, "is one of the few industrial economists to address the administrative problem of how organizations should gather information about their environments". The work proposed by Porter focused principally on the direct environment or task environment. For instance, the five competitive-forces model helps to define industry profitability. This model accepts that company leaders may be able to shape the structure and thus have a certain influence (Porter, 1985; p.8). Ansoff (1980) also discussed the match between the internal and the external environment. He emphasised that the internal trend could suggest strengths and weaknesses whilst external events could suggest

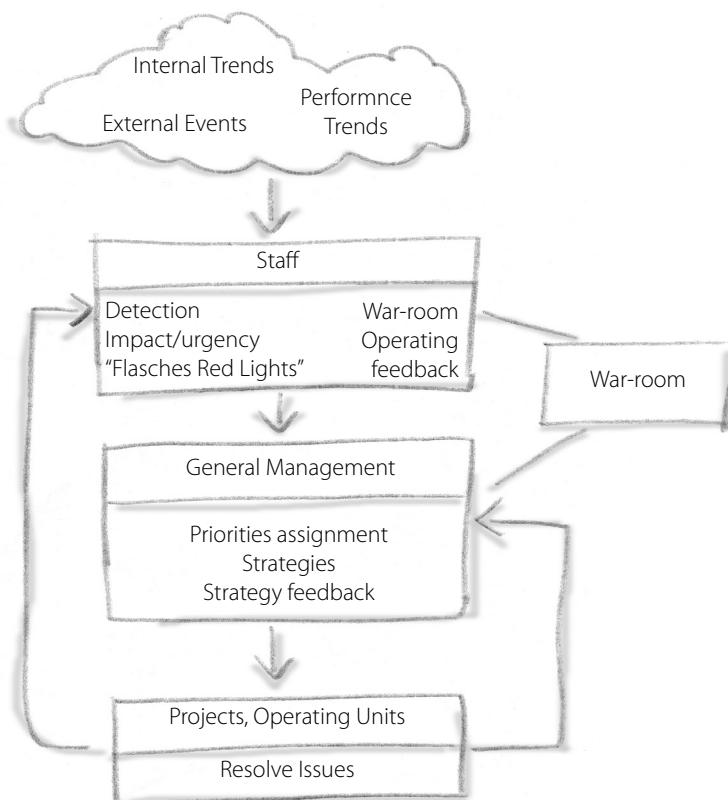


Figure 1.3 - Strategic Issues Management.
Source: Ansoff (1980).

opportunities and threats. The interesting point here is that the two environments are not seen as static pictures but rather as dynamic with changes. This particular emphasis will result in a slightly different model to the one that has been proposed up until now (see Figure 1.3).

With regard to *environmental scanning*, Aguilar (1967) may be the most influential contributor in this area of study. The author, who described the environmental scanning process of the organization,

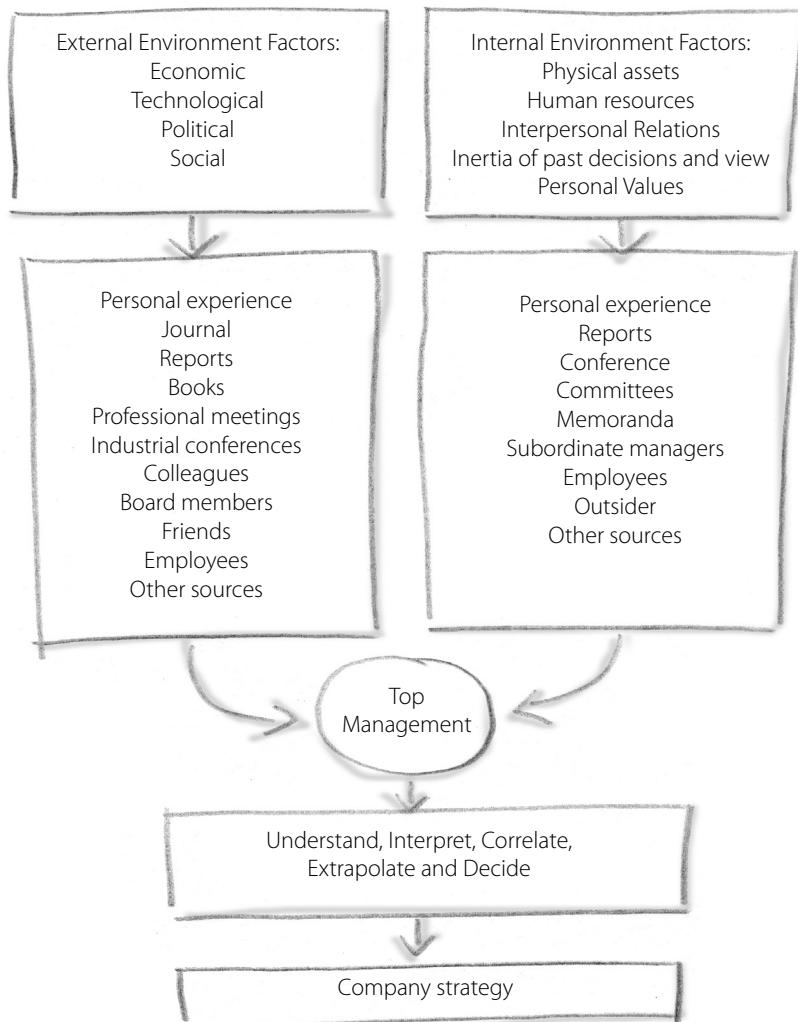


Figure 1.4 - Scanning the Environment.

Source: Aguilar (1967, p.11).

identified several of the external and internal factors as being in dire need of attention. He also associated several sources for each group in order to allow an organization to observe and report to its top management. Figure 1.4 shows the model.

Another important contribution was made by Freeman (1984, p.46) who coined the *Stakeholder Theory* and defined the stakeholder as "any group or individual who can affect, or is affected by the achievements of a corporation's purpose". This group includes "employees, customers, suppliers, stakeholders, financial, environmentalist, government bodies and any other groups who can help or hurt the corporation". Figure 1.5 shows the various stakeholders that have been suggested by Freeman and which can be included in any strategic analysis.

This definition includes the competitors as part of the "stakeholders" of an organization. The pressure of rivalry in the market place creates a mutual dependency (Porter, 1980; p.17). Banerjee, *et al.* (2003) consider that "External environmental orientation refers to the aspects of a firm's environmental orientation that affect its relationships with external constituencies, such as financial or community stake-

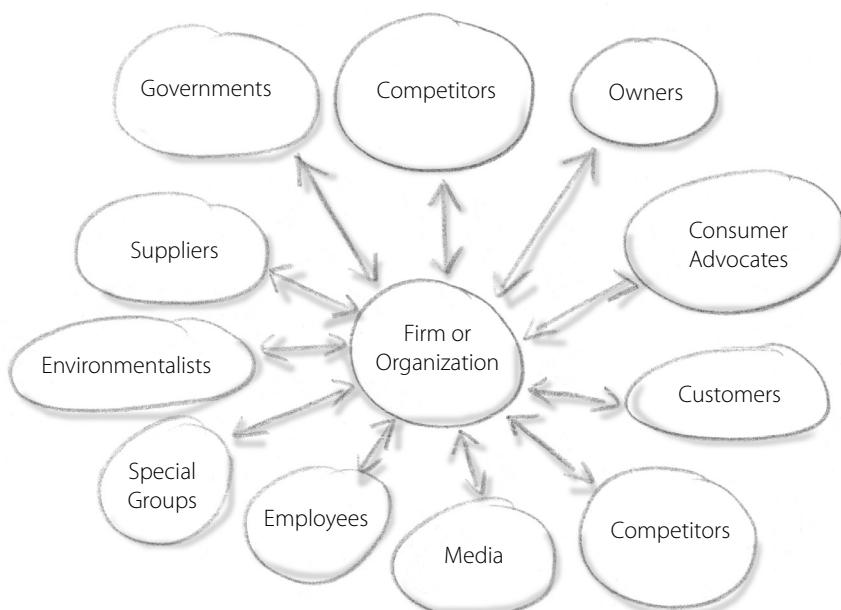


Figure 1.5 - The stakeholders of a firm.
Adapted from Freeman (1984, p.25).

holders" On the other hand, Donaldson and Preston (1995) identify eight main Stakeholder groups as: Governments, Investors, Suppliers, Communities, Political groups, Employees, Customers and Trade associations. Donaldson and Preston (1995, p.70-71) defined four areas of interest in the stakeholder theory.

- Descriptive: study of the external context and the position of the organization in this context. Reference is made to how directors pay attention to the management of the entire stakeholder group and of its interests (Donaldson and Preston, 1995; p.75).
- Instrumental or speculative: studies the relationship which may exist between the stakeholders of a firm and the achievements of its objectives.
- Normative: studies the behavior of the company from a philosophical or ethical viewpoint. Freeman (1984, p.48) argues that this model is "prescriptive" because it suggests several rational actions.

Donaldson and Preston (1995, p.74) consider that these three areas are interrelated and that there can be a hierarchy between them.

On the other hand, the *organization theory* has also dedicated some time to the external environment of a firm. Freeman (1984, p.58) identified the organization theory as the foundation for studying inter-organizational relationships. In this area, an interesting contribution was made by Daft (1989; p.46), who suggests the 10 environmental domains an organization should focus on (see Table 1.1). The study of the possible relationships existing between a company and external players or their stakeholders, defined as such by Freeman (1984), can link the study of the environment with the organization theory. These sectors then combine factors and players together independently so that these elements have a positive, neutral or negative effect on the organization strategy. The study of the possible relationships existing between a firm and the external players or, their interest group, as defined by Freeman (1984), can link the study of the environment with the organization theory.

Another interesting area of discussion is the *non-market factors* which influence the relationship between the organization and the environment. This idea was introduced by Baron (1995) who suggested that a sector may have other factors to focus on which provide tools and strategies to help the firm achieve its objectives. These factors are less visible and are not directly related to the market in which a firm

Table 1.1 - The Ten Domains. Adapted from Daft (1987, p.46).	
1. Industry Sector	Competitors, Industry size / characteristics and Related Industries.
2. Raw Materials Sector	Suppliers, manufactures and Real State.
3. Human Resources Sector	Labour Market, Employment Agencies, University, Training Schools, Employees in other Companies and Unionization.
4. Financial Resources Sector	Stock market, Banks, Savings / Loans and Private Investors.
5. Market Sector	Customers, Clients, Potentials user of Products and services.
6. Technology Sector	Technology of Production, Science, research and New materials.
7. Economic Conditions Sector	Recession, Unemployment rate, Inflation rate, Rate of Investment and Economics Growth.
8. Government sector	City State federal, Laws and regulations, Taxes, Services, Count System and Political Processes.
9. Socio Cultural Sectors	Age, values, Beliefs, Education, Religion, Work Ethic, Urban vs Rural and Birth rate.
10. Institutional Sector	Competition from and Acquisitions by Foreign firms, Entry into Overseas Markets, Foreign customers, Regulations and Exchange rates.

operates. Baron (1995) considers this strategy weapon to be a non-market strategy. "The non-market environment consists of the social, political, and legal arrangements that structure the firm's interaction outside of, and in conjunction with, markets".

The use of a non-market strategy may be an additional focus for the organization's intelligence function. The monitoring, for instance, of

competitor lobbies for major contracts (Besson and Possin, 2006) or to slightly alter government regulations is one of the main activities of the intelligence units. These forces, as described by Baron, are objects which should probably be systematically monitored.

1.5 Summing up

Both internal and external focuses have played an important role in organizations. Two paradigms can be identified in the various models described above. However, it is possible to observe that the models fall into two groups which put forward two quite different perspectives in their description of the external environment. On the one hand, we were able to appreciate the stakeholder or organization theory supporting the idea that the organization interacts with its environments and the different players as an open system. On the other hand, other strategic management perspectives give less consideration to the relationship and focus more on how the changing conditions of an environment may affect company behavior and results.

Moreover, the traditional perspective makes clear differences between the task and the general environment. According to Porter (1980; xviii) these models illustrate the broadest level of competitive strategy by involving key factors. In the former, players and factors are clearly differentiated, whilst the other perspective does not make this distinction and considers the environment to be a group of agents interacting together. This concept will be discussed throughout the book and in chapter 3 in particular.

Notes

1. Case Study written by Girotto, J. and J. Rivkin (1999). *Yahoo! Business on Internet Time*. Harvard Business School Publishing.
2. One way to approach the study of the interrelationships between the organization and the environment is to review the main management schools of thought – for example according to Mintzberg et al. (1998) “The Strategic Safari” – and identify how each deals with the business environment. At first sight the following schools focus on the internal aspects of management: Design, Planning, Cognitive, Learning, Power, Cultural and Configuration. The ones focusing on the environment are: Positioning, Entrepreneurial, and Environmental. The last group seems to be in the minority!

CHAPTER 2

COMPETITIVE INTELLIGENCE AND THE DECISION-MAKING PROCESS

There has always been a need for information when making decisions relating to company strategy, either with the aim of selling an existing product or service or in order to be able to provide superior technical performance. The way in which this need has been met and the organizational means assigned to the task, have varied enormously over time. The transformation of competition between countries as well as companies after the Second World War gave rise to increasing amounts of intelligence activity in the economic and technological field. CI developed simultaneously in several countries. This gave rise to a number of different meanings and interpretations for/of this field of activity. The different concepts and meanings include different approaches to and degrees or intensities of the practice of CI.

In order to make the right competitive choices firms require selected actionable information, called "intelligence", as an input to the strategic decision-making process (Porter, 1980, p.72; Sammon, *et al.* 1984). However, information or intelligence can have several forms and the degree to which it is used in organizations may vary significantly. This chapter will explore these two topics and discuss the relationship between them.

2.1 What is Competitive Intelligence?

Competitive intelligence or environmental scanning is variously defined.

- "A formalized, yet continuously evolving process by which the management team assesses the evolution of its industry and the capabilities and behavior of its current and potential competitors to assist in maintaining or developing a competitive advantage" (Prescott and Gibbons, 1993).
- "Competitive Intelligence is the use of public sources to develop information on competition, competitors and the market environment" (Vella and McGonagle, 1988; p. 1).
- "Intelligence is the analytical process that transforms disaggregated competitor data into relevant accurate and usable strategic knowledge about competitor's position, performance capabilities and intentions" (Sammon, et al. 1984; p.91).
- "The information process through which companies prospectively monitor their environment in order to create opportunities and to reduce their uncertainty" (Lesca, 1994).
- "A competitor information system is a process of gathering competitor data from various sources both inside and outside the organization, transforming them into timely, pertinent and meaningful information and holding it within a well structured system. This competitor information can then be readily available as an aid to strategic decision making" (Kotler, 1997).

Taking into account all the different approaches suggested, it is important to stress, that CI, as we interpret it in this text, is deliberate and formal. It is carried out with continuity and is widely recognized within the organization which practices it. There is no doubt that each of these definitions has its own viewpoint, although they may all fall into one general definition. All of the above prompts us to suggest that:

Competitive Intelligence (CI) is a systematic process, recognized and accepted throughout the organization, for the search, selection, analysis and distribution of information about the environment.

CI is part of the preparation and implementation of the strategy as well as of the specific actions carried out by the business units,

functional areas and departments within the firm and its objective is to contribute tangible competitive advantages in order to achieve the most favorable impact possible on the progress of the organization.

All intelligence activity uses a process called the intelligence cycle which incorporates several key steps. This project-based process can be shown with the business cycle suggested by Cleland and King in 1975.

2.2 Types of intelligence

Perhaps one of the most difficult tasks when establishing a CI program is to define the intelligence needs based on the key priorities of a firm. A number of interpretations can be found such as:

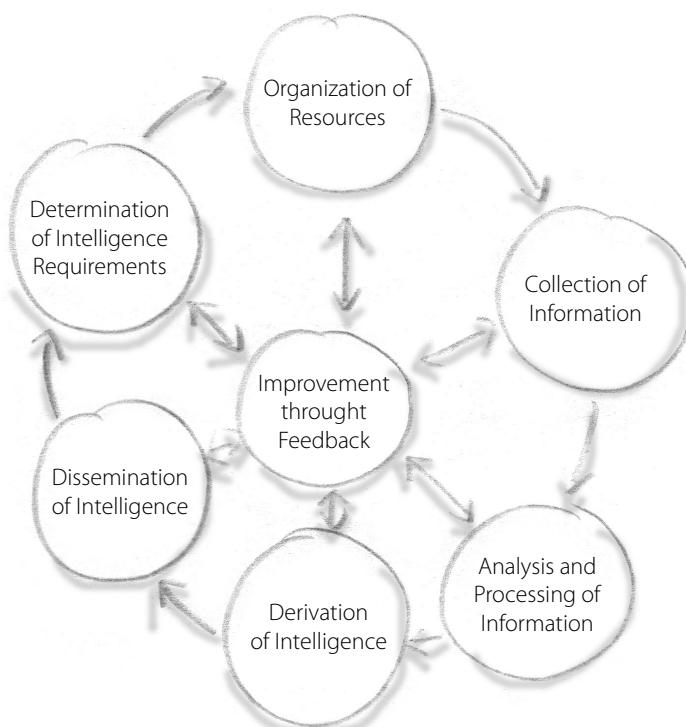


Figure 2.1 - Business or Competitive Intelligence Cycle.
Source: Cleland and King (1975).

- Non-oriented observation or search with the aim of obtaining a general knowledge of the environment.
- Specific research or oriented search which aims to obtain information relevant to a decision or specific problem,
- Monitoring of the environment as a non-oriented search responding to the idea “listen” or passive observance in which CI plays the role of monitor.
- Exploration or oriented search characterized by active observation, often with the prior specification of an issue or decision for which the monitoring needs to be carried out and, if appropriate, anticipation of the consequences - a new regulation planned by a government or an acquisition or merger, for example.
- Competitor Intelligence: this activity focuses primarily on gathering intelligence from the direct or indirect competition (Porter, 1985; Fuld, 1988 and 1995; Hussey and Jenster, 1999; Gordon, 2002). For instance, “Kodak learnt through competitive intelligence that Fuji was planning a new camera in America and launched Kodak’s competing model just one day before Fuji came out with its version”¹.
- Competitive intelligence, which focused originally on the markets and their players, especially clients and competitors, in order to then extend the perspective. Historically, CI has replaced the term Business Intelligence (Sammon, *et al.*, 1984; Gilad and Gilad, 1985).
- Business Intelligence was used in the late 80s by Sammon *et al.* (1984) but is still in use in Nordic countries such as Finland. The Finnish perspective includes not only external but also internal information. This perspective sustains the idea that in order to create an appropriate intelligence product, both types of information must be used.
- Economic intelligence, which includes the intelligence activities of all the economic actors - including government actors. This type of intelligence, which can include sources of any kind, is very common in France (Bessons and Possin, 2005). Economic intelligence is mostly used in public policies. For instance, Lorraine², a county in France, identified 6 key industries and/or clusters which were making it grow with the help of a centralized intelligence service.

We adopted the term competitive intelligence due to its widespread use. We consider that CI includes the aspects relating to strategic

business decisions, marketing, sales, etc., as well as those relating to the relationship with the environment and with the public authorities. All efforts by any type of organization whose purpose is to interpret and analyze the environment for decision making will be included in our field of interest.

Empirical studies (APQC, 1999, 2000, 2001, 2003; Comai, Pirttimaki and Hannula, 2006) revealed different types of CI activities with different focuses and priorities. However, several definitions have tried to simplify the environment by creating different categories. Montgomery and Weinberg (1998) suggested that "to accomplish the purposes of defensive, passive, and offensive intelligence, an SIS should focus on six environments: competitive, technological, customer, economic, political and regulatory, and social". The different terminologies used show that intelligence has several possible domains. For instance, Bessons and Possin (2006, p.44) introduced twelve types of surveillance activities: law, alliances, lobbies, scientific, competitors, diplomatic, computer technology, criminal, security, finance, social and trade unions or rumors. These competitive intelligence focuses or types will allow us to introduce the concept that an intelligence function can have at least six dimensions.

2.3 Six Dimensions for an Intelligence Function

The way a CI program is organized can differ between firms. In fact, each program depends on various factors that make it unique. However, CI programs do have some features in common and these allow us to understand which aspects are more suitable for a specific organization. An effective CI operation incorporates elements that answer four key questions:

- What is driving our ideas?
- Why does the CI function exist?
- What is the fundamental importance of the CI function?
- Where does the CI function operate?

Under this perspective, thinking strategically about who and what the CI function serves will lead to an effective mission statement, which can be formed around six dimensions (see Figure 2.2):

1. Process
2. Type
3. Scope
4. Location
5. Time span
6. Object

Dimension 1 - Process (spot, project and systematic)

This dimension describes the degree of formalization of the CI function within an organization. The more systematic the function, the more formalized it will be. Process is often related to the frequency of defining needs and collecting, analyzing and distributing intelligence to decision makers. Fahey and King (1977) defined three types of CI process: irregular, which involves ad-hoc studies; regular, which includes periodically updating studies; and continuous. Generally speaking, CI activities can be performed from three primary approaches:

- Spot: Intelligence is required and supplied on an irregular basis. Typically no staff is dedicated to the CI function.
- Project: CI activities are performed upon specific corporate or decision-maker request and must be achieved within a fixed period of time. Often, CI is supervised by specialized staff.
- Systematic: Competitive Intelligence involves ongoing scanning of the environment, information analysis, and distribution of intelligence throughout the organization. It generally includes a variety of intelligence products, each of which can have a specific time frame (Prescott and Williams, 2003).

Several studies have treated this issue as a major factor for distinguishing formal versus informal scanning or CI process. The study carried out by Ghoshal (1985) revealed that a formal scanning activity has the systematic process of gathering and distributing information as well as having a formal structure and personnel dedicated to the scanning behavior. Other authors suggest the need for a formal system. Hirschhorn (2004), from Metlife, for instance, considers it very important to "have a formal process and to ensure that that process is documented."

Dimension 2 - Type (centralized, decentralized, hybrid)

There are many organizational models in today's companies, and the CI function must adapt its operations to the current structure in use.

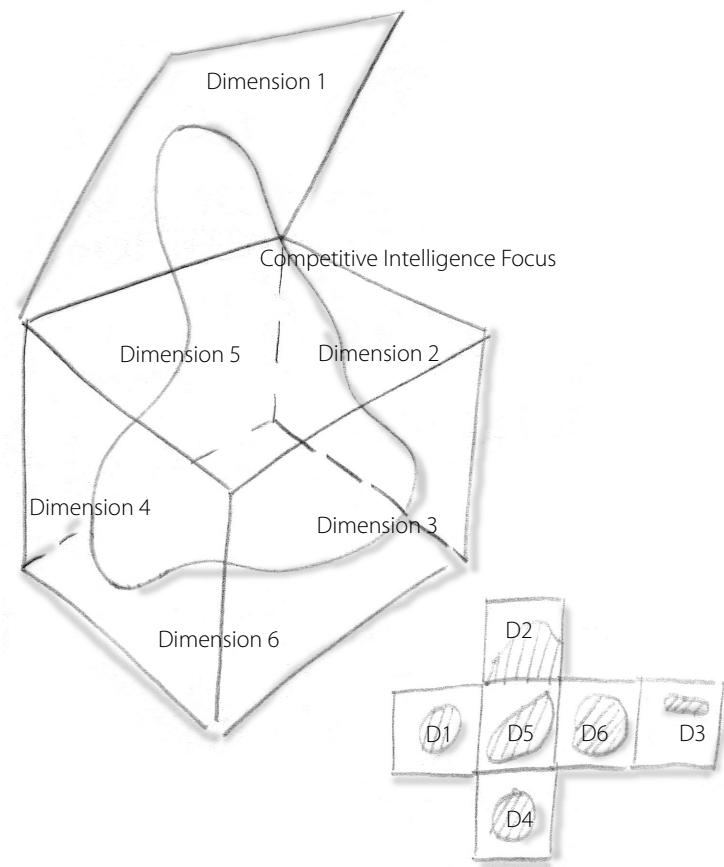


Figure 2.2 - Six Dimensions for an Intelligence Function.

Source: Comai (2006).

Generally speaking, three major classifications for the type of CI function are commonly adopted: centralized (APQC, 2000; p.77; McGonagle and Vella, 2003; p.31-32), decentralized (McGonagle and Vella, 2003; p.31-32) and diffused or hybrid (Fuld, 1995; p.420-422).

Centralized competitive intelligence functions typically have a single person set priorities, assign resources, and make decisions such as purchasing and consulting. Decentralized organizations tend to assign decision-making in multiple locations and often have more

than one person set priorities, assign resources, and make decisions. In “diffused” or “hybrid” structures some activities are centralized, others de-centralized.

Dimension 3 - Scope (tactical, business, strategic and corporate)

It is commonly accepted that there are three main decision-making levels within an organization (Fleisher and Bensoussan, 2003): the tactical or operational level, the business unit level, and the corporate planning level. For each level there is generally a specific group of decision makers, each with a specific type of CI need.

A tactical CI orientation focuses on achieving short-term bottom-line impact. Tactical CI is valuable for line-level personnel such as brand managers, for example, who can achieve a significant impact from it.

Business level CI primarily benefits intermediate management positions in the company, such as business unit directors. CI programs can help mid-level managers by analyzing the entire business portfolio, or by providing deep-dive analyses of company products, corporate capabilities, or potential new markets.

A strategic perspective of CI is widely argued in the CI field, and there are companies that allocate CI resources primarily to the strategic decision-making process. Strategic level CI can be valuable to senior managers, especially if it contributes to more effective decision-making. One example of strategic intelligence is the analysis of non-market forces such as governments, interest groups, activists, or the general public, as potential variables to be managed at the corporate level.

Dimension 4 - Location (marketing, finance and technology)

Location relates to the area of CI specialization, or the primary support role of the CI function. There are several options for locating the CI function within the organization and empirical evidence has demonstrated there can be as many as seven different positions within the company. Three common locations are:

- Marketing intelligence, which can include supplying tactical or strategic intelligence on competitive sales, advertising, market share, or strategy. A recent SCIP survey showed that Marketing/Market Research is one of the most frequent locations for the CI unit.
- Technical intelligence refers to the dominant use of science, and typically includes patent and other sources analysis. Technical

intelligence often suggests technological trends, opportunities, and threats for R&D departments.

- Financial intelligence is most common in organizations that are very bottom-line oriented and those that have significant impact from a few, large financial transactions. Those types of organizations often require a specialized type of intelligence oriented around financial information.

Dimension 5 - Time Span (short, medium or long term)

The time span characteristic refers to the duration of information used by the CI unit. Short-term and long-term (or future-oriented) data needs were suggested by Herring (1999), who proposed that decision makers should survey current and potential players in the competitive environment. By this, he meant that the intelligence function should build and maintain specific profiles according to the organizational need. Short-term information such as market share, competitor prices, etc., supplies immediate need, but does little to prepare for the future. On the other hand, long-term or future-oriented CI tends to be prospective and anticipate the coming environment. Between those extremes there is sometimes need for medium-term information to assist with decisions that will affect next quarter, or next year.

Dimension 6 - Object (competitors, consumers, other stakeholders or general landscape)

This dimension involves the CI research topic. Generally speaking, there are two classes of objects associated with CI: competitors, which focuses primarily on current rivals, and the broader environment.

Competitor intelligence involves collection, analysis, and dissemination of intelligence on today's opponents. It is often the primary object of the CI function, and it usually takes top priority. Some organizations ask the CI function to help monitor the broader environment, which can include consumers, other stakeholders, such as suppliers or regulators, or a scan of the general landscape, which Freeman (1984) suggested could include "any group or individual who can affect or is affected by the achievement of the organization's objectives".

Focus Box 2.1 – Intelligence in Embraco.

The Brazilian company Embraco, which is in the business to business market, has defined four priorities for the marketing CI function: Competition, Suppliers, Technology and Market (Junker, 2006). For each of these, several sub-elements have been defined, as sources of the main object. For instance, supplier Intelligence, which is linked to buyers, wants to examine: raw material, equipment, competitors and trends in the value chain. On the other hand, market intelligence, which is linked to the sales department, wants to monitor: clients, general behavior/action, new facilities, financial results, possible M&As and market trends.

Similarities and Differences within CI Operations

These six dimensions show several options for a CI function, and a myriad of possible CI configurations. They also point to significant differences in the way CI operations are structured and operated. An example of how different CI functions can operate at the same time may be provided by the case of the company Orange. Figure 2.3 shows the four groups which provide different focuses and products to specific internal customers.

Despite these differences, there are similarities in some dimensions across industries. For instance, pharmaceutical companies typically spend significant resources on technical intelligence, while defense and

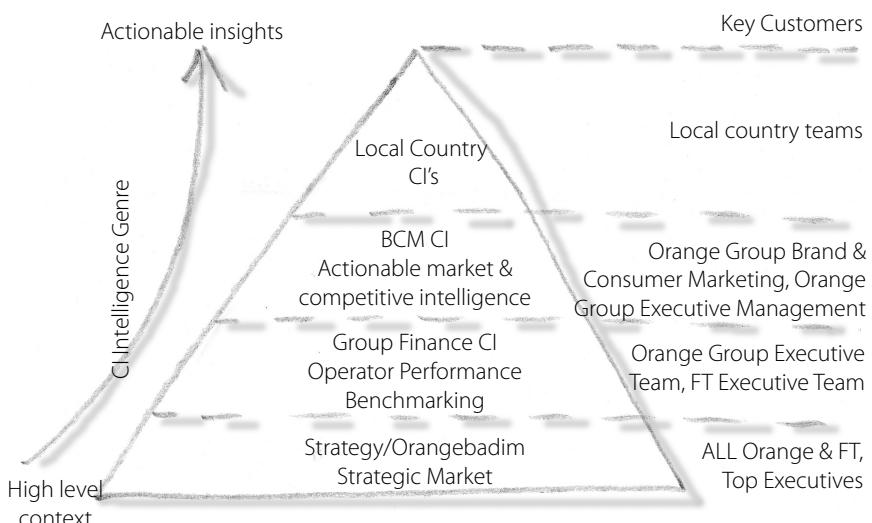


Figure 2.3 - CI teams in Orange.
Sources adapted from Orangebadim³.

aerospace companies tend to be strategy- and frontend- oriented. A study conducted by Comai, Wheeler and Prescott (2005) showed that world class CI functions tend to have some common objectives which are independent to the industry.

When starting or re-vamping a CI function, the parties involved should consider these six dimensions and how they apply to their particular environment. Constructing CI around them will help define the CI function within the organization. Taking the six dimensions into consideration will also provide a framework for developing an effective CI mission statement. Establishing and following a mission statement will help ensure that the CI function meets the needs of internal clients and provides actionable intelligence to the organization's decision-making process.

2.4 Intelligence in the strategic Decision Making Process

Several authors (Choo, 2001, Raymond, *et al.*, 2001; Miree 1999; Miree and Prescott, 2000) have studied the relationship between the environment characteristic and the competitive intelligence activity. These studies have been demonstrating a positive relationship between the two. For instance, those organizations that perceive a higher level of environmental uncertainty tend to be more active in their scanning behavior (Choo, 2001).

Several definitions have been focusing on the integration of the intelligence function into the decision-making process. "Intelligence is information that has been refined to the point where it can be used to make decisions" (Sawka, 2001). On the other hand Fuld (1995, p.24) asserts that CI exists only when "companies convert available information into actionable intelligence that will end up winning the game". The idea that intelligence should be actionable brings about the condition in which CI is introduced into the decision-making process. For Avnet for instance, "competitive intelligence is part of the structure of strategic planning inside ... in fact, in my mind I don't separate the two" (Hovis, 2000)⁴.

Several studies have attempted to deal with this issue. APQC in 2003 studied the relationship between the CI team and the management team in different case studies. The results of the research show that a CI team and the management group can either work together throughout

the intelligence cycle, in a so-called “interface”, or independently. The APQC (2003, p.35) study suggested that interaction can take place between several activities such as needs prioritization, CI project definition, information gathering, analysis, implication, recommendation, distribution, feedback and implementation for instance. In contrast, other works consider that an intelligence process which is closed to a strategic perspective involves four key stages (Bensoussan and Fleisher, 2003):

1. Defining directions within an analytical framework.
2. Gathering of fact-based information.
3. Analysis and interpretation of the evidence and extrapolation of meanings.
4. Defining potential implications.

Regardless, of whether the intelligence user and producer work together or separately, intelligence is a key part of any strategic decision-making process. Norton (2004, p.249) considers that “the purpose of an intelligence system is to improve, not replace decision making. For example, the intelligence delivered by an information system will guide you in allocating scarce resources in a manner that will optimize profits. For that reason, the cost of acquiring intelligence is justifiable as long as it continues to improve decision-making.” Competitive intelligence functions focus on understanding the appropriate response to competitive dynamics and implementing those responses. Herring (1992) describes six roles for intelligence in strategy formulation and implementation: to describe the competitive environment, to forecast the future competitive environment, to challenge underlying assumptions, to identify and compensate for exposed weakness, to use intelligence to implement and adjust strategy to the changing competitive environment, to determine when a strategy is no longer appropriate.

Firms must be proactive in the light of environmental changes. Anticipation is the key! It has been said that “To manage a business well is to manage its future; and to manage the future is to manage information”. However, the information available should be delivered to the decision-makers at the right time and in the right format so that an appropriate competitive response is made. Once the information has been gathered and delivered, a certain time lapse occurs before a decision is made. This period is the time available for any possible action to be carried

out. Figure 2.4 shows how the value of gathering prompt information is related to the time required for action. Information collected through an early warning process has a higher value than that gathered after it has become public knowledge, such as when it appears in the general press, for instance. We have not discussed the value of the information when there is no possible decision, such as when the event has irreversible implications, for instance.

Although this idea seems to be widely accepted in today's information-intense environment, some companies are not well-prepared to support anticipation by tracking key strategic information sources. While the information on the task environment is managed satisfactorily and used by top management, there is a serious lack of strategic long-term intelligence (Fuld, 2006a; p.28). On the other hand, "top executives need strategic intelligence about markets and competitors - tactical intelligence is of little use to top management" (Dye, 2006).

Strategic intelligence has major repercussions within organizations. Laudon and Laudon (2001, p.85) consider that a "strategic information system changes the goals, operations, products, services or

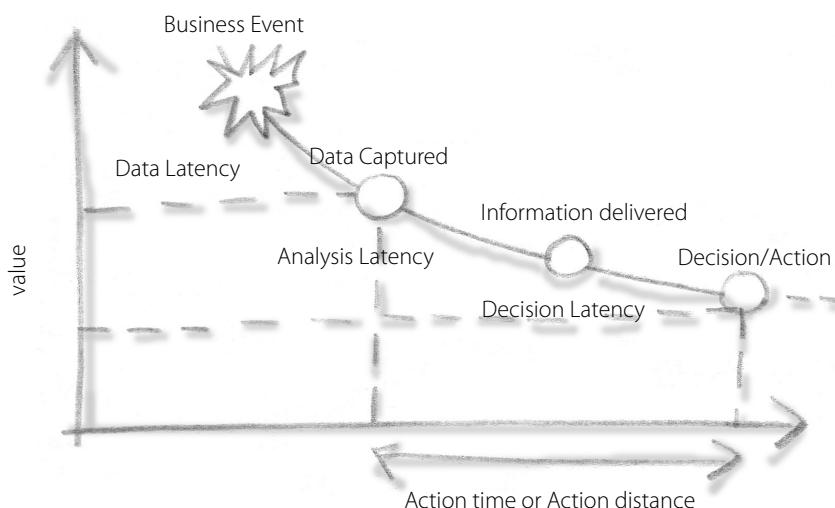


Figure 2.4 - Action time.
Adapted from Schrader (2006).

environmental relationship of organizations to help them gain an edge over competition".

The relationship between intelligence producers and users may play a significant role during the strategic planning process. However, systematic intelligence supports the idea that decision makers need continuous intelligence, either in the form of alerts or through periodic reports. The integration of intelligence plays, therefore, a key role and can be carried out at any stage of this plan, at the front end, when decision makers are looking for insights or at the backend, when the implementation of the plan is being followed-up (Tena and Comai, 2003). Additionally, strategic tools and primary-secondary sources can be associated to each stage of the strategy (Hugues, 2005).

However, this ad hoc process seems to be changing. Jan Herring⁶ considers that "in order to develop future programs, we also have to provide CI to support real-time strategic planning. In most firms, strategic planning is carried out once a year. However, I have now seen companies (there are at least two I know of) whose strategic plan is updated on a continuous basis, almost daily. CI will have a hard time keeping itself up-to-date on a daily basis. Management, particularly that concerned with strategic planning, is moving towards this continuous world-time strategic planning process and organizations will need to create a CI which keeps these planning processes current. At present, CI is behind in this area and I am not sure therefore whether there are any CI departments that can do this".

2.5 The benefits of Environmental Intelligence in strategy

It has been observed that the strategic planning process will positively benefit from the type of information collected from the environment (Fahey and King, 1977; Montgomery and Weinberg, 1979; Choo, 2001). Several research projects indicate that scanning operations and CI are positively linked to organization performance (Miller and Friesen, 1977; Newgren, *et al.*, 1984; Dollinger, 1984; West, 1988; Daft, *et al.*, 1988; Olsen, Murthy and Teare, 1994; Elenkov, 1997; Ahituv, *et al.*, 1998; Prescott, 2001, p.1; Suddaby; 2004 and Hughes, 2004). Godiwalla, *et al.* (1980) argued that the effectiveness of strategic planning is positively related to the

capacity for environmental scanning. (Diffenbach, 1983) identified several payoffs in analyzing the environment such as, for instance:

- Plans and decisions (better and more disciplined planning).
- Development of contingency plans.
- Broadened scope of perspective of the external conditions.
- Decision horizon.
- Improved ability to allocate strategic resources
- Improved ability to anticipate long-term problems
- Wide acceptance of environmental assumptions as a basis for formal planning
- Avoidance of crises.

Kindler (2003), director of the intelligence unit at Eastman Kodak Company, considers that the contribution of CI can be summarized in the following points:

- “Eliminate, or at least minimize, the element of surprise for management”.
- “Provide external input into internal decision making processes”.

These studies have been demonstrating a positive relationship between the two. For instance, those organizations that perceive a higher level of environmental uncertainty tend to be more active in the scanning behavior (Choo, 2001). In order to cope with environmental changes, firms have strategic and tactical models and information to help them formulate adequate policies. In this case a structured planning process and formal analysis process may help achieve greater knowledge and therefore a better competitive position in the market place. Zahra and Chaples (1993) consider that “analysis provides rich data that helps a company to avoid surprises in the marketplace by anticipating its competitors’ moves, and shorten the time required to respond to them”.

2.6 Conclusions

Although top management considers it essential to have access to good information, there are several limitations when adopting a strategic

intelligence system such as, for instance:

- Internal vs. external focus. Kindler (2003) argues that big firms such as Kodak tend to be excessively internally focused and thus there is a need to incorporate an external focus into the corporation.
- Informal vs. formal process. In a large number of firms, the environmental scanning activity is carried out informally (Jain, 1984; Keegan, 1974). Sawka (2006) observed that about thirty percent of firms do not have a systematic CI process. For instance, Hamrefors (1998a, 1998b) introduced the concept of spontaneous environmental scanning based on his survey of four Swedish organizations. The work demonstrates the existence of 4 types of scanning activity, the identification of which may aid the establishment of an organized scanning model (Hamrefors, 1998a). Other studies show that there are organizations which do not have a competitive intelligence function at all. For instance, about fifty percent of Catalan multinationals do not have a formalized CI function (Tena and Comai, 2004a). CI function is defined as a formalized, organized, structured process of information flow which produces a coordinated intelligence function.

Notes

1. See "High price of industrial espionage" June 5, 1999, Saturday The Times (Business Section).
2. See the "Decilor" project at http://www.lorraine.cci.fr/FRANCAIS/C3/300_2.htm
3. Presentation obtained from the following web page: http://www.orangebadim.com/multimedia-storage/a9/9c/a9e1b64103b039e9d49e889f6990-what_is_orangebadim.ppt
4. In Stephen H. Miller, SCIP, Special Report: SCIP's 2000 Annual Conference Keynote -- CI at Avent: A Bottom Line Impact.
5. See, for instance, the case of September 11, 2001, when terrorists attacked the twin towers in New York.
6. This interview with Jan Herring was published in the magazine "Puzzle- Revista Hispana de la Inteligencia Competitiva" No. 17. See also: <http://www.revista-puzzle.com>

CHAPTER 3

ACTORS AND FACTORS

The aim of the model given below is to gather together all the components of a business or industry that are needed for an in-depth assessment of a firm's external environment.

In Chapter 1, we saw that two possible approaches exist and that these two perspectives are complementary. As discussed earlier, the organization and the general environment differ in terms of the way in which the organization can interact with the respective environments. The framework suggested in this book, however, is a global overview of business, which allows the changes that could occur therein to be detected far in advance. The model contemplates a series of factors and their interrelationships which will be dealt with in this chapter.

We shall begin by describing the actors or agents, the general tendencies or factors characterizing a business or industry and the potential relationships between them. These factors are the foundations on which the full-size map rests.

3.1 Actors

Several authors have attempted to define which actors should be studied when preparing a strategic analysis. Actors or agents are usually identified in the micro-environment or direct/task environment.

Actors have been defined in various ways. For instance, De

Wit and Meyer (2004, p.360) consider individuals and organizations interacting and operating in the firm's environment. Actors have also played a significant role in the strategic analysis process. Fahey (1999, p.7-9) describes the competitive battlefield as "the arena: where the game is played". He suggests that the possible players that characterize the competitive environment are: customer, channels, suppliers, institutions, geography.

The stakeholder model proposed by Freeman (1984) makes an important contribution when defining which actors may have the greatest impact on or interact most with a particular organization. In Chapter 1, we observed Freeman's stakeholders which include actors from the firm's environment. Actors are also associated to the environment or sub-environment on which an organization is focusing. For instance, De Wit and Meyer (2004, p.360) distinguished the difference between actors operating within the sector level (industry actors) and those related contextually (contextual actors). The authors assert that industry actors are those which "perform value adding activities and/or consume outputs of these activities" and the contextual actors are those "whose behaviour, intentionally or unintentionally, sets the conditions under which the industry actors must operate". Actors can be classified in several groups (North, 1990; Freeman, 1984). However, one of the most interesting works was proposed by De Wit and Meyer (2004, p.360) who classified actors by the different ways in which they operate and/or collaborate among themselves. This classification gives rise to eight groups of different actors as listed below:

1. Suppliers
2. Buyers and clients
3. Internal (industry insiders)
4. External (industry outsiders)
5. Social and cultural actors
6. Economic actors
7. Political/regulatory actors
8. Technological actors

As can be observed, the initial four groups of actors are defined in the task or general environment, whilst the latter four are related to the general environment. A review of literature shows that strategic management has identified several actors that play a part in an industry. Table 3.1 (non-exhaustive) shows the potential actors which should be taken into consideration when carrying out an environmental analysis.

Table 3.1 – Actors or agents in the environment (non-exhaustive list).	
<i>Actors</i>	
Competitors	Aguilar (1967), Freeman (1984), Daft (1987), Porter (1985), Kotler (1997), Aaker (1998), Fahey (1999), De Wit and Meyer (2004).
Employees	Freeman (1984), Daft (1987).
Consumers	Freeman (1984), Daft (1987).
Customers (Domestic and/or Foreign)	Freeman (1984), Porter (1985), Daft (1987), Donaldson and Preston (1995), Kotler (1997), De Wit and Meyer (2004).
Opinion Leaders	Daft (1987), Kotler (1997), De Wit and Meyer (2004)
Suppliers	Freeman (1984), Porter (1985), Daft (1987), Donaldson and Preston (1995), Kotler (1997), De Wit and Meyer (2004).
Substitute Providers	Kotler (1997).
Complementors	Nalebuff and Brandenburger (1997), De Wit and Meyer (2004).
Alliances	Kotler (1997).
Media (may include journalists)	Freeman (1984), Kotler (1997), De Wit and Meyer (2004).
Universities	Daft (1987), De Wit and Meyer (2004).
Foundations	Glover in Andrews (1971).
Science and Research Technology Centers	Adapted from Daft (1987), De Wit and Meyer (2004).
Standardization Bodies	De Wit and Meyer (2004).
Banks and Loans	Daft (1987), De Wit and Meyer (2004).
Government	Daft (1987), Freeman (1984), Donaldson and Preston (1995), Kotler (1997), De Wit and Meyer (2004).
Political Groups or Parties	Donaldson and Preston (1995), De Wit and Meyer (2004).
International Institutions	De Wit and Meyer (2004).
Labor	Daft (1987), Kotler (1997), De Wit and Meyer (2004).
Investors	Donaldson and Preston (1995).
Trade Associations	Donaldson and Preston (1995).
Patent Offices	De Wit and Meyer (2004)
Local Community Organizations	Freeman (1984), Donaldson and Preston (1995).
Special Interest Groups	Pfeffer and Salancik (1978), Freeman (1984).
Environmentalists	Freeman (1984), Donaldson and Preston (1995).
Religious Groups	De Wit and Meyer (2004).
Lobbyists	Baron (1995), De Wit and Meyer (2004).

The competitive landscape (environment) is made up of several actors which the firm could interact with. Based on the list provided in table 3.1, we shall organize the actors according to the model developed in this book and suggest a new classification. We think, therefore, that any one actor can fall into the following groups:

1. Actors on the supply side:
Suppliers, Competitors, Organization and Product.
2. Actors on the demand side: Channels and Consumers.
3. Public Powers.
4. Interest groups.
5. Pressure groups.
6. Opinion groups.

They are all combined in the competitive landscape, which without them, or were a few of them to be omitted, would be far less comprehensive or accurate. Figure 3.1 shows a possible classification of the different groups.



Figure 3.1 - Actors and the Competitive Landscape.

A short description of the different actors is provided below:

Actors on the supply side

This group includes ***direct rivals, indirect or substitute competitors*** and ***suppliers***. These actors may provide competing products to the market in which the organization is competing.

The competitors are organizations which offer similar or undifferentiated goods or services to similar or identical customers to the other organization. The products are the results of the activities of the firms and can normally be associated with a specific environment such as the strategic business unit, for instance, which "incorporates a unique set of products or services aimed at a homogeneous market". The products are the means through which competitors can be detected and measured (Aaker, 1998). Competition is one of the most frequent set of facts discussed in literature and by practitioners all over the world. Competitive intelligence has been focusing entirely on the competitors as being the primary source of threat.

Indirect competitor can be measured in different ways. One of the most useful frameworks for identifying competitor is the model provided by Cantrell (1999) who identified six different competitor types.

Actors on the demand side

These actors can be: ***buyers, clients, customers or distributors***. Together with the supply side group, they form the markets where goods are traded. Figure 3.1 shows how goods or services (interchanged products) play a significant role even though they do not perform as actors.

Public Powers

These actors have the ability to make the choices that create the framework within which companies operate. They include, for instance, government, political groups or parties, standardization bodies, international institutions. Their actions are reflected in laws, rules and regulations which have an impact at both national as well as local level. This group can have some influence on all groups and/or the industry as a whole.

Pressure groups

Shareholders and partners, investors, alliances, unions, labor or employees are actors that have a direct relationship with the firm. These

pressure groups can significantly change the direction of a firm by procuring less or more resources for it.

Opinion Groups

Including the media, journalists, local community organizations, special interest groups, environmentalists or religious groups, these are actors that have been characterized by their ability to change public opinion. They can be so powerful, that they can, in some cases, represent a threat to an organization.

Interest groups

This group consists of trade associations, universities, research centers or foundations. Perhaps, this group is the most neutral one in the competitive landscape. However, it should be given special attention due to the fact it has always had a certain capacity for influencing some actors.

The classification shows that different weights are attached to the different groups of actors depending on how much they influence or potentially influence the organization. The classification has been made by placing the organization in the center of the map.

Actors are classified according to the roles they are playing in the competitive landscape. For instance, politicians can be classified in the power group whilst they actively play a major role in creating laws and regulations. In contrast, if the party does not hold this priority position, they may be associated to another group, such as the opinion group, for instance.

Although the above classification shows which actors have more or less influence on the organization, each actor should be studied independently. Moreover, actors should be classified overall as an entity or by looking to one or more individuals who are acting on behalf of the organization.

3.2 Environment Factors, Trends and Forces

The classic perspective in describing the general environment or macroenvironment uses the definition "STEEP" (see Johnson and Scholes, 2001; p.92). The acronym includes:

- Social, demographic or cultural factors. These factors represent

socially-related changes, such as the age structure of a defined population, for instance.

- Technological factors, referring to technological developments which may affect an organization's resources, market or products.
- Economic factors. They usually reflect the changes in macro-economic developments.
- Ecological factors depend on the changes in natural resources.
- Political - Worthington and Britton (1994, p.49-50) illustrate the pressure a group can exert on all political groups right from the start.

We saw, in Chapter 1, that the vast majority of management schools make extensive use of these factors when analyzing the environment. Whilst STEEP analysis is the most commonly-found classification in literature for studying the environment, other authors have suggested factors more closely related to industry. Kotler (1997), for instance, considers that the general environment consists of two sub-groups of factors which depend, on the one hand, on industry, which is closer to the actors and, on the other, on the economy which in relation to the former, is farther removed (see Figure 3.2). This perspective allows us to

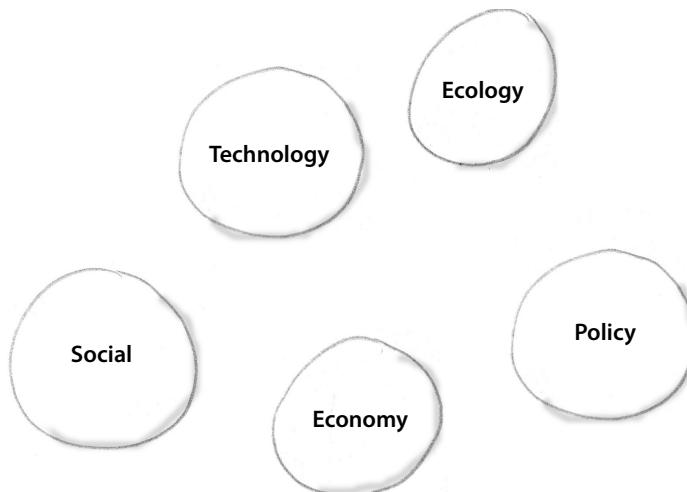


Figure 3.2 - STEEP factors.

add that proximity to a market or an industry is shown by the degree of influence held over the actors in that market or industry.

3.3 Relationships

Neither the firm, nor the actors are operating in an isolated environment. Several studies discussed the existence of relationships or interdependency (Pfeffer and Salancik, 1978) between actors and the environments. The relationships between actors allow boundaries to be made between the groups of actors operating in similar or identical sectors or markets. Scott (2001, p.202) considers the "coherence of organizational boundaries – the extent to which organizational forms in the field exhibit clear, well-defined boundaries".

Fahey (1999, p.207) suggests two types of potential relationship/network between entities: alliances, which involve contractual economic relationships and special relationships which are informal. Fahey suggested that informal networks are special because they involve a long-term relationship that can potentially evolve to become a formal relationship (contract). On the other hand, Glover mentions that the system includes, for instance, the relationships between:

- Governmental agencies (regulations, supportive and taxing).
- State and local government agencies.
- Associations, Foundations and Universities.
- Markets for Output (clients, distributors, licensees, subsidiaries, joint ventures, foreign importers).
- Money markets (holders of notes, bonds, preferred and common stock).
- Markets for material Input (mines, ore deposits, forests or real estate, suppliers).
- Markets for human services (directors, executives, boards, technical scientists, functional experts, employee supervisors, labor unions, services companies).
- Competitors.

Studying the interaction between organizations is part of the complexity of an environmental analysis (Osborn and Hunt, 1974). Understanding the types and forms of these relationships may help clarify the

differences and prioritize those likely to have the greatest impact on the organization.

Two types of relationship can develop: the relationship between the different actors and another between factors and actors. An introduction to this is given below.

Relationship between Actors

Experience shows that actors have always been considered a source of the key relationships in an industry or business. The 5-forces model (Porter, 1985), for instance, analyzes the power to influence enjoyed by different actors in a commercial environment or by those which are part of a value chain: direct and potential competition, suppliers and clients. As suggested by Porter (1980), there are three types of relationship in an industry:

- Supply.
- Demand or commercial, relating to the actors.
- Rivalry or competition.

As we mentioned at the beginning of this chapter, De Wit and Meyer (2004, p.361) highlight the relationship between the actors in the following way:

- "Upstream vertical (supplier) relationships". Relationships located inside the value chain on the supply side.
- "Downstream vertical (buyer) relationships". The demand.
- "Direct horizontal (industry insider) relationships". As in firms offering identical or similar products within one industry, for instance.
- Indirect horizontal (industry outsider) relationships". A firm can have relationships with other firms outside its industry, such as, those in the hardware or software sectors, for instance.

Figure 3.3 shows the relationship of a firm with the principal actors in industry. The figure also introduces the idea that STEEP constitutes a group of actors corresponding to specific factors or trends.

Studying the relationships between actors proved to be very productive for understanding the competitive landscape. Anecdotal observation shows that firms use this perspective as a practical tool. The

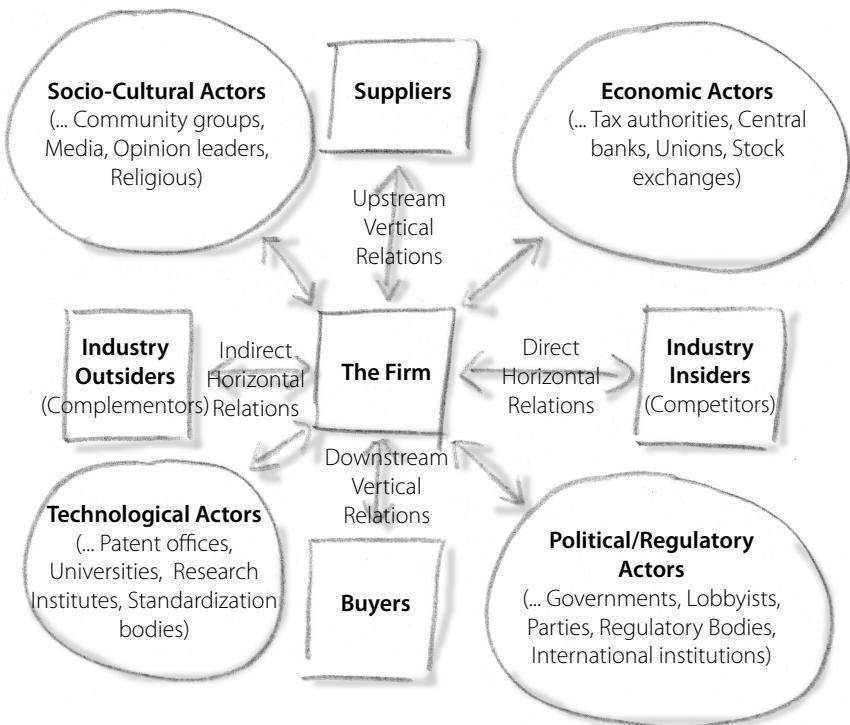


Figure 3.3 - Actors and Relations.
Adapted from De Wit and Meyer (2004, p.361).

company Chrevron, for instance, made use of the relationship between actors to study which activities carried out by several stakeholders were related to the dominant competitors (Ransley, 1996). On the other hand, Proximus has also used the relationship between actors to understand general trends that may affect the telecommunications market (Gillis, 2005).

Relationship between Actors and Factors

A very common exercise carried out by the management of a firm is to define which factors have some impact on the way in which a firm is run and to classify them in accordance with the STEEP model seen earlier. The criticism of this model, however, is that it can create a list of factors that have no immediate or direct influence on the behavior of the firm. It is possible that this inaccuracy occurs when the considerations assigned

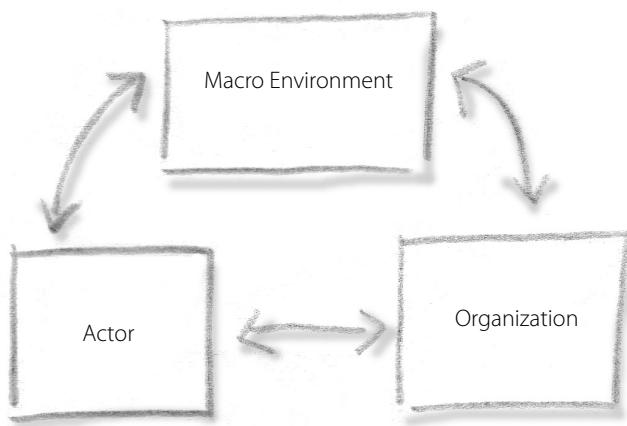


Figure 3.4 - Influence of the macro environment on the actors.
Adapted from Worthington and Britton (1994, p.5-6).

with regard to weight or degree of implication and time required are no meticulous.

A second observation is that the factors are defined in a speculative way and the sources of the trends are omitted. The application of a STEEP analysis is studying the possible effects that these factors are procuring in the environment. In fact, literature considers this type of relationship to be not very common and in the event that it does occur, it seems that its degree of influence would be minimal. For this reason, the notion of institutions being influenced by the actors is not a common one. The PEEST study, therefore, is limited to analyzing and assessing the impact and the corresponding potential implications on/for a firm's business (see for instance, Fleisher and Bensoussan, 2003; p.280-282).

The power of the actors to influence is not only limited to the organizations, and therefore plays a decisive role in the creation of the general factors, providing they (or the trends) have already been accepted as existing in the first place. Worthington and Britton (1994, p.11) considers that "it is important to recognise that the flow of influence between the organization and its environment operates in both directions. The external environment influences firms, but by the same token firms can influence their environment". Figure 3.4 shows the double influence of the macroenvironment on the actors and viceversa.

It has not been acknowledged to date, that the actors can be a main and direct source of the environment although Aguilar (1967, p.11) has pointed out that the factors of the macroenvironment can be observed through different sources. These information sources become indicators of the general factors. Implicitly, Aguilar is linking some actors to the factors.

A global and, at the same time, sharp vision of the actors and also of the factors affecting an organization is important if the study of both of these and the implications they have is to be able to contribute significantly to the strategic orientation of the firm. Bowmann and Asch (1995, p.65) consider that "given the complexity of the organization's environment it is clear that consideration of all forces is required".

3.5 Conclusion

The study of the actors, of the general factors, also called trends, and of the potential relationships between these two groups of elements in an environment, allows a wider vision of a business to be obtained. Andrews (1971, p.70) considers that "The complexity of a company environment begins to appear more tangible as its relationships to other organizations and individuals is sorted out". In addition, this discussion allows us to define some of the concepts which are introduced in the following chapter where we shall see how the relationships between factors can become a system for prior detection of changes in the environment.

CHAPTER 4

CAUSE-EFFECT RELATIONSHIPS

4.1 The cause-effect relationship and diagrams

Although some models do not separate the general environment from the task environment, the relationship between factors and actors is not visible. For instance, Fahey (1999, p.7-9) does not provided a significant distinction between factors and other elements in the competitive arena. Daft (1987, p.46) also mixed factors between actors. Moreover, Lenz and Engledow (1986) consider that "there is no integrative conceptual framework for guiding and interpreting the full range of economic, technological, social and political forces that know how to influence the strategic action of organization." Therefore, there is considerable space for any new contributions capable of bridging the gap existing in the identification of the nature and type of relationship that there could be between actors and environmental trends.

If actors and trends are considered entities, there are several diagrams which show the relationship between them. Prescott (2006) considers, for instance, that a generic diagram may fall into six groups:

- 1.Mapping the Business Diagrams.
- 2.Relationship and Influence Diagrams.
- 3.Input-Output and Control Diagrams.
- 4.Causation Diagrams.

5.Change Diagrams.

6.Flow Diagrams.

The theory of networks, which has been discussed by several authors (see for instance Nohria, 2002) supported the idea of interconnections. Others also supported the significance of visual techniques applied to the organization (see, for instance, Meyer, 1991; Mintzberg and Van der Heyden, 1999). Graphics, images, maps and other visualization instruments¹ are powerful tools! The appearance of analyzed information or intelligence facilitates cognitive perception of events. Moreover, if the information is shown using a single tool such as a map, the understanding process is accelerated.

According to Prescott (2006), the framework proposed in this work uses both the influence and the causation diagram. This model may be limited by the Biases in Perception of decision makers or analyses as suggested by Heuer (1999)². However, attempts to obtain a complete picture of the organization's surroundings help in discovering new potential early signs. As we saw in the previous chapter, the model proposed incorporates into its diagram three key elements:

- Actors
- Factors or Trends
- Relationships

We will therefore discuss in more detail the interaction of these three components. We will start by focusing on the type of relationship existing between actors and then discuss how events are influenced by actor activities in a specific sector. The subsequent section will discuss three cause-effect relationships separately: one between actors, a second between actors and factors and finally, the relationship between factors and actors. We shall also look at multiple relationships or "chains" where actors and factors are interconnected in various types of cause-effect relationship.

4.2 The Cause-effect relationship between actors

The type of relationship introduced in this section allows us to see the type of dependencies that exist between actors in a specific sector.

The cause-effect relationship is not new. However, cause-effect has not been studied so far. Only a small part of strategic management literature has devoted any time to it (see, for instance, Freeman, 1984; p.62) and this has been for the most part, indirectly. For instance, institutional theory has long debated the relationships between institutions and organizations and their potential implications (see Scott 2001). This school provides the added perspective within this approach that both official and unofficial rules (laws, contracts, standards, values, etc.) established by various actors play a fundamental role in the behavior of an organization. In addition, the organizations play a major role in their own creation. This makes way for the idea that all organizations can have an infinite number of cause-effect relationships. Box 4.1 provides an example of the potential relationships between actors.

On the basis of the idea that all organizations are affected by each other, what needs to be ascertained is which of them have a greater impact. In other words, we need to define the activities of an actor (cause), which has major implications (effect) for another or other actors.

Focus Box 4.1 - The Effect of a pressure group.

The extreme pressure which some actors, such as sectorial or consumer associations, European regulatory agencies or employees exert upon business can have a major effect on some organizations. For example, Spanish firms such as Henkel Ibérica, Matutano and Pascual withdrew the advertising for several of their products on some television programs (in this case Tele 5), because children's viewing hours were not being respected².

As we saw in Chapter 3, it is possible to identify several groups of actors whose activities have potential implications for the behavior of the organization. For example, Gomes and Braga (2005, p.112) suggested that the trade unions may be a key actor in the competitive environment. Nevertheless, it is impossible to define a priori which actors are of greater or lesser importance since this is linked to the specific environment of an organization.

4.3 Cause-effect between actors and factors

The cause-effect relationships are not limited merely to actors. The idea we are pursuing in this chapter is the extension of the concept to other factors in the environment. More specifically, we wish to study the

possible relationships existing between actors and the factors observed in connection with an industry. For this reason, we shall try to justify the existence of relationships which define a factor (effect) by means of certain types of behavior on the part of the actors (cause). De Wit and Meyer (2004, p.360-368) stated that it is possible to observe how several types of relationships are built between actors. They believe these can be classified under the following four headings:

- Relational actors
- Relational objectives
- Relational factors
- Relational arrangements

According to the literature examined, it can be said that actors have a certain capacity for influencing the factors in an environment. Oster (1999, p.4), for instance, asserts that "organizations themselves can sometimes influence the external environment in a profound way". There are two contradicting perspectives on this matter:

- Environmental factors are "controllable" elements.
- Environmental factors are "uncontrollable" elements.

Some authors consider that factors are controllable elements, which means that organizations can have a certain degree of control (see for instance Zeithaml, *et al.*, 1984), such as firms operating in concentrated markets, where players are easily identifiable and have a substantial market share, such as the pharmaceutical, automotive, semiconductor, airline, telecommunications, investment banking, bulk chemical or petroleum industries, for example (Saloner, *et al.*, 2001; p.185). These enterprises "are large enough to affect industry pricing and, more generally, to determinate the competitive characteristics of their industry" (*ibid*, 2001).

On the other hand, some people would say that factors are uncontrollable elements and they therefore adopt a passive stance. The study and definition of the capacity of actors which interact and alter the general trends of an industry does not aim to define whether actors do or do not have control of said trends. What we are attempting to do is ascertain is whether actors are able to influence and contribute to both their positive and negative development.

Observations show that there are firms which use this technique to study which actors contribute to the creation of trends with the specific aim of anticipating how they will change. For instance, Shell International studies the elements of its sectorial structure in order to identify trends and patterns. Karl Rose⁴, director of strategic intelligence at Shell International Ltd., argues that "if one monitors only current events, then there is a high risk of fashion creeping into the analysis work. On the other hand, looking at structural changes and changes drivers in the global environment should be combined with more immediate signals in order to produce actionable intelligence". Figure 4.1 shows the three levels adopted by the oil company to identify potential risks or opportunities.

It is thus possible to establish that a comprehensive study of all the actors that have a potential relationship with the factors allows us to define, to a certain extent, which these factors are. In the field of technology, Fahey (1999, p.362) considers that "Technology represents

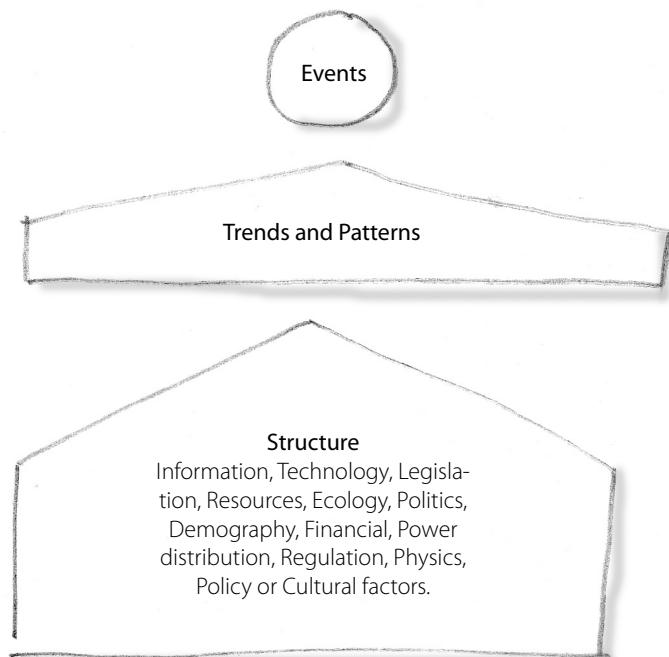


Figure 4.1 - Risk assessment by Shell International Ltd.
Adapted from Gilad (2003, p.209).

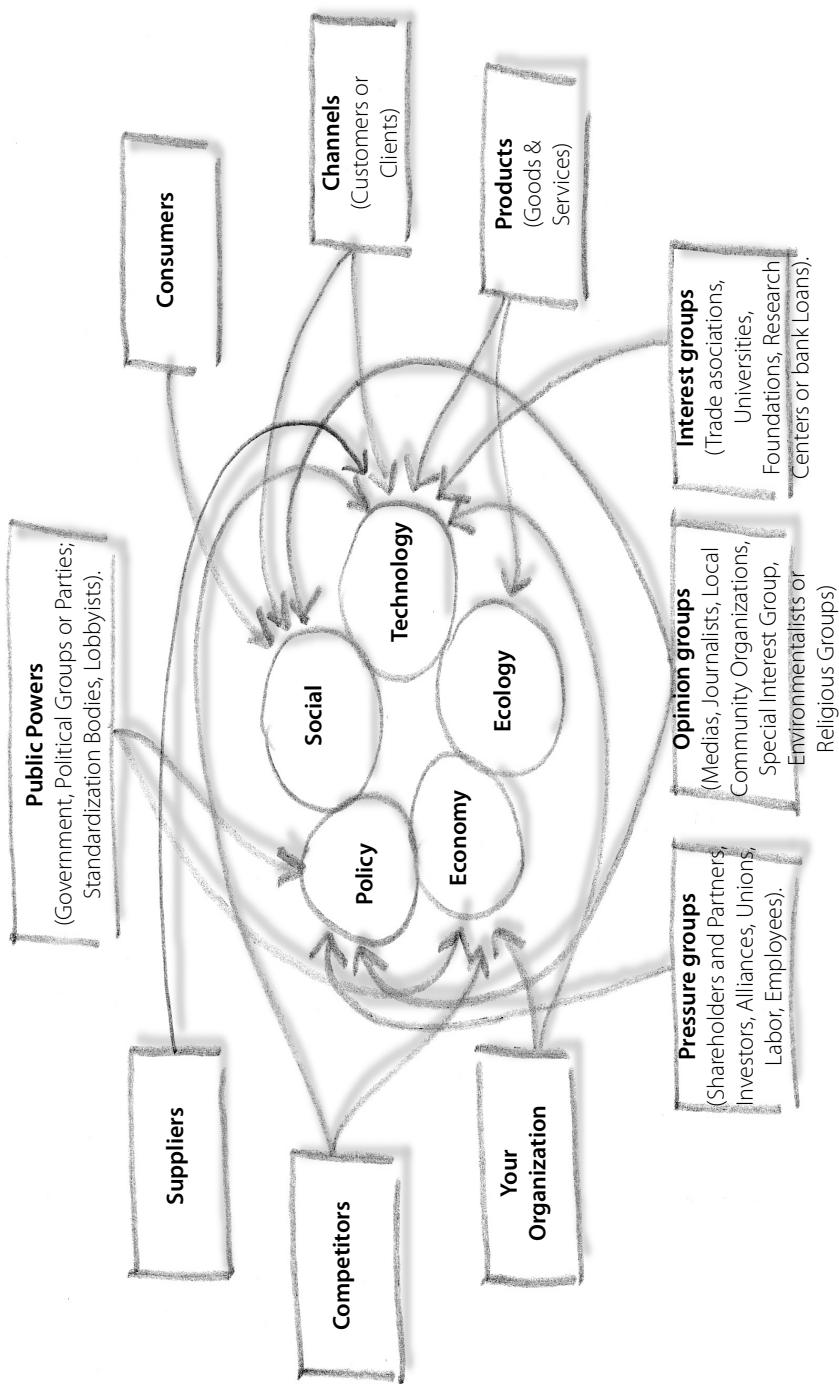


Figure 4.2 - How Actors influence Factors in a cause-effect relationship.

the encapsulation of knowledge for three purposes": (i) to develop or enhance products or to offer to customer, (ii) to develop or enhance an organization's activities and processes, (iii) to enhance an organization's raw materials, components or suppliers. For instance, technological trends can be identified by tracking any R&D developments or projects generated by competitors or suppliers or other scientific organizations. Figure 4.2 shows a diagram in which the actors are connected with the factors.

4.4 Cause-effect between factors and actors

It has long been discussed that the specific environment has a direct effect on organizations. We have already seen that the actors found in this environment are better known as competitors, suppliers, clients, etc. However, the general contextual or macro-environment, which is farther-removed than the previous one, includes economic, political, legal, social, ecological, technological elements etc. also referred to under the term PEEST or STEEP.

Having identified these factors through a study of the trends we are able to verify the repercussions that they may have once more on the environment. In an exercise similar to the previous one, we shall define which factors relate to the actors in the environment. In other words, we shall verify the cause-effect relationships in which the causes are the changes procured in the factors and the effects are the implications of a political, social economic or ecological change on the organization. Figure 4.3 shows this process. Some final considerations should be introduced:

- The effect (in terms of results) of these factors on the uniqueness of any actor (for instance competitors) will not be identical.
- All factors have a certain potential influence on each other so that one trend potentially affects another trend (Hussey and Jenster, 1999, p.53-55). Moreover, Fleisher and Bensoussan (2002, p.281) suggested that there are possibly interrelationships between trends which can either support one another or produce conflict.
- The effects of factors can vary enormously between firms.

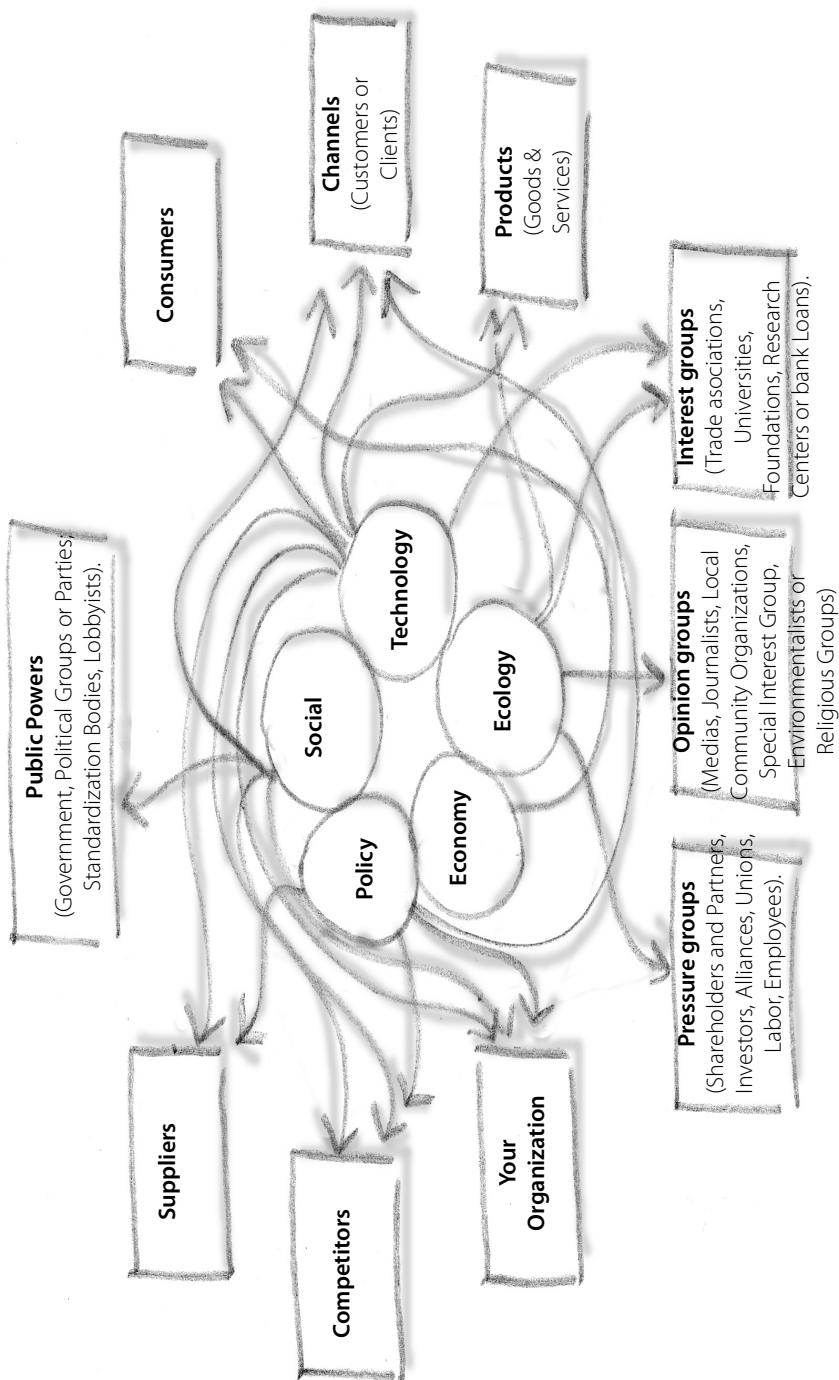


Figure 4.3 - How Factors influence Actors in a cause-effect relationship.

4.5 Multiple cause-effect relationships and regressive analysis

The competitive landscape can be marginally more sophisticated than has been discussed up until now. If the three types of relationship mentioned above are combined together, it is possible to identify multiple connection chains between actors and factors.

For instance, the answer to the question: Will internet become a threat for a bookstore chain? will depend on the type of multiple cause-effect relationships involved. The only way to find out whether on-line shopping may constitute a threat or an opportunity for the business of this particular firm is to produce a regression analysis. Starting with the consumer and distribution channels, the task here is to see how these two key actors are influenced by the trends of on-line shopping behavior (social trend), payment trusts (social and technological trend) and internet access (technology or social). The second step is to understand which actors are now contributing to these factors. The following can be seen: competitors, supplier companies, such as software companies, clients, consumers, consumer associations, financial institutions, government, distribution channels etc. Some of them can be directly linked to social and technology trends however there are others which may be interconnected.

Multiple relationships between actors and factors make several options possible. These cause-effect combinations can be divided into two main groups: direct and indirect. A direct relationship is established when a specific activity by one actor directly affects another actor. This type of relationship was discussed earlier in Section 4.2. On the other hand, an indirect relationship becomes visible when an actor has been influenced by the action of another which is not directly visible. Moreover, indirect relationships can be positive or negative for the company⁵.

Regression analysis helps anticipate the source of a particular action relating indirectly to the expected effect. "Regressive" study or analysis allows the main actors to be identified so that any changes in them can be used to obtain an early warning.

Until now, statistical analysis has been adopted as a tool to predict (assume) a future situation. The study of the factors relevant to an industry can be carried out by analyzing the past or the current situation in order to then project it into the future (Johnson and Scholes, 2001; p.92). Application of the concept behind regression analysis enables us

to move from a closed predictable event to a more distant one. Only by building this type of speculation is it possible to obtain strategic clues which allow a future event to be seen with a certain degree of anticipation.

Focus Box 4.2 - Trend Analysis by Proximus. Source Gillis (2005).

The case of Belgian firm Proximus Telecommunications shows an application of the concepts set out in this chapter. In order to anticipate the changes in consumer preferences, the firm looks at the global trends affecting the mobile phone market. The company has also established a "trends map" which connects several key trends together. The map shows some main trends which influence other secondary trends.

4.6 Types of relationships

The maps of actors and factors suggested above can be supplemented with additional information. The official and also the unofficial links (relationships) established can be studied in more detail. For instance, Pfeffer and Salancik (1978, p.68) suggested a positive and negative effect or contribution to the structural characteristics of the environment and the relationships between social actors. Several characteristics can be associated to each relationship.

1. Timeframe - a relationship can produce short-, medium- or long- term effects. When an active group decides to take some action with regard to a targeted organization, it will act quickly. In contrast, the introduction of a new product may give rise to slow consumer adoption, which leads in turn to a change in the timeframe of the effect.
2. Level of influence - The relationship between actors can be strong or weak, depending on their ability to communicate, make contacts etc. For instance, in general, a firm has more influence over its suppliers, since they are dependent on the contracts with clients. When business enterprises resource planning (ERP) was applied to the automotive supply chain system, suppliers were connected to the major clients who forced them to provide components based on demand.
3. Direction of influence - This can be uni- or bidirectional. Governments, for instance, (through new laws and regulations)

have a one-way influence, in theory, on the organizations in a particular environment. The contrary is less frequent. Lobbies may try to influence governments.

One way of assigning priorities to those relationships an organization needs to watch, is using a combination of the aforementioned characteristics:

$$\text{Priority} = \text{Intensity} \times \text{Timeframe} \times \text{Direction}.$$

This classification can be useful for understanding weak signals⁶. Using the “formula” above, companies may be able to rate actors according to the industry or the type of competitive landscape they are analyzing or exploring.

4.7 Conclusion

Defining the relationships between actors and factors and crystallizing the findings on a map may help to develop a sophisticated analysis process. Fahey and Randall (1998, p.21) consider the use of maps something new for scenario analyses that have not been implemented as often. Prescott (2006) considers that a visual technique or diagram or map has the following advantages:

1. Helps reduce complexity and clarify problems.
2. Diagramming is complementary to text.
3. Assists in identifying and making changes.
4. Helps to identify boundaries and reduce information overload.

In general, it is possible to conclude that understanding which trees in the forest are the most relevant may help build the pathway towards a future-oriented analysis process.

Notes

1. See for instance Mind-map at http://en.wikipedia.org/wiki/Mind_mapping or Mindgenius <http://www.mindgenius.com/website/presenter.aspx?type=type&ns=/products/mgbusiness/>

2. "Biases in Perception of Cause and Effect" by Richards J. Heuer (1999) available at: <https://www.cia.gov/csi/books/19104/art14.html>
3. La Gaceta "Retiran publicidad en Gran Hermano y Aquí hay tomate". Tuesday, 28/10/2003 and El Periodico "Tres grandes marcas retiran sus espots de 'Gran hermano'". Madrid, Page 99 Friday, 24/10/2003
4. See contribution from the author in Gilad (2003, p.209).
5. An indirect relationship can only be positive or negative. This means that it may produce an expected change which is related to a positive/negative implication of the event. An indirect relationship does not include any neutral implication because that would not be possible.
6. See, for instance, Yves-Pierre Ducret who discussed the Analysis of weak signals. at Veille conference: <http://209.85.135.104/search?q=cache:13LJcopOGmwJ:62.73.5.66/vmag/vmag.nsf/01e3ecfad1990b8fc12569030043f4df/fb89613a3867c21fc125702b004f3056%3FOpenDocument+%22Analyse+des+signaux+faibles%22+ducret&hl=es&gl=es&ct=clnk&cd=1>

CHAPTER 5

STRATEGIC BUSINESS ANALYSIS

This chapter discusses several analysis models that can be used to define on which actors, and/or factors, the firm should focus. We shall call this step a pre-preparation activity. Analysis models and techniques assist the creative process which precedes the Competitive Landscape Map design as described in the previous chapter.

5.1 Analysis Models and Techniques

Numerous analysis techniques are available and have been described for the strategic planning process. Our intention here, however, is not to provide a complete list, but rather to give a brief description of a few of the more generally used techniques as an introduction, taking into account the fact that we are addressing a varied and diverse audience coming from a wide range of professional fields. Each firm is likely to define its own set of tools. Lenz and Engledow (1986) consider that "analysts and managers in most organizations are inclined to adopt a particular model and use it for a variety of analytical tasks". However, firms should use more than one tool in order to expand the creative process and thus increase their chances of success.

It should be stressed, however, that the choice of analysis technique(s) often determines the end result of the intelligence task. According to Sawka (2001) "intelligence is information that has

been refined to the point where it can be used to make decisions. ... Answering more sophisticated questions requires more sophisticated analysis tools." A study carried out by Outward Insights (2005, p.3) shows that only a minority of the firms surveyed were using advanced analysis models such as "War Gaming", "Scenario Planning" and "Competitor Response Modeling".

Several studies show how varied the analysis models used by CI professionals can be. Research carried out by SCIP amongst its members, revealed which models are used most in analysis and the extent to which they are considered effective (Table 5.1).

On the other hand, a study focusing on CI best practice Spanish firms obtained the results shown in Table 5.2. The techniques most used by departments carrying out information analysis tasks were SWOT and benchmarking.

Table 5.3 shows a list of several analysis models, their timeframe (past, present and future) and the preparation level of the strategy on which the technique has its main influence: functional area, business and corporate unit. A brief introduction to each technique is given below.

Competitor Profiles

The creation of competitor profiles is linked to competitive analysis (M. Porter's five forces), which has just been discussed. A particularly concise and efficient way of describing a competitor profile would be "the key information on a relevant competitor on one sheet of paper" (Hussey and Jenster, 1999; p.97). It could also be understood as the synthesis of a file which includes everything that is known about a competitor. It is a tool which condenses information, makes it easily updatable and allows it to be used efficiently. It can be regarded, according to Porter, as part of the analysis of the competition. Its use as a CI technique has been described in detail by Fleisher and Bensoussan (2003)². A starting point can be found in the set of questions suggested by Porter regarding the competitor response profile (Porter, 1980; p.71):

- Is the competitor satisfied with its current position?
- Which actions or strategy changes is the competitor likely to take/make?
- In which areas, is the competitor vulnerable?
- What would bring about the greatest and most effective retaliation on the part of the competitor?

Table 5.1 - Analysis models used by SCIP members - Source: SCIP and T.W. Powell firm (1998) "CI analysis tools: How Effective Are They?"

<i>Use</i>	<i>Effectiveness</i>
Competitor Profiles	88.9%
Financial Analysis	72.1%
SWOT Analysis	55.2%
Scenario Development	53.8%
Win/Loss Analysis	40.4%
War Gaming	27.5%
Joint Analysis	25.5%
Simulations	25.0%
SWOT Analysis	63.1%
Competitor Profiles	52.4%
Financial Analysis	45.5%
Win/Loss Analysis	31.4%
War Gaming	21.9%
Scenario Development	19.2%
Joint Analysis	15.8%
Simulations	15.4%

Table 5.2 - Analysis models most used by Spanish best practice – Source: Tena and Comai (2004).

<i>Analysis models</i>	<i>Number of firms which answered</i>	<i>Average result obtained</i>
SWOT	9	4.11
Benchmarking	9	4.00
Product comparison	9	3.72
Scenario or forecast study	9	3.67
Financial analysis	9	3.56
Competitor profiles	9	3.48
Patent study	9	3.33
Resources and competition capabilities analysis	9	3.22
Porter's 5 forces	9	2.56
PEST-environment study	9	2.55
Reverted engineering	9	1.89
War Gaming or simulations	9	1.22

The competitor profiles may contain several sections, depending on the circumstances of the firm and the needs of its decision makers:

- Apparent objectives and strategy
- Financial results
- Product analysis
- Marketing and sales activities.

Table 5.3 – Classification of the Analysis Models¹.

Name	Main Objective	Time frame	Use	Purpose	Main Reference
Competitor Profile	Competitive environment or, financial or activity sector and related sectors.	A, F	B, C	Gathers information on one or more competitor and monitors them on a continuous basis with the aim of gaining a more precise understanding of their actions, objectives and strategy.	Porter (1985).
The six angles of Competition	Competitors or clients.	A, F	B	Defines the business opportunities and threats from potential competitors using 2 key characteristics to identify the technology/needs provided.	Cantrell (1999).
Stakeholders	Sector and market.	A	B, C	Examines companies, organizations or individuals that are "stakeholders".	Freeman (1984), Tena (1992).
Blindspots	Decision-maker or firm.	A		Identifies the causes of errors resulting from perception difficulties on the part of directors.	Zajac and Bazerman (1991), Zahra and Chaples (1993), Gilad (1996).
Patent and Technology Mapping	Competitor, technology or sector.	A	B	Defines technology trends using patents and scientific literature as a source of information for analysis. This analysis refers more specifically to the technological element analyzed in STEEP, for instance.	APQC (2001), Paap (2002), Trippé (2003), Vergara (2004).
Value Chain	Competitor or firm.	A	B	Studies the activities carried out by a firm or business unit and tries to increase the value created or reduce costs.	Porter (1985), Parolini (1999).

Industrial sector analysis (5 forces)	Competitive environment or activity and related sectors	A, F	B, C	An interpretation of the average probable profitability of a sector based on characteristics or factors of its financial and competitive conditions.	Porter (1985).
STEEP	Macro-environment.	F	B, C	Defines the implications general factors in the environment can have on the sector or a strategic business unit in a future timeframe.	
Analysis of Competing Hypotheses	Environment and Organizations.	A, F	B, C	Used in situations in which major issues need to be assessed and where careful examination and consideration of alternative explanations or conclusions is required. Helps the analyst to overcome, or at least to minimize some of the cognitive limitations existing in intelligence analysis.	Heuer (1999).
Scenario	Competitor, firms, sector, technology	F	C	Allows the study of future scenarios for a sector, market, competitive strategy, legal environment, etc. in accordance with the various key factors which may come into play in the timeframe defined.	Fahay (1999).
War-Games	Competitor and firms	F	B, C	Studies the possible reactions of numerous players in a conflictive or competitive situation.	Kurtz (2002), Reibstein and Chussil (1999).
SWOT	Business and sector	A, F	C	Conclusion model in which the hypothetical opportunities and threats existing in the sector are compared with the strengths and weaknesses of an organization. It can be applied to the firm itself as well as to the competition.	

Period, that is, timeframe: A = Actual and F = Future
 Use, that is, strategy level to which it is most advantageously applied: T = Tactical or functional area, B = Business and C = Corporate

- Source of competitive advantage.
- Importance of the activity of the business unit being studied, in relation to the parent company group.
- Scope of international operations.
- Strengths and weaknesses.
- General aspects of business culture and organizational practices.
- Personnel policies.
- Assessment of the key factors for success - exactly how many of these does the competing business unit have (adapted from Hussey and Jenster, 1999).

Another way in which a competitor can be monitored is by collecting information in the profile of top management characteristics, on its make-up, orientation, previous experience, declarations of intentions and personnel or corporate objectives (Porter, 1985). These "player profiles" can help in the interpretation of decisions already made as well in the prediction and anticipation of the choices the competitor's management team might make.

Since competitor profiles are normally part of the study of an industry and its players, one of the consequences can be that they give rise to considerations which will allow each competitor to be assigned to a strategic group. This can happen when the basic dimensions of the strategy being followed by the competitors is identified and is used to better interpret the closeness between the different firms as regards the way in which they compete and, as a result, the way in which they should be grouped. The management profile is one which can be added to the competitor profile, as a qualitative complement to the other conclusions obtained from an appreciation of the objectives and inclinations influencing the decisions taken by the top management of rival firms³.

The competition can be studied using the four corner analysis as suggested by Porter (1985). The position of a firm in the industry is shown by four factors: Future objectives, current strategy, hypotheses and abilities. Several questions are applied to each of these components in order to determine a competitor's profile. The questions are: Is the competitor happy with its current position? Which movements or changes in strategy is the competitor likely to make? In which areas is the competitor vulnerable? And where will the competitor's most effective and strongest retaliation be?

- Future objectives - It is important for a firm to forecast the future objectives of its competitors in order to see how they are likely to behave. It is possible to determine whether a competitor is happy with its current position and if it is not, how it may react as a result and how acute the reaction may be. Firms must collect as much information as possible regarding financial objectives, in terms of technological dominance and position, among other factors. This information should then be used to try and analyze the objectives of the business unit and the parent firm, as regards product portfolio and strategic positioning.
- Current Strategy used by the Competition - A major point of analysis is the current strategy used by the competition. The study of this will allow us to determine the current position of the competition in the industry and in which direction it is likely to move.
- Capacity of the Competition - Firms must assess the weaknesses and strengths of the competition in different areas such as products, distribution, commercialization and sales, operations, research and development, costs, financial structure, organization, management expertise and business portfolio, among others. The objective of this analysis is to determine the ease with which the competition is able to begin strategic movements and respond to problems that arise.
- Hypotheses - The perception a competitor has of itself and of its position in relation to the industrial sector and the other firms in it, is of great importance to the analysis. These hypotheses will determine the way in which the firm acts and reacts to a given situation or problem.

This particular analysis is very useful for understanding the potential strategic orientation of a firm. It may also provide a very good idea of the future behavior of the top and middle management of a particular firm.

The six angles of competition

It may be possible to complement an analysis of the competition with the model described by Cantrell (1999) which encourages a multiple-perspective examination of the positions of different competitors and of the current or potential products or services being offered (1). It is linked to the analysis of the competitive environment suggested by Porter (1980) (often referred to as the “five forces”) and to competitive

advantage (Porter, 1985). It also uses the concept of complementariness in the markets, emanating from the work by Brandenburger and Nalebuff (1997).

The starting point for the application of the six-angles model is a functional system comprising the analysis unit, the scope of which can be highly varied. It involves the examination of the object of study from or using several different angles or approaches. These approaches are established according to the double criteria of technology or business model used to create the product or service in question on the one hand, and the buyer needs or wishes to be met by the product created in this way. The functional system of the actual firm being studied can be examined according to the double perspective described above, which includes two aspects present in any product or service:

- Technology or business model.
- Buyer needs or wishes.

The first of these is defined by studying the type of technology or business process applied by a firm in order to create the product or service or to make it accessible to buyers. The second comes down to defining consumer and/or buyer needs. These can be defined by a group of characteristics or attributes which the product must include. The questions regarding the functional system being studied and which need to be answered are:

- Which type of technology or process similar or identical to that used in the product to be examined is available to current or potential competitors?
- Can a product be found that can totally or partially meet the needs of the buyer of the functional system being studied? What role is played by the different substitute or replacement options with regard to the purchasing power of the market at which the product is aimed?

Using the above criteria, all competing products and services can be divided into four different groups, defined by the combination of the previous two key characteristics and always relating to the functional system itself, whose potential for generating sustainable profits is being studied. These four groups will be the initial angles of the model (Figure 5.1).

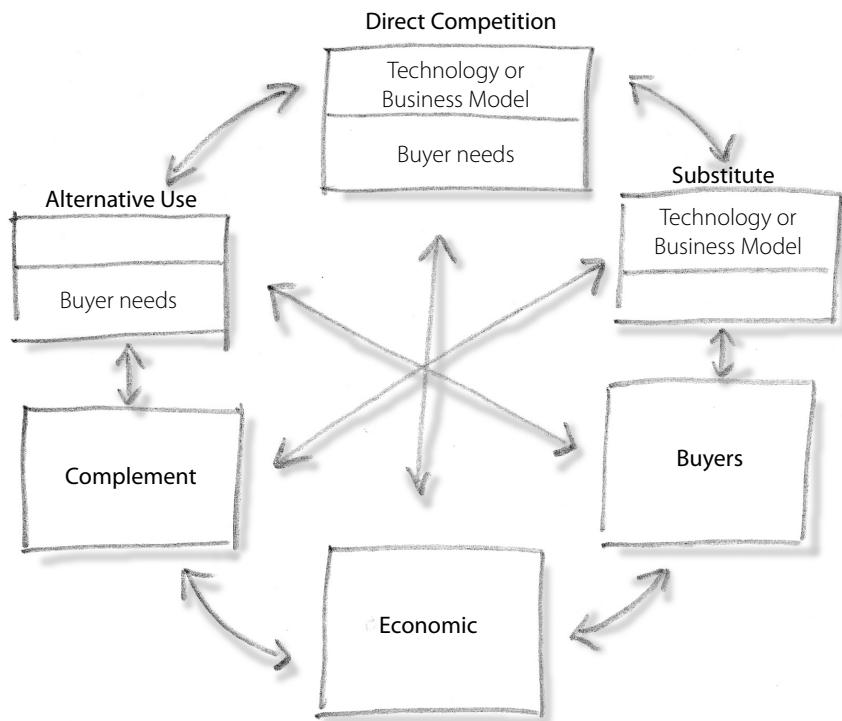


Figure 5.1 - Six angles of competition.

Adapted from Cantrell (1999).

- Angle 1 - Direct Competition: competitors have a product with technology or a process which is similar or identical to and which meets the same market needs as the firm's own product. The group referred to as "angle 1" is made up of direct competitors.
- Angle 2 - Substitute: competitors have a product which uses a similar or identical type of technology or process but they operate in different markets. This angle includes potential rivals which could generate a threat if the market in question were to offer opportunities for a few competitors. For instance, competitors could have patents which would give them a competitive advantage.
- Angle 3 - Alternative Use: competitors have a product which uses a different type of technology or process but which meets the same consumer needs. If they have technology or a process

which is cheaper or superior, they could be a threat and they could harm the competitive position of the product and its cost-effectiveness for the firm. Consumers could choose to adopt the other technology, that is, start to regard these competitors as "angle 1"-type firms, depending on the entry/exit barriers or costs of changing supplier, etc. This angle includes competitors which could generate a substitute product or service.

- Angle 4 - Economic: competitors which in theory will never use technology or enter the same market as the firm being studied, but which compete for consumer spending capacity. Angle 4 includes different unrelated firms which in a specific period of time create between them a flexible and personal "product system" (for example, gas, dinner and movie..., for an evening out in Barcelona). These firms are known as "economic competitors" and they can be identified by looking for common characteristics within the different consumers, such as lifestyle, for instance.

Two further angles can also be added:

- Angle 5 - Complement: corresponds to complementary products, whose joint impact does not have the antagonism one expects to see in competitors but it does increase their profit potential. In fact, when two products complement one another, it is to the client's advantage to buy products offered by more than one firm, at the same time. To be more exact, from the point of view of demand, or in other words, of the client: "An economic actor (firm, product or service) complements you if clients value your product more when they have the product of the other actor than when they have just your product." The most widely-used example of this is that of Intel's microprocessors and Microsoft's operating system Windows: the speed of the former must be supported by the application capacity of the latter, so that sales - and renewals - of one run parallel to the other.
- Angle 6 - Buyers: clients who can start to supply themselves and create, on their own, the service or goods offered by the firm. They can also resort to bartering between individuals. In both of these scenarios, the firm's sales and profits would be threatened.

The six angles of competition model can be put into practice using two fundamental approaches: to define threats (defensive orientation) or to

define opportunities (offensive orientation). In addition, the same model can be applied to firms or to their products and services (functional systems).

Blindspot and Cognitive Biases

Mere observation suggests and a stream of literature supports the view that organizations often suffer from information cognitive limitation (myopia or competitive blindness) (Levitt, 1960; Zajac and Bazerman, 1991; Zahra and Chaples, 1993; Gilad, 1996; Fleisher and Bensoussan 2003; Hotzman, 2005; Sawka, 2006; Fuld, 2006b; p.211). Moreover, and on the other hand, organizational behavior has discussed this point as far as identifying possible reasons for management failure. For instance, Watkins and Bazerman (2003) discussed the human "psychological vulnerabilities" as a cause of poor management decisions.

Corporate illness can occur for several reasons. Andrew (1971, p.60) considers that "the corporate strategist is usually at least intuitively aware of the features of the current environment around him". Manager blind spots (Gilad, Gordon and Sudit; 1993) or corporate myopia can take different forms. Gilad (1994, p.19) identified three main causes of business blind spot: "unchallenged assumptions", "corporate myths" and "corporate taboos", which refers to the notion that decision makers have mistaken ideas regarding the external environment and even regarding the company itself. Porter (1980, p.58-59) described two sets of assumptions competitors can have: about the firm itself and about the industry and the other firms. For instance, in a Swedish electrical company "there was very little that inspired the members of the organization to monitor the environment under a wider perspective. The coming deregulation of the energy market was not a "reality" for most of them, even though they all could read about it in the newspapers" (Hamrefors, 1998b). Blindspots can significantly affect CI. Sawka (2006) considers that the reasons why a great number of American firms do not utilize a systematic CI process is because top management teams frequently are: "Too comfortable with the status quo, Refuse to recognize competitive changes, Stuck in the same old way of doing things, Suspicious of change predictions and Lazy and complacent".

The "blindspot theory", so defined by Gilad (1994), can be applied to the initial framework. Managers could undoubtedly ask themselves a few questions, such as: Is that information available and accessible? What kind of information should be used to achieve a higher level of competitor understanding? How can we exploit the information

through an intelligence function? These questions are related to the topic discussed in the previous chapters.

Fleisher and Bensoussan, (2003, p.114) consider that one of the reasons why the decision process is not carried out properly is because "individuals do analysis on the basis of the data they are happy to have, and not the data they should have". It is often said that 80-90% of the decisions taken in one's personal life are based on emotion, which subsequently attempts to rationalize these decisions. Moreover, for Urbany, *et al.* (2001) blindness will only take place when a firm has to respond to a competitor's action but it will not occur where no response is required. This cognitive dissonance can significantly affect the perception of the needs of a CI system which helps take better decisions. Theoretically, intelligence needs can be under - or overestimated - by the demands of the decision maker. Even if managers agree on the value of good information, which allows them to take better decisions and so accomplish strategic or tactical objectives, they may not have the sufficient resources to study their needs or they may simply suffer blind spots.

Analysis of the general or macro-environment - STEEP⁴

The environment of an organization consists of events or factors which occur outside that organization and which have some influence on the extent to which it is able to achieve its objectives, over which the organization itself has limited or no influence. The study of the environment is, therefore, an area of corporate management which has been a common object of interest for a long time. As a result of the attention given to this matter by experts and directors, a series of concepts and techniques has been developed for the sole purpose of helping organizations to interpret and interact with the environment.

One of the best known approaches is the monitoring and analysis of the factors of the environment⁵. This consists, basically, of gathering, classifying and interpreting information on the environment from the perspective and in the interests of the organization for which the analysis is being carried out. The information can be classified in the following categories or groups of factors, each of which includes the corresponding events and actors:

- Social
- Technological
- Economical

- Ecological
- Political

Each event or decision affecting the firm is classified in accordance with its origin or the institution from which it comes. In fact, the basic diagram for the five STEEP factors can be considered a starting point from which each firm can create, in accordance with its needs and circumstances, its own more detailed system for classifying events occurring in the environment. In a cycle similar to that of CI, the firm's management team, with or without assistance from other experts, gathers, classifies, interprets and uses the relevant information in each period in its decision-making⁶.

Five Forces – Industry analysis

The aim of structural analysis is to determine the characteristics in the firm's environment which directly affect the sector's potential for profit generation and the options and opportunities enjoyed by firms.

In order to carry out a structural analysis of the industry, several forces need to be taken into account through which we gather the factors or traits characterizing the sector and conditioning the behavior of firms in their efforts to achieve results. For this reason, the starting point is to outline the industrial economy, the structure of which conditions the behavior of firms and this, in turn, conditions their results. We are interested here in the profitability or average profits of the sector as a whole, which is the unit of analysis – rather than one individual firm. According to Porter (1985) these forces are:

1. Entry barriers in the economic sector to which the activity belongs:
Entry barriers are the problems, obstacles and costs which a firm must face, directly or indirectly, when it is not in a given sector but wishes to establish itself in that sector. Entry barriers not only include the factors mentioned below but also the probable reaction of firms already in the sector to the entry of a new firm, such as retaliation in pricing and other areas, for instance.
2. Exit Barriers: Exit barriers are the costs, risk or difficulties a firm comes up against when it wishes to cease its activity or withdraw from a specific market or country. These costs tend to be very important when deciding what to do when a firm enters into a critical period.
3. Negotiating power of clients.

- 4.Negotiating power of suppliers: Below is a series of factors which should be taken into account when assessing in which direction the client/supplier relationship is moving.
- 5.Existence of substitute products: Substitute products or services are always a threat to the sector since they represent an alternative purchase option in another sector that meets the needs of the client – in short, the firm's sector is no longer necessary to the client. Substitution often starts as a result of technological changes which give rise to new products. How fast a substitute product is diffused will depend on various factors, including the following: price / results ratio, costs of changing suppliers or inclination of the buyer to substitute. For this reason, the pressure from substitute products is greater in an industry when the price of these is lower and their quality and performance is better and the costs involved in changing one product for another are low.
- 6.Degree of Rivalry in the Sector: Rivalry is understood as the intensity with which firms in a company compete. We are interested here in identifying some of the characteristics of the sector that might condition said intensity – increasing or reducing it.

Table 5.4 summarizes some of the determining factors supporting the situations described above.

Analysis of Competing Hypotheses

The "Analysis of Competing Hypotheses" was proposed by Heuer (1999)⁷ who introduced the idea that it is possible to create several hypotheses for a given topic. The tool represents a systematic process to facilitate good analysis and estimate probability of a given subject. These hypotheses can be very different and may be contradictory, each one competing against the other. The activity can be summarized in a four-step process:

- 1.Identify potential hypothesis. The hypothesis can be generated by using a brainstorming session or open group discussions.
- 2.Create a list of significant evidence against each hypothesis.
- 3.Compare hypothesis against evidence and evaluate those that have only diagnostic value.
- 4.Discuss the relative probability of each hypothesis.

This particular methodology can be applied to the model proposed as a method for structuring the creativity developed in the initial process

Table 5.4 - Factors supporting 5 forces.	
Entry Barriers	Scale economies, Product differentiation, Capital needs, Costs of changing suppliers, Access to distribution channels, Disadvantage in size-related independent costs, Government policy, Degree of vertical integration, Deterrent pricing or International trade tariffs and restrictions.
Exit Barriers	Specialized and durable assets, Fixed exit costs, Strategic interrelationships, Emotional barriers, Social restrictions or Public authority restrictions.
Client Power (Negotiation)	Relative concentration, Purchase volume, Costs of changing supplier, Information on buyer, Reverse integration or Substitute products.
Substitute products	Price/result ratio, Costs of changing supplier, Inclination of buyer to substitute or Trade.
Supplier Power	Production factor differentiation, Costs of changing supplier Existence of substitutes, Concentration of suppliers, Importance of volume for supplier, Cost relative to total purchase in the sector, Impact of goods purchased on cost or differentiation or Forward vertical integration.
(Sensitivity to price)	Total price/purchase, Difference in products, Brand identity, Impact on quality/results, Buyer profit or Decision-maker incentives.
Competitor rivalry	Growth in the sector, Fixed storage costs, Excess intermittent capacity, Product differentiation, Brand identity, Costs of changing supplier, Degree of concentration, Complexity of information or Competitor diversity.

where the actors and the potential relationships are defined. To perform a structured analysis of competing hypotheses, there are some tools which help structure the whole analysis process. DECIDE⁸, for instance, makes the process more visual and supports the building of main and sub-inferences around the initial topic of study.

Scenario planning

The preparation of the firm's strategy requires a forecast or anticipation of the future based on which decisions can be taken regarding the assignation of resources. The use of an alternative forecasting technique to those based strictly on the past – that is, with a historical base –

allowed Royal Dutch Shell to test the power of scenario analysis in the 1970s. In sectors going through turbulent times, and when long-term deliberation is required, historically-based forecasts systematically prove to be inaccurate and as a result unsuitable – or at least insufficient – for use in the strategic field.

On the other hand, a rational and at the same time creative preparation of several alternative future scenarios that could arise in the long-term, prevents us from falling into the trap of believing "a forecast", which in the aforementioned conditions will tend not to come true. Since there is more than one of these alternative future scenarios, they can be designed so as to cover a wide range of situations in the sector or industry, or in general, in the object of study. If the scenarios are used to provide the framework for strategic decisions, they allow the creation of simultaneous "future alternatives" instead of one "single future scenario". This can have two consequences. Firstly, decisions can be adopted using flexible criteria which allow progressive adaptation if necessary to different sets of circumstances whenever they occur. Secondly, it starts the task of monitoring the evolution of the environment, that is, monitoring the extent to which the hypotheses come to fruition as time goes on – as a central element in the process of strategy preparation.

The use of scenarios in Strategic Management is currently an established practice in firms and widely documented in literature. Since the initial articles by Wack (1985a and b) until recent texts which include real applications of the technique, a number of experiments have been carried out which confirm its effectiveness and favorable impact on strategic processes, particularly in large firms.

SWOT Analysis: Strength Weaknesses Opportunities and Threats⁹

This is one of the types of analysis most often used by firms, according to a number of surveys carried out on the subject. It is also considered to be one of the stages in the strategy preparation process which takes place following completion of the analysis of the environment, from which opportunities and threats are pinpointed, and of the internal analysis, from which strengths and weaknesses are obtained.

In order to perform an effective Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis, a few initial considerations should perhaps be defined prior to the discussion of this analytical tool.

1. Strengths and Weaknesses (the internal analysis of a firm) should be defined on the basis of its competitive position – relative to the

competitors, that is - rather than its absolute way. Porter (1980; xviii) stated that a "company's strengths and weaknesses are its profile of assets and skills relative to competitors". Additionally, Pirketon and Wright (2006) suggested the Comparative, Competitive and Perceived Strengths and Weaknesses. Hovis (2000), from Avnet, noted that "we look at all of our market opportunities and competitive threats," ... and went on to say that "We analyze these against our core competencies, so we can understand our competitive weaknesses".

2. Environmental Changes are those changes which in relation to the vulnerability or the strengths of a firm potentially indicate a relative opportunity or risk. See also Porter (1980, p.69).

In an initial approach, this analysis tool can be considered highly descriptive and of a historical nature – according to the terms used in Table 5.3. It should, however, have at least three dimensions in order to emphasize the fact that it is not a mere description of the past. Firstly, the considerations made using the SWOT and the conclusions drawn should have a dynamic nature, that is, they should include change and projection towards the future as well as interaction between the actors. Secondly, the SWOT timeframe, as part of the strategy preparation process, should be at least mid-term, and better still, long-term. Finally, due precisely to the strategic use it is going to have, the SWOT must include comparisons of the firm's own position in relation to competitors, as suggested by Porter (1980).

This technique could also be an instrument for synthesizing the conclusions obtained by other means and for obtaining an overall interpretation of a situation. Thus, the results of other external (and internal) studies – such as SWOT or "five forces" – studies which focus on a competitive and dynamic assessment of the resources and capabilities of a firm - are normally used as starting information for this type of analysis.

5.2 How the models relate to each other

Perhaps, the most difficult task /challenge in the carrying out of a good analysis is getting a complete picture of the environment and therefore a good understanding of what is going on.

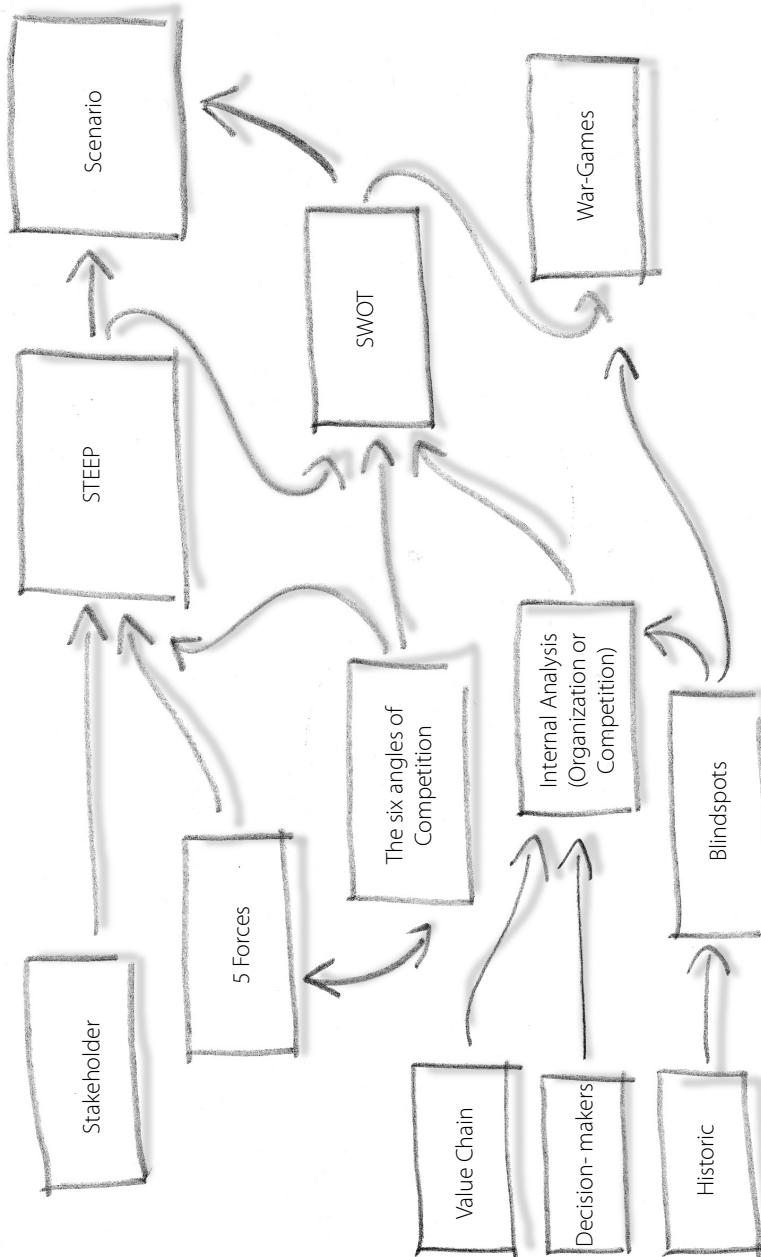


Figure 5.2 - Interconnection between Models.
Sources: Tena and Comai (2005).

We have, however, cast ourselves in the role of implementer of these models, not from the perspective of practical contribution in terms of knowledge, but rather from that of the relationships which may exist between them. We would like to stress, however, that the choice of analysis technique or techniques is very often a decisive factor in the final results of the intelligence task. One way of looking at this complexity is to say that several analysis tools are linked together and each one may contribute to the other by offering improved knowledge. Practice has demonstrated this need to interconnect analysis models for the strategic analysis of the environment (Gillis, 2005)¹⁰, as well as for the technological environment (Nadarajah, 2004) in order to get a global awareness and the valuable contribution that the generation of a joint model, obtained from a composition of other analysis models focusing on determining very specific factors, would bring.

Figure 5.2 provides a simple example of how models can be related. In other words, in order to get the maximum benefit from each model, a greater knowledge of the process would be necessary and this is obtained by carrying out a preliminary study. These steps allow the CI expert to create an analysis process which provides him with the means to study the competitive environment fairly exhaustively.

As shown, the models rely on significant contributions from other tools in order to perform, for instance, a scenario analysis or business war gaming. On the other hand, if we start to analyze the stakeholders or to understand market trends, we may not need to perform any other prior analysis. In addition, the relationships between strategic analysis models (figure 1) show that the more complex analysis models require some preparation. For instance, in order to carry out war gaming or a scenario, a good knowledge of the competitive environment (in other words, of the competition) and of its strengths and weaknesses, is necessary. For this reason, it would be advisable to carry out SWOT and 5-forces (Porter, 1985) or 6-angle analyses of the competition (Cantrell, 1999). The idea of model interconnectivity may suggest the following additional considerations:

- Each model produces knowledge which can be used as a starting point for another model.
- There are potential priorities between analysis models.
- There are simple and more complex analysis models.
- Complex models may need more skills and therefore should be performed once other models are developed.

- Future-oriented models are the ones which are more complex to perform.

This idea may help in the construction of an executive dashboard which may be represented by a unique picture of competitors, market, industry and our organization. A similar work has been suggested by Prescott (2004) who discussed the effectiveness of creating a single map, usually expressed in one table (for instance on one A3 page) with the objective of understanding the environment and the relative competitive position of a firm. The exercise suggested by Prescott should be performed as follows:

- An introduction.
- Study of the external environment (market-sector, technology or five forces).
- Internal study (internal resources, capabilities, value chain, profile).
- SWOT.
- Decision.
- Implication and recommendations.
- Expectations.
- Conclusion.

Several firms appear to apply this tool to their executive dashboard. Embraco, a Brazilian multinational firm which produces refrigerator compressors, uses a similar map in its war room (Junker, 2006). This "Tableau de Bord" provides an overall picture of the current status of the industry where individuals authorized to see it are also invited to add their comments and suggestions. The result is an interactive tool which makes the non-intrusive collection of valuable information from internal human resources possible. Another example, however, in the technology field, was suggested by Nadarajah (2004) who described a model used in Shell Exploration and Production International.

Finally, it is possible to conclude that the decisions taken regarding this kind of intelligence become highly productive when this visualization tool is used.

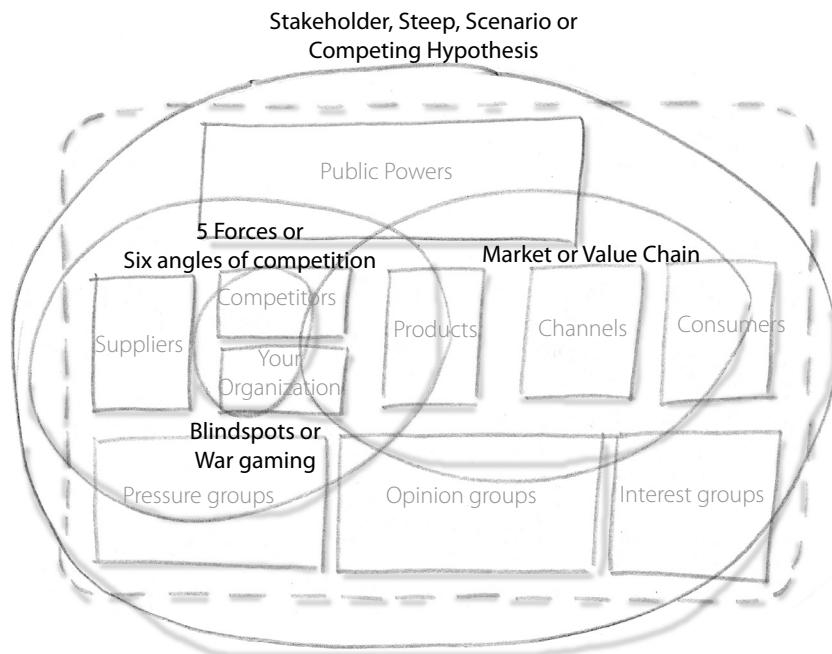


Figure 5.3 - The Competitive Landscape Map and analysis models.

5.3 Applying analysis models to the Competitive Landscape

A successful environmental analysis links firm strategy to the environmental condition. The main reason for using analytical models is to obtain a better picture of the environment. Analysis models should therefore be capable of contributing significantly to the mapping of the environment and the identification of key actors and trends that must be followed.

Observation shows that firms try to use a certain variety of analysis models to understand their own competitive landscape. For instance, patent analysis aids the understanding of which actors are more involved in a particular research area. On the other hand, the value chain analysis may assist in understanding the demand side of a particular firm.

As we have seen in Chapter 2 companies have their own strategic needs and priorities. In other words an organization is interested in a particular topic which is likely to result in the greatest impact. This priority may change over time. Depending on the focus of the firm, a certain competitive landscape will emerge from the application of a specific set of analytical models. In other words, the selection of a set of analytical models determines the quality of the competitive landscape. For instance, the use of Porter's and Cantrell's models will result in a superior understanding of which the potential competitors in a specific field of technology are.

For any professional person, the main challenge is to obtain a picture which is sufficiently clear that it will allow the best decision to be taken. However, this process depends on the type of analytical models used. We are interested in using a set of analytical models which are able to identify the key actors in the competitive landscape. The following figure shows an example of how the models interfere with the map.

5.4 Conclusion

Fleisher and Bensoussan (2003, p.22) suggest a series of criteria for assessing the role and the impact different analysis techniques can have. They use the following dimensions:

- Future-orientation.
- Accuracy.
- Efficiency in the use of resources in CI research, giving more consideration to those requiring less.
- Objectivity, that is, non-subjectivity to the biases of the analysts or decision-makers.
- Usefulness.
- Opportunity and brevity, that is, speed with which the results can be obtained.

Each one of the analysis techniques or models can be assessed in accordance with these criteria and assist in this way in the choice of tools to be used. One last consideration concerns the risks involved in the use of the intelligence obtained, due to the different agendas and interests

of the decision-makers. These risks tend to be divided into two different types:

- Failure of an intelligence system, or of the intelligence producers or analysts to detect or predict a threat, or
- Failure on the part of the intelligence consumers to accept the results obtained and to undertake the corresponding actions in order to neutralize or counteract the threat (Glassford, 2002).

Notes

1. Similar tables can be obtained from: Clarke (2001) "Competitive Intelligence in Service Industries", in Fleisher and Blenkhorn (editors), Managing frontiers in Competitive Intelligence. Quorum Books p.233; Fleisher (2003); Prescott and Grant (1988) or Fleisher and Bensoussan (2003).
2. Fleisher and Bensoussan (2003), Chapter 11.
3. See Fleisher and Bensoussan, (2003).
4. Several competing words have been used in literature to discuss the general or macro-environment, defined here as STEEP. According to Pickton and Wright (2006), any of the following terms may be found: STEP, SLEPT, STEPLE or PEST.
5. In this context, "monitoring" also means "scanning", which has also been applied to the task of gathering and interpreting information on the environment.
6. The STEEP analysis can be seen in greater detail in Johnson, G. and K. Scholes (2001). *Dirección Estratégica. 5ª edición*. Madrid: Prentice-Hall Europe, pp. 90-7, and in Tena, J. (1992). *El entorno de la empresa*. Barcelona: Ediciones 2000, Chap. 3, pp. 31-58. See also Fleisher, C. S. and B. E. Bensoussan (2003) Chap. 17.
7. Heuer's model can be downloaded at the following page: <https://www.cia.gov/csi/books/19104/art11.html>
8. https://analysis.mitre.org/proceedings/Final_Papers_Files/119_Camera_Ready_Paper.pdf#search=%22mitre%20decide%20hypothesis%20Visualizatio n%20Tool%22
9. SWOT is an acronym of: Strengths, Weaknesses, Opportunities and Threats.
10. Gillis proposed several relationships between items for understanding market shifts in the Belgium telecommunications company Proximus Belgacom Mobile.

CHAPTER 6

TAPPING INFORMATION SOURCES

There is no single, "best" source – all come into play at various times.
Kindler (2003) Director de IC Eastman Kodak Company.

6.1 Primary and secondary sources: what is the difference?

The basic method for classifying information sources divides them into primary and secondary. These terms are used frequently in market research and can be described in the following way:

- Primary information consists of data which are available in the environment and which have not been processed or interpreted by an agent or intermediary. The techniques which can be used to obtain primary data are: observation, experimentation or interview.
- Secondary information consists of any data that have undergone some form of processing or interpretation and which have therefore been transformed. Secondary information is found in documents or reports which can be edited into several different formats. We shall see that competitive intelligence incorporates search methods which allow secondary information to be used.

All secondary information is sustained by primary data. The classification of source material into primary and secondary information is a typical function of marketing or market research. Although CI uses both types of information/data, a second perspective, which adopts the concept of

supply, can also be added. In accordance with this approach, sources are classified as internal, external suppliers (information agents or consultants) and field research results¹.

6.2 Classification

We have seen that it is possible to define which information is required and where to look for it, depending on the needs of the directors or decision-makers. We shall now point to several information sources that can be used in occasional and systematic projects in order to meet any kind of intelligence need.

Table 6.1 shows the secondary sources of information that will be dealt with in this section, classified according to three criteria: specificity, accessibility of information on Internet and accessibility. These characteristics can be extremely useful when choosing the type of information to be used in CI projects. The following part of this section describes each of the sources mentioned in the table 6.1.

Associations

Industry or trade associations are one of the most comprehensive sources regarding a sector. Generally speaking, a range of material relating to business associations can be found: specialized magazines, company directories, annual statistics and/or market studies, presentations of new products or links relating to other data sources.

In particular, lists of supplier firms or clients can be obtained. It also provides data on experts or people who are very involved in the sector and who can be contacted in order to obtain more specific information.

Focus Box 6.1 - Technology Watch in ASACMM

ASCAMM is an association in the Spanish plastics and mold sector. This organization provides several competitive intelligence services to its members. For example, ASCAMM carries out customized studies with the aim of analyzing new technologies, products, technological trends or markets. ASCAMM is able to provide this service thanks to its specialized knowledge, its contacts and the technological observation it carries out for its own internal use. (see Saurina, 2003).

Table 6.1 - Classification of Sources.

<i>Source</i>	<i>Degree of specificity</i>	<i>Degree to which information is accessible on the Internet</i>	<i>Degree of accessibility</i>
Associations	M	M	L or H*
Chambers of Commerce	L	L	H
Government and Embassies	L	L-M	M
Libraries	L	L	M or H*
Internet	M	H	H
Databases and Portals	M-H	H	L or H*
Press	L-M	M-H	H
Market studies	L or M*	M-H	H
Specific reports	H	M	L
Case studies	L	H	H
Dissertations	L	L-M	L-M
Aerial or Satellite photos	H	L	H*
Patents and Trade names	H	M or H *	M-H
Trade shows	M-H	L	H
Internal personnel	H	-	M-H
Experts	M-H	-	M
Clients and Suppliers	M-H	L	L
Competition	H	L	L
H = high, M = medium and L= low (*) restricted access or fee required.			

Chambers of Commerce

Chambers of commerce, in contrast to associations, are not limited to one sector since they address the entire industrial framework. In other words, their mission is to promote the growth as well as the economy of the region to which they belong. They often provide information services to their members, publish studies and have a library containing magazines and information on various sectors. They can also act as a network core for contacts of interest.

Embassies and Governments

Despite the diversity in their content and mission, it was considered appropriate for the embassies and governments to be included in the same category, given that they are both public institutions. It is important to note the wide range of information that can be obtained from these organizations, as well as their ability to provide the contacts required in a given search.

Libraries

Libraries are an excellent starting point for many research projects although access to them may be restricted. We would like to underline four basic types of library:

- University or business school: these are the best-stocked libraries but they are normally open only to students at the university or school.
- Specialized, such as chamber of commerce or association libraries. These can be public or private.
- Virtual, on-line libraries.
- Local or public. These are usually of less use in business research.

In the case of the on-line library, as has been noted, visitors can access by telematic means. The highly interesting "Business Information Service" provided by the British Library², is a case worth mentioning .

General and specialized press and alert services

Press articles are the main source of local information used by firms in the course of their daily activity. Press clippings concerning the firm itself, its competitors, new products, emerging technologies, industry and market analysis, top management and key-person positions, are studied by all firms alike.

Focus Box 6.2 - A SME in the digitalization age.

In 1991, Metalquimia, leader in the production of machinery for the meat industry (sausages and ham), pioneered the digital filing of all its technical and scientific articles and the patents relating to its activity. The task required an enormous initial effort in terms of collection, digitalization and classification. Over the years, the investment proved to be highly cost-effective thanks to its capacity for recovering information on patents and other inventions pertaining to the competition during the development process of a new machine or when deciding which technology to use. (Comai and Tena, 2004).

Market and Sectorial studies

Sectorial reports are an optimum resource for any project wishing to acquire a general picture of a sector or market. The reports are sometimes free of charge, such as reports prepared by a statistical or commercial agency, for instance or by financial promotion agencies or associations. Other international reports require a fee, such as the Global Market Information Database by Datamonitor, for instance, or Gale's Business & Company Resource Center, Reuters's Reuters Business Insight and The Economist Intelligence Uni". Whether a researcher chooses a public or a commercial report will depend on the degree of specificity required. For example, whilst it is relatively easy to find public information on the automobile industry, obtaining such detailed information for a niche such as the powdered milk market is far more complicated. If the information is highly detailed, it is very probable that firms will have no choice but to opt for a commission or carry out a specific study.

Case studies, Dissertations and Research projects

Universities and business schools have relationships with firms at local, national and international level (sponsorship, collaboration, etc.). These relationships give rise to some more or less detailed reports and studies on a sector or firm. Despite the fact that these sources of information may relate only to the date on which they were written, they can also be helpful when interpreting the history of the situation being studied³.

Aerial photos (Photogrammetry) and Satellite pictures

Aerial photos and those taken from the ground are used in an enormous range of applications in the field of military and government intelligence. These resources can also be used in the financial or commercial field.

Gilmore (2000), suggests several information types which can be extracted thanks to satellite pictures:

- Information on changes in production plants; for instance, new construction will mean an increase in production or the possible introduction of some new technology, etc.
- Information on the changes occurring in business volume; an increase in shifts means increase in production, etc.
- Information on the flow of materials; change in production, product flow, etc.

At present, some satellite or aerial pictures can be easily obtained from the internet and are free of charge. Google map, for instance, provides an alternative source for this type of information although the pictures are mostly out-of-date.

Patents

Patents as well as commercial brands are good early indicators of the tactical or strategic direction of a firm. An in-depth retrospective study of the patents in a sector allows the following to be defined²:

- the areas of technological specialization and their trends.
- the type of firms and/or countries involved.
- the groups or clusters of firms using or pursuing a specific piece of technology.
- the collaboration networks.
- the cooperation existing between several organizations.
- the experts.

Patent monitoring is decisive in sectors in which patents play a key role, such as in the pharmaceutical industry, for instance. In order to perform a full patent analysis, we recommend the use of several types of software⁵ which make studying the trends and cross-comparisons of multiple patents in a specific field possible.

Internet

Internet is currently a highly powerful support means for searching for and obtaining information. The Internet penetration rate in firms will be a decisive factor in its use. Observations show that large and small Spanish companies frequently use Internet to search for information

(Tena and Comai, 2004, a and b). Despite the fact that Internet is an enormous library, its main value, from the point of view of competitive intelligence, lies in its sheer scope and capacity; it is an excellent means of recovering a large number of information sources which either require a fee to be paid or are free of charge. Generally speaking, we can say that there are three large groups of providers of on-line information (Bates, 2002): those which provide information free of charge, those which provide information for a fee and those which add value.

Databases, Hosts and On-line portals

Nowadays, most secondary information can be obtained from information providers known as "information gatherers" which provide unparalleled access to multiple databases. Initially these databases could only be accessed through a modem connection, using specific software and a search language. Nowadays, the interface with the database end user has become far less complicated and anyone with minimum training can enjoy easy access. An example of this is the information the Thomson group is able to provide thanks to its numerous databases such as Dialog⁶.

Trade shows and Congresses

Trade shows and congresses are often the most important events for a sector. This source should be taken firmly into account as a primary resource for searching for information on the sector or on the firms operating in the market: direct and potential competitors, suppliers, clients and distributors. At the trade shows, the objective of firms is to display and sell their products and services, as well as to monitor the development of the sector based on an observation of the new products being offered by the competition or of emerging technologies⁷.

Internal sources

Internal resources as an information source are managed by defining the internal experts on the one hand, and on the other, the sources which can be linked to the exterior and which have contacts or the ability to relate externally. The following table summarizes the work carried out by Fuld (1988, p.42) and Bernhard (1993, p.175), in which the potential information of each department is shown (see Table 6.2).

Experts

Experts are another rarely used information source which is of particular importance for specialized CI projects. The people interested in the

Table 6.2 - Internal assets. Adapted from Fuld (1988, p.42-57).	
Company's department	Information and/or Sources
Promotion/Advertisement	Advertisement campaign or type of medium used by the competition.
Distribution	Logistics cost, type of distribution networks, warehouse availability and costs, competitor's employees, etc.
Customer Service	Rival's clients, prices or new product features.
Consulting	Industry contacts, Industry trends, etc.
Credit Department	Financial balances, competitor's credit, customer/client contact, etc.
Legal	Patent files, government regulations, etc.
Corporate Library	Databases, books, reports, newsletters, trade magazines, journals, etc.
Personnel or Human Resource	Rival employees, labor relationships, competitor's wanted ads in newspaper, etc.
Production	Production facilities, technology, plant capacity, raw materials, etc.
Public relations	Press releases, communications campaign, publicity, etc.
Purchasing	Vendors, raw material prices and quantities, etc.
Research and Development	Patents, technical journals, university contacts, products, processes, etc.
Sales force	Products, prices, sales reports, etc.
Strategic Planning	Annual reports, speeches, security reports, shareholder information, promotional sheets, etc.
Training	Conferences, courses, employees, etc.
Treasury	Annual reports, proxy statements, pension plans, financial performance, banks loans, etc.

development of a business are a key factor since it is through them that knowledge of the significant changes in a specific sector can be obtained. These people might be consultants, researchers or journalists.

Clients and Suppliers

Clients are an important source of information for finding out the characteristics of a competitor's product, the price of that product or

the sales policies involved. Although this information is tactical, it is often possible to relate it to a more strategic dimension. For instance, by finding out whether the competition is in the process of developing new products based on the motivation analysis which prompted them to perform some research amongst clients or consumers. In addition, a competitor's clients can be interviewed in order to obtain a better idea of that competitor's products, technology or plans.

The competition

Competitors are a direct and highly important source for gathering information on strategy and tactics. The information sources and the techniques are extremely heterogeneous and range from direct observation and purchase of the product, to studying the competitor's webpage. One of the limitations firms can come up against, on occasions, is the ethical problem when internal sources are being used, such as employees, for instance.

Focus Box 6.3 - Marriot and Humint

"When Marriot studied the economy hotel business much of its best information came directly from the competition. The intelligence team, headed by Pillsbury and comprising marketing, finance, human resources and operations personnel, visited nearly 400 hotels over six months. At each location they identified themselves as Marrott employees and asked managers about operation, prices and morale. These rival managers almost unfailingly told Marriott's team anything they wanted to know". (Dumaine, 1988).

6.3 Using the Competitive Landscape Map as a primary source of information

Several studies show that firms tend to use numerous sources of primary information in order to ensure good competitive intelligence for themselves. For instance, the study carried out by Badr and Wright (2004) shows that the majority of firms applying CI to their decision processes use primary sources such as: commercial partners (clients, suppliers or distributors), private sources (information services or professional associations) and informants (consultants, bankers, social contacts or agencies). The use of an extensive contact network allows the firm to generate a better awareness of its environment.

The competitive landscape map works according to the best practice of companies using primary information sources to obtain the

latest insights. Screening for sources or gathering techniques closely related to an actor is a key exercise for any intelligence team! Aside from the fact that an actor is an object of study, it can also provide direct information.

Once the organization has mapped the competitive landscape, it is good practice to understand who will provide the information required. Moreover, a list of secondary sources may be associated to each actor. For instance, Pettersson (2001) indicates that two key questions must be asked when monitoring an actor: "Which players are we going to monitor? What about these players are we interested in?" In addition to this perspective, a potential or tentative list of information sources should be included. Thus, a good exercise for any organization is to use a similar matrix, provided as an example in Table 6.3 and which links together key players, objects, sources and technique.

6.4 Conclusion

However, there are some limitations and difficulties in the recovery of information. Some of the problems experienced when gathering information may be due to several factors such as availability or accessibility of said information. West (2001, p.51), in his classification of the details and difficulties experienced when recovering the information, places the primary external information at the top of the list. Although a given piece of information may be available, it has not always been

Table 6.3 - Actors and Information sources.

<i>Which</i>	<i>What</i>	<i>Where</i>	<i>How</i>	<i>Who</i>
Actor 1	Advertising campaign	Specialized and/or consumer magazine	Monthly review of the subscribed magazine	Intelligence group and communication dept.
Actor 2	Raw material and production process.	Suppliers, Competitor's production plant.	Direct observation and interviews.	Intelligence team and external consultant.
Actor 3

published. The knowledge that this information is generally available is therefore important if users are to have access to it at the appropriate time, depending on the type of project.

Notes

1. See Luers, K. (2003). "Expanding the CI mentality". *SCIP Newsletter*, 1(25).
2. See: <http://www.bl.uk/collections/business/business.html>
3. For case study see for instance The European Case Clearing House: <http://www.ecch.com>
4. See Lozano, P. (2003). "El análisis de patentes en el mundo de la inteligencia tecnológica competitiva". *Puzzle – Revista Hispana de la Inteligencia Competitiva*, 2(8):10-13.
5. To get more information about the different tools available in the market and how they work please see: Vergara, J. C., Comai A. and J. Tena (2006). *Software for Technological Patent Intelligence*. Barcelona, Emecom Ediciones. (http://www.emecom-ediciones.com/eng_index.htm).
6. <http://www.dialog.com>
7. See Tena, J. and A. Comai (2003). "Inteligencia Competitiva en Ferias y Congresos: ¿Cómo obtener la mejor información de una feria o evento comercial?" *Puzzle – Revista Hispana de la Inteligencia Competitiva*, 3(9):18-24. (http://www.revista-puzzle.com/puzzle_sum_9.htm).

CHAPTER 7

COMPETITIVE EARLY WARNING

7.1 Introduction

One of the main applications of the model described in this book is anticipatory analysis whereby changes in the competitive landscape are studied, mapped and monitored in order to allow firms to take prompt strategic action. We have already seen that actors are good sources for detecting changes and future events. In this case the model can be transformed into a Competitive Early Warning (CEW) system which provides a base from which the environment can be predicted.

As discussed in the previous chapters, anticipation is the key factor in this process. It is something that companies consider important when examining the competitive landscape. Jan Herring, in an interview with Puzzle Magazine staff¹ asserted that "If a company wants to stay in the forefront, it needs to incorporate new techniques into its business and competitive intelligence. ... The forecasting of new technology, regulations, competitor intentions and plans is also very important for leading companies". Therefore the challenger of any intelligence analyst is to gather new insights and develop an anticipatory process capable of answering decision-makers' questions in advance. Inaccuracy and outdated information is the greatest barrier to the use of competitive intelligence in the company (Howard, 2006).

An early warning system produces a systematic process of gathering and analyzing data based on several indicators prepared from

the different key actors in a specific environment. These indicators are defined by the organization and prevent a business threat or provide a new opportunity to the company. The mapping of the environment as well as the establishment of a CEW requires certain creative exercises to be performed before the indicators to be followed by the firm can be established.

7.2 Some definitions

Several definitions have appeared relating to the concept of Early Warning as follows:

"Early warning intelligence provides executives with timely, valuable information about the market and competitors that enables them to make strategic and tactical decisions more quickly" (Wergeles, 2005; p.44).

"Early Warning Systems are created in order to identify risks and uncertainties and to minimize them by continuously monitoring events that might lead to a threatening situation. By providing an early enough warning that a potentially harmful sequence of events has been evolving, it should be possible to take actions in a proactive manner and thus avoid the threat" (GIA, 2006).

"The strategic early warning process focuses on (or I should say, elevates alertness to) weak, ambiguous, early signals, sometimes years before management is due to place them on its radar screen" (Gilad, 2006).

Based on these definitions, it is evident that there are two main perspectives involved in the process:

1. Changes in the environment are primarily perceived as a risk (Gilad, 2003; Kempfer, 2002), a threat (Lam, 2003) or a crisis responsible for conflict (Weiss and Hubert, 2001; p.35).
2. Changes in the environment are considered to be business opportunities (Curteny, 2001, p.140; Wheaton, 2004; Chritensen, et al., 2004, p.3; Hedin, 2006).

Neither of these is mutually exclusive. Both perspectives should be included in the definition which ought to lean towards the more general. According to GIA (2006), CEW should cover business opportunities. Perhaps, some of the above definitions do not highlight the fact that CEW does not only look at risk but also at opportunities. Observation indicates that managers are keener in their search for opportunities rather than for risk. Even if the process is of the same nature, several authors have attempted to separate threats from opportunities on the basis that threats or risk have slightly more impact than opportunities.

On the other hand, CEW can be applied to both the tactical and strategic activity of the firm. The objective is to anticipate events! Some competitive early warning systems are applied to those events which have an immediate impact/implication on/for the firm's activity. For instance, Gilad (2006) considers that "the discipline of strategic early warning calls for direct observation of early signs of the underlying change drivers in any given industry. For example, signs of changing characteristics and therefore bargaining power of the buyers of one's products or services should be on the radar of a strategic early warning process years before competitors identify and act on this same change driver".

Although a CEW system is developed using a formal planning process, there is an additional format for CEW. Two types of application can therefore be observed:

1. **Proactive**, which includes a pre-preparation of the environment allowing potential changes to be monitored. Actors and relationships are identified.
2. **Passive**, managers are open to unexpected changes which generate a surprise (see Ansoff and McDonnell, 1990; p.19). Once the surprise has been detected, a new element will be introduced into the CEW. For instance, a manufacturing accident may involve a series of possible outcomes none of which had been allowed for by the CEW system². This event will cause a new investigation project to be opened which will focus on this particular topic.

7.3 Similarities with Enterprise Risk Management

Another area or discipline which has emphasized the concept of anticipating environmental events is Enterprise Risk Management (ERM).

Despite its early warning process, which may be more suited to tighter military practices³, the ERM has been applied to the management field and can be used in any type of organization. PWC (2000)⁴ observed that ERM has been rapidly adopted due to the usefulness within firms. PWC consider that Risk Management has been driven by a number of environmental conditions including:

- Convergence and globalization.
- Interrelationships with outside parties.
- Complexity of markets and investments.
- Scarcity of qualified people.
- Dependence on technology.
- Competitive differentiation.
- Tightening Margins.
- Highly Regulated and Litigious Environment.

Several definitions have been adopted for ERM depending on the primary focus given to the risk analysis. For instance, COSO - the Committee of Sponsoring Organizations of the Treadway Commission suggests the following definition⁵:

“Enterprise risk management is a process, effected by an entity’s board of directors, management and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives”.

The Dictionary of Accounting⁶ defines risk management as:

“a process that aims to help organizations understand, evaluate, and take action on all their risks. A private-sector organization will need to identify and evaluate the trade-off between risk and expected return and to choose the course of action that will help it to maximize its value. Risk management is also relevant to the public sector. Common forms of risk management include taking out insurance against possible losses and the use of derivatives to hedge against changes in interest rates, exchange rates, or other economic variables. A bank will always try to manage the risks

involved in lending by adjusting the level of charges and interest rates to compensate for a percentage of losses".

Performing ERM is not an easy task. It involves several competences and resources in order to avoid an under- or over-estimation of the environment. It requires careful attention to be paid to the firms' strategic priorities. ERM can, indeed, have a similar focus to the intelligence process (see Chapter 2). Risk is normally associated with the level of change of a particular environment (Osborn and Hunt, 1974; p.233). Beasley, *et al.* (2006) considers that new organizations which adopt ERM recognize that "changes in technology, globalization, corporate financing, and numerous other risk drivers were increasing the complexity and volume of risks".

Finally, we can adopt the approach taken by Lam (2003), who identified the following four reasons for implementing an ERM system:

- Managing risk is the management's job. For instance, one of the duties included in the policies of the management committee is to observe the environment, as suggested in the model prepared by Garratt (2003, p.7).
- Managing risk can reduce earnings volatility.
- Managing risk can maximize shareholder value⁷.
- Risk management promotes job and financial security.

To summarize, there are several characteristics which can be identified as being quite common in the above definitions for ERM and CEW:

- It focuses on the risks and opportunities relating to the key priorities of a given firm, organization or country.
- It is based on or developed as a systematic process.
- It monitors key trends and changes in a particular environment.
- It tries to anticipate the trends which have a specific impact on the organization or country.
- It supports the decision-making process.

7.4 Anticipation: the purpose of any CEW system

CEW is a tool which all organizations should incorporate into their decision making process and competitive intelligence function.

Anticipation is the key to a good intelligence unit. According to Gilad (2006) "the mission of strategic early warning is to minimize strategic surprises".

The purpose of any early warning process is to anticipate possible environmental changes. A recent study shows that firms do not invest sufficient resources in predictive analysis models⁸. Sawka (2006) considers that if an organization is to be an "eagle", it should have the following key characteristic: to demonstrate the "ability to recognize significant industry shifts and assess their impact". Lam (2003, p.32) argues that "it is important that the risk indicators include forward-looking measures that serve as "early warning signals". Thus, anticipation is the essence of the entire process.

Competitive early warning can be applied to the business/private sector and also to the public sector. Indeed, sophisticated early warning systems can be successfully applied in public organizations monitoring bank and currency crises in emerging countries⁹, for instance, or macro-environmental issues. An interesting example is provided by the Brazilian organization Embrapa¹⁰ which developed its own process for predicting the future of the agricultural industry.

The period of time between the awareness of a potential threat and the beginning of the event is also frequently referred to in military intelligence warning terminology. The so-called "warning lead time" is the period of "time between the issuing of the strategic warning and the beginning of hostilities"¹¹. This time may include strategic warning pre-decision time and post-decision time. When a warning is received by or from the intelligence unit, there will always be a certain period of time between this and the time a decision is made. This is called pre-decision time. Once the decision has been made, there is another period of time before the event happens. This period is called post-decision time (see Figure 7.1). In both time spans, the decision is made on the assumption that the event will occur and always in a future-oriented perspective. This definition, in a hypothetical situation, might consider that:

- the intelligence function does not fail in detecting early signals.
- these signals are well understood and there is no misperception of them¹².
- the analysis and the decision is made on time.

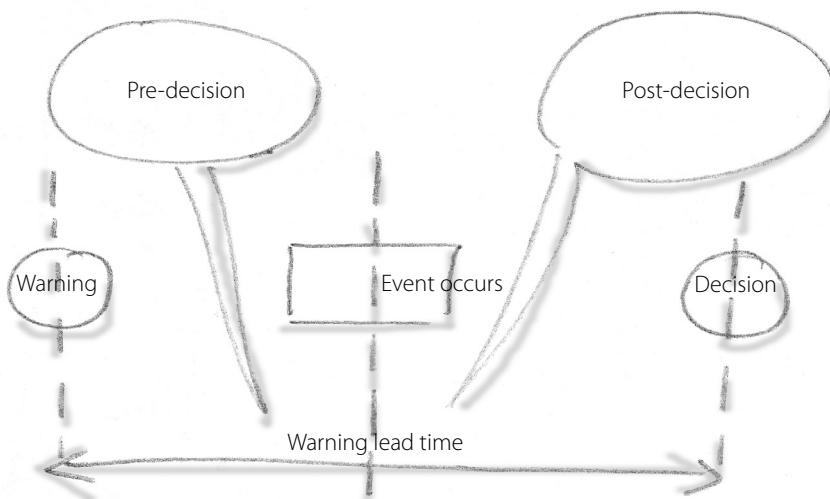


Figure 7.1 - The warning lead time.

The time available for possible action, which is the period between the detection of a signal and the event, was also largely discussed in strategic management.

Of course any process can fail to detect weak signals. However, the objective is to reduce error by adopting a formal CEW. Weiss and Hubert (2002, p.35) argue that "The capacity to predict and diagnose emerging conflicts should be housed in some type of early-warning system. Good analysis is ultimately wasted if it does not get into the hands of decision makers. And in recent years, considerable emphasis has been placed on the need for a conflict early warning system that can better guarantee that political actors will hear alarms."

Competitive Intelligence literature has also been very active in promoting anticipatory analysis of the environment and gathering intelligence from indicators (Gilad and Gilad, 1985). For instance, Lendrevie and Lindon, (1990) defined competitor intelligence as "those activities by which a company determines and understands its industry, identifies and understands its competitors, determines and understands their strengths and weaknesses, and anticipates their moves".

Possible threats may also be identified using a group of experts. For instance, the unofficial group of key French executives who make up

the “Groupe la Fontaine”, Group I is a good example of how a small group of individuals can help detect unexpected environmental changes (see example in the following Box).

Focus Box 7.1 - The case of “Groupe la Fontaine”

The case of “Groupe la Fontaine”¹³, unofficial association of approximately 30 large French multinationals, can serve as an example of the use of experts for an ERM system. The group, or association, aims, amongst other things, to study and anticipate potential risk, detected through rumors, and to assess the possibilities of this risk from within. This task, allows, for example, jobs to be maintained as suggested by Lam (2003, p.6) and it could, therefore, be one of the main reasons for establishing a risk management process. The group acts as an informal network of experts handling privileged information meaning that any events considered potentially threatening to the firms, can be discussed, compared and assessed. Informal groups often make a powerful contribution to the firm’s strategy (Noria, 2002). In addition, the network operates as a warning system for risks that have been identified. A few of the points that can be perceived as being key elements in this group of companies are (Emanuely, 2006):

- Defensive and offensive relationship.
- Lobbying and pressure.
- Financial intelligence (Geopolitical and cultural field).
- Anticipation of events through rumors.
- Use of organic networks consisting of unofficial internal contacts connected to the exterior¹⁴.
- Evaluation of information in order to create credibility in the decision process.
- Cooperation in the intelligence field, with competitors, perhaps.

7.5 Competitive Early Warning Models

Several models have been suggested for formalizing a CEW system. The processes suggested up until now have all included similar elements. One of the most interesting models, however, was the one suggested by Gilad (2003, p.60). This model pinpoints three key areas of activity and three routes of information (see Figure 7.2).

Another model discussed by Hedin (2006) and based on Rosén’s model (1996), underlines early signals and indicators as the sources of any warning system. The process shows that the analysis of any information produced by a possible intelligence team should be transmitted to the decision makers at the same time the action is taken (Figure 7.3). On

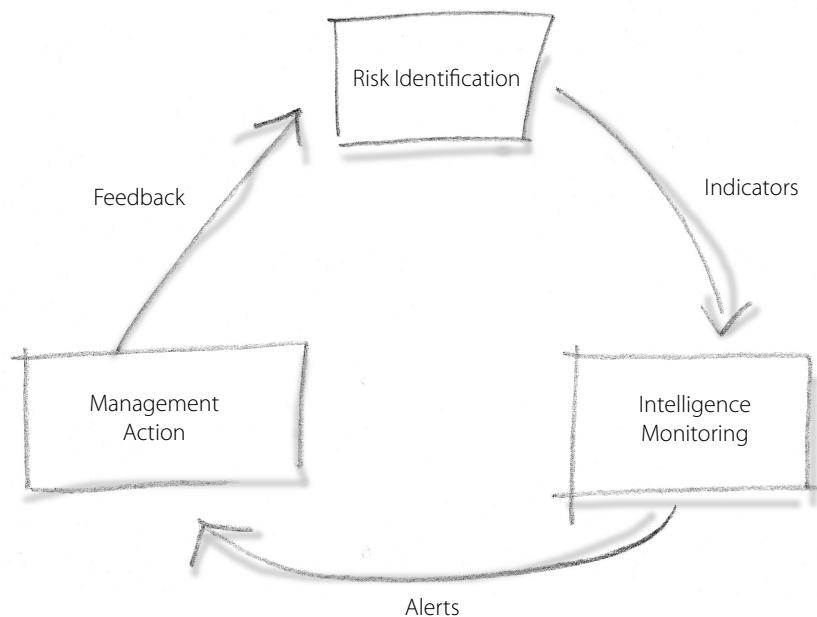


Figure 7.2 - The Strategic Early Warning Triangle.
Adapted from Gilad (2004, p.60).

the other hand, Bernhard (2003, p.42-43) considers that CEW is based on four critical factors:

- Identify the warning problem (KITs and KIQs)¹⁵
- Develop scenarios for threats and opportunities
- Identify a list of possible indicators
- Prepare a plan for collection and monitoring

Going back to Enterprise Risk Management, several models have been presented. Kempfer (2002) suggested that a risk management process consists of six elements.

1. Threat assessment
2. Vulnerability assessment
3. Hazard assessment
4. Operational space visualization
5. Event modeling
6. Situational awareness



Figure 7.3 - The Risk Management Cycle.
Adapted from Shelfer (2003).

Shelfer (2003) also suggests that risk management should be a priority in CI know-how. She suggests a risk management cycle in which risk is identified and mitigated through planning and action (see Figure 7.3).

The list of models introduced is not exhaustive but it does show the differences and commonalities between several frameworks. To summarize, Table 7.1 compares the different processes discussed above:

7.6 How the competitive landscape model works as an early warning

The competitive landscape model provides a comprehensive map on which the early warning system can be established. We consider that an alert system may fall into several generic categories involving nine steps:

Table 7.1 - Comparison between CEW models.				
Stage	Authors			
	Helper (2003)	Bernhard (2003)	Gilad (2004)	Hedin (2006)
Identify Risk	yes	yes	yes	-
Prioritizing Risks	-	-	yes	-
Assessing Threats	yes	yes	-	-
Indicators	-	yes	yes	yes
Risk Management Plan	yes	yes	-	-
Intelligence monitoring	-	yes	yes	-
Alerts (Gilad) / Information (Hedin)	-	-	yes	yes
Analysis	-	-	-	yes
Action	yes	-	yes	yes
Re-evaluation or feedback	yes	-	yes	yes

1. Pinpointing the key actors
2. Assessing the critical issues
3. Measuring changes
4. Evaluating potential opportunities and/or threats
5. Building indicators
6. Defining information sources
7. Detecting early signals of changes
8. Planning the radar
9. Communicating intelligence
10. Taking strategic action

The following is the step by step process for building a CEW.

1. Pinpointing the Key Actors (*what to watch*)

This initial step provides a creative activity whereby the company, at corporate or at the strategic business level, is involved in assessing the environment. According to the CEW process, the company should decide the initial focus. For instance, should the early warning system be implemented for business or for strategic operations? Is the early warning system designed for only one or for more than one department? What are the organization's business priorities?

In Chapter 2 we saw that a CI function can have several focuses, defined by the dimensions of the CI function. "At Citigroup, for example, former CEO John Reed built an early warning system around threshold values that he called "trip wires" (Curteny, 2001; p.139). In contrast, for Air Products, the "early warning system is oriented to technology scouting, uncovering new developments and capabilities from around the world" (Brenner, 2005; p.9).

A CEW system is applied to meet information and strategic needs. There are several analytical models which can be applied in order to identify the critical issues on which the company should focus. For instance, Gilad (2003, p.70) considers that the most popular tools are informal discussion, focus groups, scenario and or war gaming. Hedin (2006) suggested scenario, competitor signaling, product or technology lifecycle and value chain analysis as being the conceptual frameworks most able to introduce the firm to the CEW system. Chapter 5 provided an idea of which techniques may be applied in order to achieve a better understanding of the competitive landscape. None of these are mutually exclusive. However, those tools which incorporate creativity and dynamism into the analysis such as brainstorming or war gaming and scenario¹⁶, may contribute significantly to the establishment of a proactive CEW system.

In order to define the CEW domains, a Competitive Landscape Map may help identify the actors and the potential relationship of which the company should keep track (see Chapters 3, 4 and 6). Figure 7.4 provides an example in the case of the Swedish National Financial Management Authority (Pettersson, 2001) which shows the information areas a specific department should be monitoring. These areas are: agencies, consulting competitors, politics & law, suppliers, market trends, other financial systems and technology. Several actors were classified under each area in order to give the early warning system an organized form. These actors were then given a specific topic to monitor.

2. Assessing critical issues (prioritization)

The second task carried out by an EWS is to assign the critical issues relating to the firm's strategic position and prioritize them accordingly. Bernahrd (2003, p.43), for instance, considers the following question: "Are firms making decisions to increase or decrease their ultimate chance of success?"

This activity forces the organization to think about what the strategic issues are (internal strategic plans and where resources are invested in order to obtain profit) and prioritize them accordingly. CEW dispatches should be tailored according to key business priorities. For instance, Wergeles (2005), suggested how to create a watch list which he defined as "a set of prioritized issues that senior managers have identified as important for your company's success". According to (Wheaton, 2004; p.6) "Analysts and their decision-makers must jointly define each problem (and there are many) to understand the problem's scope and the organization's concerns".

Once these strategic findings have been prepared, the company is ready to define the various critical topics. Leavitt (2006) suggests

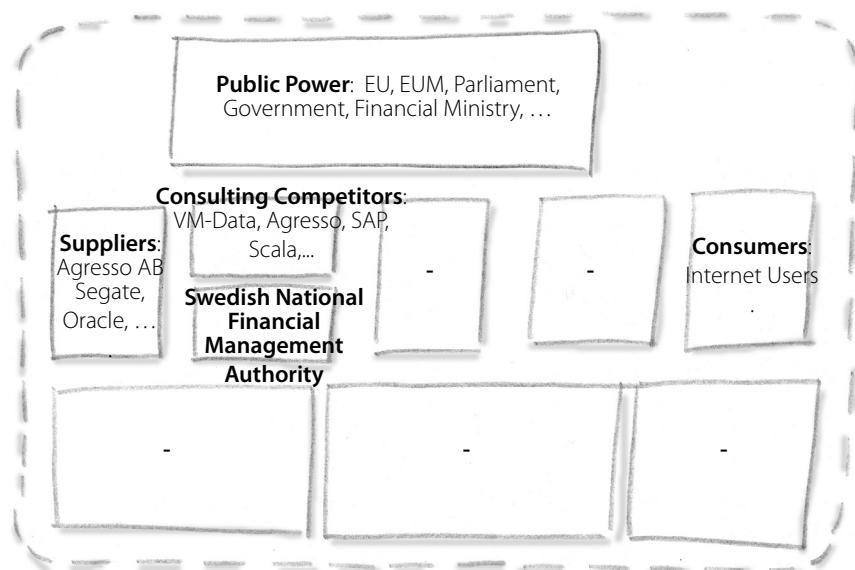


Figure 7.4 - The Swedish National Financial Management Authority's Competitive Map. Sources: Based on the information provided by (Pettersson, 2001)¹⁷

that once a risk domain has been identified and characterized, it must be prioritized and mitigated. The author suggests using a matrix with several issues on the horizontal axis and several answers or solutions to hypothetical situations on the vertical axis.

3. Measuring changes (what changes and how fast?)

An increase in the complexity of the business environment affects capacity to gather and obtain information. In order to cope with environmental changes, organizations should be able to assess which trends (or factors) are changing and to what degree. The ideal CEW system would allocate emergency resources to those activities which monitor any events changing on a continuous and unpredictable basis. However, it should never exclude other events which are susceptible to less change but which have a major impact on the organization.

To create an effective and efficient CEW process, organizations must put the different types of resources and capabilities together to make a formalized process. The result will be a set of specific competences focused in such a way as to help managers take better decisions and improve the organization's response to environmental constraints and changes.

3. Evaluating potential opportunities and/or threats (what impacts)

As discussed in Chapter 5, when changes are compared to the critical issues, it is possible to assess which changes have a positive (or negative) effect on the organization's resources. The result can be commonly referred to as opportunities and threats.

A good exercise, therefore, is to make a proper comparison so that the changes which may be able to procure the highest positive or negative impact on our organization can be identified. In Metlife, for instance, once a potential opportunity has been identified, the management team should be able to answer the following key questions (Hirschhorn, 2004):

- How big is the opportunity?
- How fast is it growing?
- What are the key growth factors?
- Is the market concentrated/fragmented?
- Who are the key competitors, what is their market share?
- What are the strengths/weaknesses of key competitors?
- Is this a viable opportunity for the company?

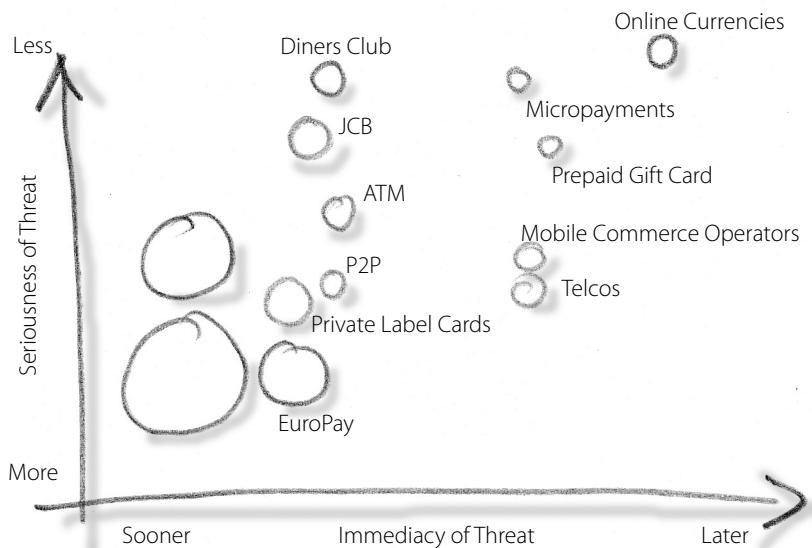


Figure 7.5 - Monitoring the Payment Landscape.

Adapted from Fehringer and Sawka (2002).

On the other hand, another interesting example is provided by Visa International, which, after a scenario analysis, was able to provide several potential risks based on the immediacy and seriousness of potential alternative payment systems or companies (see Figure 7.5).

Using the various tools/matrixes available for prioritizing threats or opportunities, it is possible to obtain an understanding of which actors are the sources of possible behavior or trends that have a serious impact on our firm. It is thus possible to highlight those actors which have an immediate and serious impact on the firm using the Competitive Landscape Map.

4. Building Indicators (what to measure)

A CEW system must incorporate indicators or, as defined by Lam (2003, p.21), "early warning" (ex-ante) risk indicators. It could be said, that indicators are specific aspects an organization uses to monitor and verify the extent of change. Indicators are potential sources of intelligence that can be defined as "gateways" or "signposts" (Gilad, 2004; p.116-117).

Indicators can be quantitative or qualitative. Quantitative indicators are numerical evidence which can be reported by a statistical

tool. Hedin (2006) suggested that health and fitness trends would consist of the following indicators: number of fitness centers, number of fitness magazines, and numbers of health and fitness articles or health survey results.

They can also be a correlation between other related sources. On the other hand, qualitative indicators are intangible and it may not therefore be possible to associate them with a number. An example of this might be the new advertising campaigns of a rival hoping to strengthen its position in a specific consumer segment (Gilad, 2003; p117).

Indicators may not only be obtained from direct sources. Building indicators is a creative exercise. It can involve several sources of information, the combination of which produces an indicator. Fuld (1995) referred to creative indicators, indicators which do not give you the correct answer but which make an approximation of what it might be. If you do not have the information you should perhaps invent it by making speculative and close assumptions. Competing hypothesis analysis discussed in Chapter 5 suggested how to estimate future outcomes using several competing assumptions.

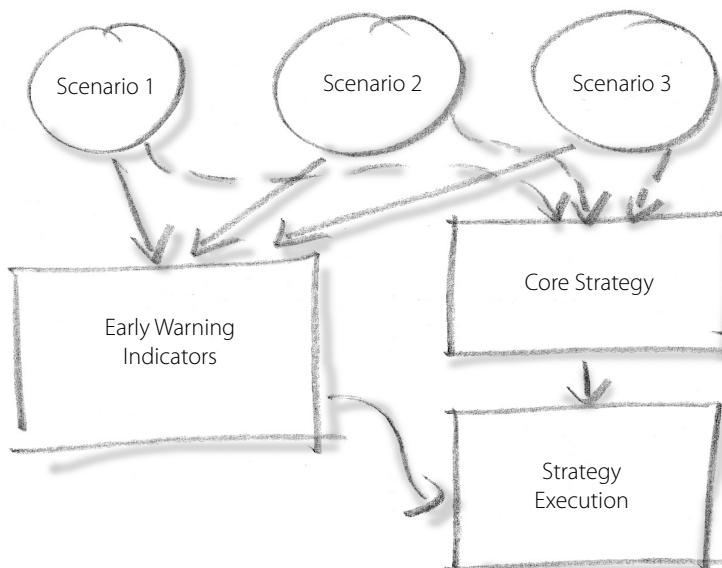


Figure 7.6 - Scenarios and Early Warning.
Adapted from OutwardInsight¹⁸

Analytical models such as scenario planning have also been used as a starting point for indicators included in the CEW process (Fink, et al. 2004). For instance, Fiora from Outward Insight¹⁸ considers that scenario analysis defines the indicators for an early warning system and creates the basis of the possible strategy that a company should follow for each scenario. In this framework, the CEW system plays a key role revealing the scenario most likely to emerge and is therefore related to the execution of a pre-prepared strategy (see Figure 7.6).

Direct and indirect indicators can be retrieved from the Competitive Landscape Map. The activity can be as follows:

1. Direct indicators. Each actor uses a specific indicator. For instance, the energy consumption of a particular region can be forecasted by monitoring the growth in the number of small and medium-size companies in that region whilst a look at the square meters of a conventional apartment built in a specific country will help to understand which kind of refrigerators people are likely to buy and therefore, which components will be needed¹⁹.
2. Indirect indicators are produced using a regression analysis of several actors. When actors are combined together, the indirect indicator will be associated to the actors present at the beginning of the relationship. As shown in Chapter 4, the relationships between actors can be multiple and there could potentially, therefore, be an indicator associated to each actor. These actors are the source of weak signals.

5. Identify signs of change

CEW allows organizations to identify potential sources of weak signals. In our perspective (using the competitive landscape) signals come from those actors we have previously identified as main sources relating to a possible trend or change.

Signals can be identified in several fields. The use of weak signals may be the basis for predicting significant competitor changes. For Porter (1980, p.75), market signals are “any action by a competitor that provides a direct or indirect indication of its intentions, motives, goals or internal situation”. Constant competitor analysis with the objective of detecting weak signals can be referred to as competitor signaling as suggested by Hedin (2006). For Christensen, et al. (2004, p.4) signals

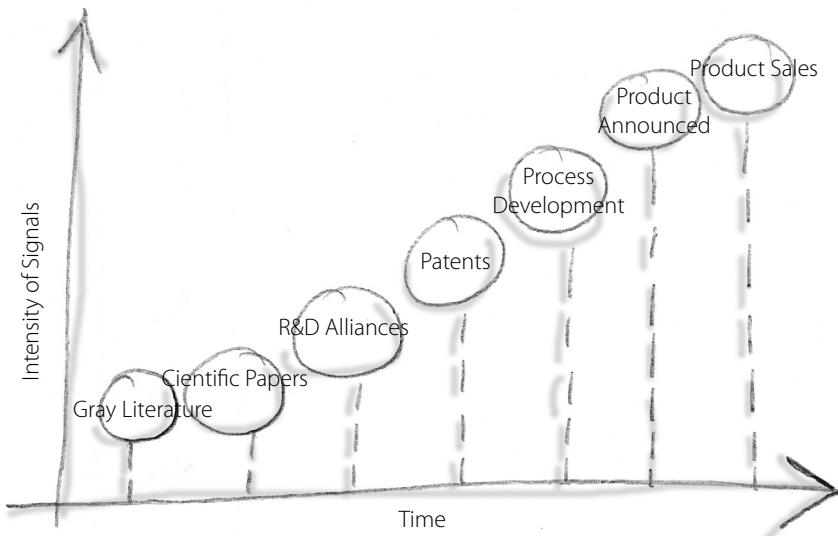


Figure 7.7 - Weak signals in AirProducts.
Adapted from Brenner (2005, p.8).

of disruptive business models are generated by shifts in the market or by new consumer behavior. On the other hand, the monitoring of signals in technology also provides a competitive advantage. New product introduction signals can be observed in the chemical industry as suggested by Brenner (2005). He considers that "initially, very weak signals come from verbal information and gray literature (i.e. outside of mainstream publishers and databases). Then we might see papers coming out, announcements of R&D alliances or joint ventures, and then perhaps patents". Figure 7.6 shows how weak signals change to stronger signals over time.

Similarly, Vergara (2005) discussed the weak signals of a new drug development in the pharmaceutical industry. By attempting to obtain weak signals from pre-clinical activity, for instance, an early

warning system may give the firm more opportunity to take anticipatory action regarding the possible launch of the new drug.

In short, some examples of signals are: (i) announcements in the media of the future movements of the competitor, such as in which businesses he is planning to expand, for instance, which new markets he is getting into, etc.; (ii) interpretation or justification of the results or actions once they have been achieved or carried out, such as the results of a promotion, for instance, or a particular price reduction; (iii) public discussion among competitors on the subject of the industry, at a convention, for instance or at a samples fair; (iv) explanations from competitors relating to things they could have done; (v) competitive practices which are very different to those followed to date by the firm or by the whole industry; (vi) competitive actions or initiatives which are damaging to the competitor or to competitors, such as vigorous retaliation with regard to pricing or brand, appeal to the restrictive practices court, etc.

Each signal can, however, have its own characteristics. Table 7.2 summarizes the different attributes associated to the signals:

Table 7.2 - Signal Characteristics.	
Type	Description
Weak	The signal is not entirely visible. For instance, individuals interested in a product type may be new competitors. Others might be rumors or simply observations. Perception of these signals plays a key role.
Strong	Strong signals are evident. An article claiming that competitors are investing monetary resources in R&D may be preventing new product development. Strong signals may be the sum of several weak signals the company has collected from its competitive landscape.
Immediate	The potential event will occur within a short period of time.
Latent	The potential event will not be visible for some time.

An in-depth study of the actors, their relationships and influences is necessary in order to define the process. The detection of weak signals from the changes occurring in the environment is the key to the early warning system, although these signals can be unexpected. According to Porter (1985, p.192) "early-warning signals translate into early-mover advantages. Companies can take actions that help them see the signals".

7. Linking Sources (where to obtain indicators)

The use of intelligence to detect signals through several sources makes decisions more effective. An organization must therefore be aware of all the possible sources which could help it to understand and predict future outcomes (see Chapter 6). Sawka (2006) considers that one of the key characteristics of a successful firm is that where all sources, internal and external, gather intelligence.

The next step, therefore, is to identify any sources which might provide reliable data and which could be transformed into intelligence. Each source will be related to a specific actor identified as critical in the previous stage of the CEW process. For instance, information concerning a politician and his policy, which could have a major impact on our business, can be obtained directly by monitoring all possible public speeches and meetings and from the media, radio, television and newspapers.

As discussed previously a source can provide significant information which makes it easy to establish an indicator. However, some sources may provide only a partial picture. Several sources of information are therefore required. For instance, the number of flats produced by the construction industry may be obtained from a national association, statistical agency or local government permitting the construction of buildings.

8. Planning the radar (how to follow changes)

Once the first part of the system has been set-up, the intelligence team must define a detailed plan for the investment of their own resources (human and monetary). For example, in the previous case, should the intelligence team follow the politician personally or employ a private investigator²⁰?

In order to accomplish this, the organization must make a formal plan for its monitoring activity. A plan may include human and non-human activities, information sources and timetables. Some monitoring activity can be carried out using information technology. For instance, sources available on internet such as blogs, RSS, vertical portals or invisible webs can be operated using web grabbers or crawlers. These tools are able to perform regular comparison analysis every day allowing respective changes to be detected. The intelligence group should use a combination of human and non-human activity to gather weak signals from multiple sources so that changes are detected at an early stage.

9. Communication

Communication of the changes a firm has been able to track is an important step in the CEW (see, for instance, Leavitt (2006). There are several mediums for communicating intelligence to decision makers. Each key issue could have its own group of intelligence products. For instance, having performed a scenario analysis, the company Visa has identified several key sources in need of a systematic intelligence process relating to two key changing forces: current competitors and emerging payment solutions (Fehringer and Sawka, 2002).

Table 7.2 - Products at Visa International. Adapted from: Fehringer and Sawka (2002).	
<i>Current competitors</i>	<i>Emerging Payment Solutions</i>
Daily Tracking Activity	Daly Tracking Activity
CI Newsletter	CI Newsletter
Competitive Analysis	Company Profiles
Competitor Advertisement Studies	Analyses/Briefings

10. Taking strategic action

The process will be considered finished as soon as a firm is able to take the best action for its strategy. Many intelligence failures have been due not so much to the information itself but rather to the way in which decision makers have been taking prompt action. A good warning system works in such a way that information or intelligence will be available before the event occurs thus giving decision makers a certain degree of flexibility. A good competitive early warning system works best when the decision is made according to the potential opportunity or threat.

7.7 Conclusion

The competitive landscape may provide the framework on which the early warning system is established. However, anticipation of the competitive landscape can have a different purpose. Anecdotic observations demonstrate that organizations monitor the competitive landscape in different ways and they have different priorities. Thus the model must be adapted to the specific needs of each company.

Notes

1. This interview with Jan Herring was published in the magazine "Puzzle- Revista Hispana de la Inteligencia Competitiva", No. 7. See also: <http://www.revistapuzzle.com>
2. See for example, competitor value chain control discussed by Hedin (2006).
3. The early warning process has been applied to other fields such as natural disaster prevention, for instance, or ecological change, medical illness detection, technology information intrusion detection, etc.
4. "Risk Management. Building Competitive Advantage for Tomorrow's Leading Investment Managers" is the white paper published by PricewaterhouseCoopers LLP in 2000.
5. http://www.coso.org/Publications/ERM/COSO_ERM_ExecutiveSummary.pdf
6. Ed. Jonathan Law and Gary Owe. Oxford University Press, 1999. Oxford Reference Online. Oxford University Press.
7. See, for instance, the case of the "Groupe la Fontaine" in Emanuely (2006). See also: www.groupelafontaine.com/
8. "Ostriches & Eagles Competitive Intelligence Usage and Understanding in U.S. Companies", reported by Outward Insights, February 2005.
9. <http://www.iie.com>
10. Castro, A. M. G. de; Lima, S. M. V.; Maestrey, A.; Ramírez Gastón, J.; Santamaría Guerra, J.; Mengo, O. and A. Ayala Sánchez (2005). *Proyecto Quo Vadis: el futuro de la investigación agrícola y la innovación institucional en América Latina y el Caribe*. Quito: Red Nuevo Paradigma.
11. See pages 34-35 of "Intelligence Warning Terminology", October 2001 published by the Joint Military Intelligence College, Washington, DC, USA.
12. See the topic on "Blindspots" discussed in Chapter 5.
13. <http://www.groupelafontaine.com/>
14. For more information see Felix Cardoso (2006, p.158).
15. KITs stands for Key Intelligence Topics and KIQs stands for Key Intelligence Questions.
16. Scenario has been widely discussed as being an analytical mode which contributes significantly to the Competitive Early Warning System.
17. This particular case is limited due to the type of framework used by the author.
18. This white paper, entitled "Use Early Warning To Strengthen Scenario Planning" can be downloaded from http://www.outwardinsights.com/news_pubs.html
19. These examples have been extrapolated from the case company União Energia presented by Latino de Carvalho (2006) and Embraco presented by Junker (2006).

20. This option may not be possible in all countries. In Spain, for instance, the use of a private investigator is not illegal.

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