

From Strategic Management to Information Strategy Management It will be possible to increase the available time Strategic Decision Making?



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ABSTRACT: This article investigates the main concepts and activities of information, while it is in the strategic decision-making system, treated by literature. Since information has become the source of value of the global economy for organizations, information plays a key role in contributing to the development of organizations' performance by selecting business-relevant information. The relationship between strategic information management and business activities contributes to the strategic decision-making process for a more effective and efficient decision-making process.

Understanding the importance of information as a strategic resource in the management of organizations is becoming more important for strategists, than the formulation of strategic models, of industrial society. In the 21st century no Manager will be able to define and implement the strategy successfully, without a basic understanding of information for strategic decision making.

KEYWORDS: Strategy, Strategic Information, Information Profitability, Strategic Decision Making, Strategic Information Surveillance.

INTRODUCTION

For some years now there have been numerous attempts to improve the flow of information in business. During this period the watchword has been information and we have seen an important transformation in the nature of business. We have moved from an economy based on industry and transportation to one based on information and knowledge.

Nowadays it is the information and knowledge that unite us and many people currently gain their whole way of life by acquiring information in one way or another. This dependence on information will increase in the coming years. Today and above all tomorrow the basic understanding of information will be as important, as a few years ago was the expertise in the fields, in the age of agriculture or the basic knowledge of industries, in industrial society.

(Lyman, 2001), estimates that the amount of information available doubles in two years. In 2003, he estimated that the amount of information stored on computers (data), printed and recorded on optical and digital media, reached about 8 exabytes, equivalent to 1 gigabyte per inhabitant of the planet!

This article seeks to contribute to the understanding of the importance of resource information in the definition of the strategy. Although organizations use different models to formulate the strategy, managers give different importance to information, so the implementation of the strategy often falls short of expectations.

Some managers mainly privilege quantitative information (past or forecast) over qualitative information, since it is easier to obtain, can be compared and give them greater comfort in decision making, while qualitative information is very subjective and depends mainly on the interpretation of strategists about future development prospects.

Managing resource information today represents an increasingly pressing need in any business. The organizations of the 21st century compete in a turbulent and complex environment full of interrelations that remain in a constant state of change, and in this context, information represents an increasingly valuable resource, necessary for managers to understand, interpret and respond to changes in the environment in order to reach or maintain a favorable position in the market.

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The article shows organizations can obtain and maintain an above-normal return by maintaining or resolving product and market factor information imperfections. This theoretical structure helps understand how organizations can achieve sustainable competitive advantages by maintaining or altering the imperfections of product and market factor information.

It also spells out information as a resource with above-normal feedback and how it is reflected in a new type of profitability, called information **profitability**. From this, strategic information can be understood as a continuous research of the profitability of information, analogous to the notion of strategy of the basic resources of organizations (Mahoney *et al.*, 1992, p. 364) and to the notion of economic profitability of transaction cost theory (Williamson, 1999). The analysis of the different variables of the context in which the strategy formulation process occurs allows us to understand these results.

By its nature, the review of the literature we carried out allows us to focus on the development of the article, but we seek to realize a theoretical development for the construction of the theory of strategic information, having as the theoretical basis the Basic Resource of organizations and the transaction costs of economic theory.

EMPIRICAL-METHODOLOGICAL FRAMEWORK AND RESEARCH

Theme and Search Problem

Strategic Information is a little-known term in the world of business and people. Knowledge is something that resides in the human mind, built on the individual's relationship with the world. To understand the information it is necessary to identify the environment in which this process occurs, that is, the organizational environment. Organizations are formed by groups of people with different objectives who unite in favor of one or more common objectives, usually delimited by the vision of managers.

Organizations are complex systems with the predominance of information when, the whole is more than the sum of the parts. And the more complex, the more its whole far outweighs the parts and the more it becomes autonomous and unpredictable, because it escapes more and more mechanical determinisms. The growing importance of emerging, independent properties that make up the complex system implies the preponderance of information (the "form") on matter (the "substance"): all complexity is also a dematerialization. Complexity and density of information are synonymous (Halévy, 2008, p.11). Second (Mattelart, 2002) information is in the whole context of society and organizations.

Decisions and actions are the final product of the work of groups and people. The strategic decisions taken explicitly or implicitly precede any action, regardless of the process, by which they are taken, either by the formal hierarchy or by the broad participation of the intermediate level groups or by omission. The decision-making process is complex, so it poses some problems to the groups, in terms of approach methodology, to choose the relevant and timely information, for decision making, among the various alternatives.

Questions for debate

1. Will it be possible to increase the time available for Strategic Decision Making?
2. What is the concept of strategic information?
3. Is there the Theory of Strategic Information?

Goals

Information Science evolves into new stages of dialogue and insertion in social sciences. Reflection on the evolution of Information Science, its relations with other sciences and as a model of science, as a whole, is fundamental for research to continue and incorporate all accumulated knowledge. Since scientific research is one of the main ways for the formulation of theories of an area, what is perceived is that the research of Information Science, has been over the last decades, consolidating itself and opening new horizons of discussions. Great contribution has been made by professors and researchers at the various World Universities. There are many different challenges for Information Science. As applied science, it needs to respond to the search for information and, as an object of research, to the fundamental conceptual needs of the area. The realization and sociability of research are the safest ways to create and share new paradigms. Thus, it becomes increasingly important to seek the theoretical, philosophical and social foundation in the Field of Information Science and above all to further strengthen its scientific community.

This article seeks to contribute to the understanding of the conceptual importance of the term Strategic Information, in the context of Business Sciences, Information Science and Economic Sciences, from a theoretical framework.

Methodological Approach

As for its nature, the research is qualitative since it does not claim to quantify events or privilege the statistical study. Its focus is on obtaining descriptive data, i.e., the incidence of topics of interest in three fields, Information Science, Business Sciences and Economic Sciences. About the extremities, the research is exploratory in nature and descriptive in nature, to the extent that the

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technique used is categorized, consensually, as a study of direct documentation, which provides for consultation with sources related to the study in different media, printed or electronic.

The complexity and turbulence of society have led to the globalization of information as essential processes for the development and innovation of science and technology. Information is the source of energy that drives the Society's engines, but in order to use it we need to convert it into a usable form: **knowledge**

Society is complex in technological innovation and communication, in which there is the creation of new environments and changes in people's dynamics, in the way people understand reality, changing the way, how they relate to the environment, with other people and how, conceive themselves in the face of their own reality. Both senses can be understood, as a result of the informational revolution, promoted mainly from the attempts to understand human intelligence, via computational bases.

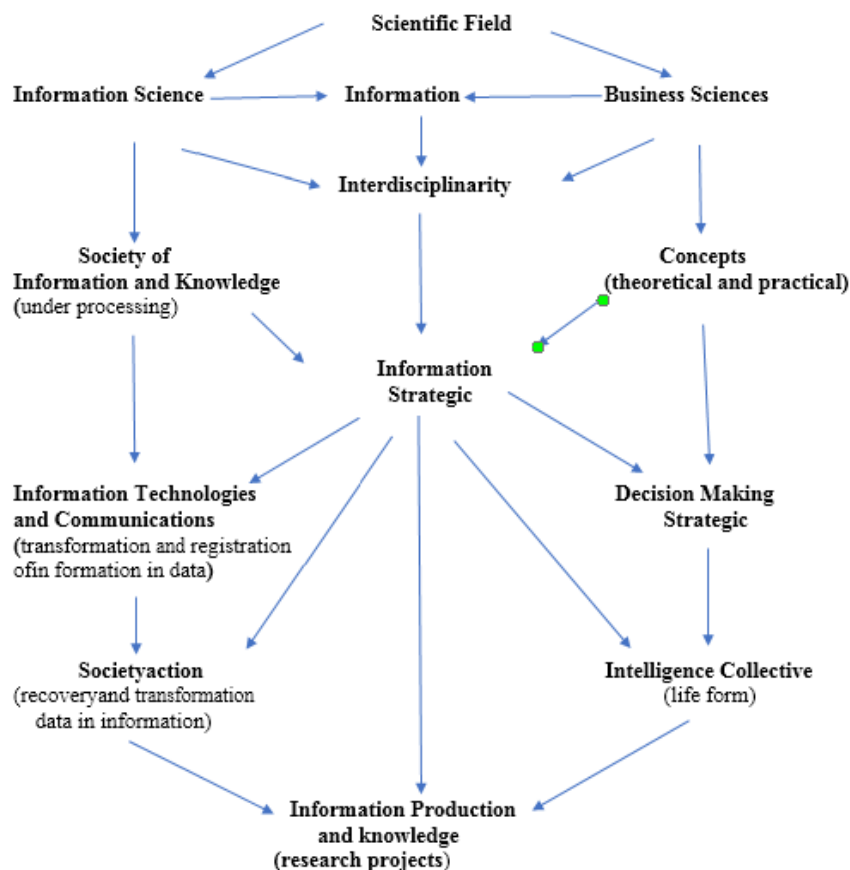
Consequently, the premodern notion of information as *in-formation that shapes* or shapes the human mind is gradually replacing information as a "data structure" (Boland, 1987) representing intangible realities too great to be experienced directly by people's sense. Information has become an object, separate from human experiences and minds.

The research method is likely to cause two or more sciences to interact with each other. This interaction can go from simple communication of ideas to the mutual integration of concepts, epistemology, terminology, methodology, procedures, data and research organization.

This is an exploratory study that seeks to clarify and organize the concepts presented in the literature of Information Science, Economic Sciences and Business Sciences. It is not a proposal of new terms and concepts, but an organization that allows identifying a common denominator, among the different concepts already indicated in the literature, so that it allows its grouping by identity, application / use and pertinence / aggregation of value in the context, in which the terms are inserted. Data collection is characterized by bibliographical research, terms and concepts.

It is a descriptive and analytical approach seeking to know and analyze existing cultural and/or scientific contributions on these aspects, from the review of existing literature. The research was structured based on the systemic approach, for the understanding of the problems of Information, Knowledge, Communication, The Prendizagem and the Information Economy, in this Complex and Turbulent Society. We represent this conceptual network, as follows:

Figure 1 - Conceptual Model of Information Strategic



Source: own elaboration

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It presents the model of approach for intervention in information actions, in the academic space, with the purpose of production and sharing of information and knowledge, among the participants, besides and promote the development of skills of search, recovery, organization, appropriation, production and dissemination of information relevant to scientific researchers, managers and other interest groups, in society.

INFORMATION SCIENCE

Origin

It is difficult to specify the emergence of a new science even if it is a recent scientific discipline such as information sciences. However (Foskett, 1969) and Ingwersen, 1992) mark the date of 1958 as one of the milestones in the formalization of the new discipline when the Institute of Information Scientists (IIS) was founded in the United Kingdom. (Meadows, 1990) describes the origin of the new discipline from specialized libraries (in industries and other organizations). Second, (Meadows, 1990) the discipline underwent a sharp development after the Second World War due to the emergence of the Mathematical Theory of Information described by Shannon and Weaver in the late 1940s. This theory was adopted by many other areas because it explains the problems of transmitting messages through mechanical communication channels. The industrialization of the commercial press promoted the bibliographic explosion, a phenomenon no less important than the advent of the Gutenberg press around 1450, the effects of which became more evident after World War II.

His contribution to the development of information sciences was small but important for the history of the area, as it attracted attention to two needs. The first to clearly define the character of the information with which professionals in the area cared and, the second, to define the conceptual structure to be applied in the organization of that type of information. Second, (Days, 2002), is a consensus among the authors of the area that The Information Sciences appears in the mid-twentieth century. Also, according to the authors, it is in the 1960s that the first concepts and definitions are elaborated and the debate begins on the origin and theoretical foundations of the new area of knowledge" (Pineiro & Loureiro, 1995, p. 42). The authors point out several facts that occurred in the 1960s that signified the real milestones of the formation of a new disciplinary field:

- The conference held at *the Georgia Institute of Technology* in 1962,
- *The Weinberg Report* in 1963,
- Mikhailov's Computer Work in 1966
- The study by Rees and Saracevic in 1967 and,
- Borko's definition, *in Information Science: what is it?*, in 1968.

(Borko, 1968) defined Information Sciences as a discipline that investigates the properties and behavior of information, the forces that govern its flow and the means of processing to optimize its accessibility and use. It relates to the body of knowledge related to the production, collection, organization, storage, retrieval, interpretation, transmission, transformation and use of information. This includes the investigation of the representation of information in natural and artificial systems (...). It has a pure science component that investigates the essence of the subject without considering its application and another component of applied science that develops services and products (...). For (Goffman, 1970), the goal of Information Sciences is to establish a unified scientific approach to study the various phenomena that involve the notion of information, whether such phenomena are found in biological processes in human existence or in machines created by humans. Consequently, the subject matter should be related to the establishment of a set of fundamental principles governing the behaviour of the entire communication process and its associated information systems.

(Griffith, 1980) proposed a similar definition that establishes The Information Sciences as a discipline that seeks the creation and structuring of a body of scientific, technological and systemic knowledge related to the transfer of information.

(Saracevic, 1991) studied the evolution of Information Sciences and defined it as "a field dedicated to scientific issues and professional practice focused on the problems of effective communication of knowledge and knowledge records between human beings, in the social, institutional or individual context of the use and needs of information. In addressing these issues, the advantages of modern information and communication technologies (ICT's)" are considered of particular interest.

The Information Sciences was born after the Second World War, to solve a major problem, which was also the great concern of both documentation and information retrieval, which is to gather, organize and make accessible the cultural, scientific and technological knowledge produced worldwide. The Information Sciences is a recent science and was born from the exact sciences, that is, seeking to achieve an exact knowledge from the inspiration of mathematical and quantitative models. (Bronowski, 1977, p. 47), based on objectivity, seeking to formulate universal laws of the "behavior" of information. Strongly influenced by empirical

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sciences, it was intended to establish universal laws that represented the informational phenomenon and hence the need to resort to mathematical (information theory), physical (entropy) or biological (epidemiological theory) models.

In the seventies, a character comes into play who redirects the focus of information sciences: "man (decision-makers) and as such the human and social sciences also contribute their methods and practices to the composition of this emerging science" (Cardoso, 1996: 73-74). Initially linked to computing and automatic information retrieval, according to González de Gomez, 2000, p. 6, from the 1970s onwards, he effectively enrolled in the social sciences as a "symptom of the ongoing changes that would affect the production and direction of knowledge in the West" (GonzálezdeGomez, 2000, p. 2). It is, from that decade on, that we can refer to the "social foundations of information". However, some relevant questions are being raised to us right now, what is the branch of science that Information Sciences is closest to? What theories, concepts and methods feed The Information Sciences?

The first studies in information sciences as social science were to study social reality from a statistical perspective, that is, quantitative. (Berger & Luckmann, 1985) presented reality as something that is built socially and not as an existence in itself and pave the way for the understanding of information not as a given, a thing that would have meaning and an importance per itself, but *as a process*. That is, something that will be perceived and understood in various ways by people, which according to the definition of (Borko, 1968) on behavior and information flows, is something that is outside people and with the definition of (Buckland, 1991) that sees information as "thing" outside people.

The subjectivity of information becomes fundamental for the understanding of the different planes of reality and the distinction between the different forms of knowledge and the mechanisms of its configuration and legitimation. People need to be included in studies on information and in their daily interactions, forms of expression and language, rites and social processes. Several studies can be presented as an example of the incorporation of these concepts in the context of information science studies, such as the *do sensemaking approach* inaugurated by Dervin, Atwood & Palmour, MacMullin & Taylor's studies on people's values, cognitive nature studies inspired by Maturana's theory & Varela of the hermeneutic approach of Information Sciences, the studies of (Capurro, 2003) on information networks based on the theoretical framework of (Bourdieu, 1983. p. 46-81), as well as bibliometric studies and scientific communication and the contributions of Archaeology of knowledge of Foucault and sociology of science (Latour, Knorr-Cetina, among others).

The Information Sciences is a discipline that has a very broad field of practices but does not yet have a theoretical field defined as is the case of other areas of knowledge such as Linguistics, Anthropology and others. It has not yet reached a theoretical construction that integrates all its concepts and practices. Therefore, it operates based on more or less fragmented theoretical constructions, for example, the Representation of Information would be a construct, among others etc. The most important characteristic of information sciences is its interdisciplinary nature in which the magnitude of the problems faced (ecological, ethnic and demographic) is demanding innovative solutions. The Information Sciences have been consolidating from elements "borrowed" among others, by mathematics, physics, biology, psychology, sociology, anthropology, semiology and the theory of communication and other sciences that contributed to its foundation and applicability, (Cardoso, 1996, p. 74). *"Information science is not to be looked at as a classical discipline, but as a prototype of the new kind of science"*(Wersig, 1993, p. 235).

Information Sciences evolves into new stages of dialogue and insertion in the social sciences. The reflection on the evolution of information sciences, its relations with the social sciences and as a model of science, is fundamental for research to continue and to incorporate all the knowledge accumulated in this process. Since scientific research is one of the main ways for the formulation of theories of an area, what is perceived is that research in Information Sciences, has been consolidating and opening new horizons of discussions. Great contribution has been made by professors and researchers at various international universities.

It can be seen that some important steps have been taken to theoretically strengthen the area of Information Sciences and that research in Information Sciences is expanding and has a Scientific Community that over the years has been consolidating internationally. There are many different challenges that present themselves today, for the Information Sciences. As applied science, it needs to respond to the search for information from society and, as an object of research, to the needs of fundamental conceptual members of the area. The realization and sociability of research are the safest ways to create and share new paradigms. Thus, it becomes increasingly important to seek the theoretical, philosophical and social foundation in the Field of Information Sciences and above all to further strengthen its scientific community.

Interdisciplinarity

There are at least four distinct currents of thoughts that reflect on interdisciplinarity in information sciences (Fernandes and Cendón, 2009). The first places that the Information Sciences, not having a defined theoretical framework, captures concepts from other sciences to be theoretically based, and the interdisciplinary characteristic is born from the unique amalgam established within the Information Sciences. The second to the company / organization that the object of research of information sciences,

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information, is common to all areas of knowledge, so the Information Sciences is interdisciplinary by nature, being present in the epistemological core of science, as a whole. For the third, there is only interdisciplinarity when conceptual discoveries and practices modify both disciplines involved, at times when concepts and methodologies, shared by both disciplines, merge and change each other. Finally, the fourth current of thought the company / organization that the interdisciplinarity of information sciences, the way it is proposed and discussed does not exist, since there is no mutual influence of the knowledge of both disciplines, occurring a mere juxtaposition of concepts.

(Borko, 1968), lists the following interdisciplinary areas: Mathematics, Logic, Linguistics, Psychology, Computer Technology, Operations Research, Graphic Arts, Communication, Librarians and Administration. (Merta, 1968, Cherni and Gilyarevsky, 1969) and (Mikhailov and al, 1969) highlight the following fields of knowledge, in which there is an interdisciplinary dialogue with The Information Sciences, with explanations related to each contribution, among which the methodological: Mathematics and Mathematical Logic; Linguistics and semiotics; Communication, Cognitive Science, Psychology, Librarian economics, Cybernetics and Mathematical Theory of Communication; Reprography and Theory of Automatic Knowledge; Systems Engineering and Computer Science.

(Harmon, 1971), synthesizes Kitwanga's thinking, from which identifies the strongest interdisciplinary relationship of the field with behavioral sciences, and all those that have "... a marked common trend for model construction" and concludes that Information Sciences is an "objective, subjective and practical research area". (Wersig and Nevelling, 1975), in the search for the "place" of information sciences, the reasons for its emergence and what social needs it meets, considering different orientations: for the phenomenon, for the media, for technologies and for purposes.

Second, (Japiassou, 1976), interdisciplinarity can be understood as the "dialogue between the areas of knowledge. For (Foskett, 1980), the field "... it arises from a cross-fertilization of ideas that include the old art of librarians economics, the new area of computing, the arts of the new media, and those sciences such as Psychology and Linguistics, which in its modern form has to do directly with all the problems of communication – the transfer of information".

(Japiassou and Marcondes, 1991), define interdisciplinarity as: "method of research and teaching capable of making two or more disciplines interact with each other; this interaction can go from simple communication of ideas to the mutual integration of concepts, epistemology, terminology, methodology, procedures, data and research organization.

(Farm, 1995) explains that the interdisciplinary movement emerged significantly in Europe in the 1960s, a period in which a new university and school status was claimed that broke with education in parts, which was completely alienated from everyday issues. The evolution of the movement towards interdisciplinarity was divided didactically by the author into three periods, including the 1970s, 1980s and 1990s, also presenting information on the context of the development of interdisciplinarity, mainly in the area of education:

- 1st period - 1970: characterized by the search for a philosophical explanation of interdisciplinarity; with the participation of institutions such as UNESCO in 1961 and the Organization for Economic Cooperation and Development (OECD) in 1972.
- 2nd period – 1980: period of search for a sociological guideline; attempts to explain a method for interdisciplinarity.
- 3rd period – 1990: phase of search for an anthropological project, towards the construction of a theory of interdisciplinarity.

There are two main approaches to studies on interdisciplinarity: the search for the unity of knowledge (objective of constructing a universalizing perspective from the gathering of knowledge around a given situation, especially scientific **knowledge**) and seeking to solve concrete problems (particular and specific practice to deal more with situations related to everyday existence, especially social problems, than those that are proper to science, with emphasis on the instrumental issue), (Fourez, 1995), apud (Lavaqui; Batista, 2007).

Second, (Cardoso, 1996, p. 74) the interdisciplinarity of Information Sciences is present as a component of the current Society Science, in which the magnitude of the problems faced (ecological, ethnic, demographic) are demanding innovative and plural solutions. The Information Sciences are consolidated from the elements "borrowed" by mathematics, physics, biology, psychology, sociology, anthropology, semiology and the theory of communication and many other sciences that contributed to its foundation and applicability.

Second, (Gomes, 2001) the "Information Sciences is a contextual science, that is, it is a science applied to contexts and can be characterized as an interdisciplinary science". Interdisciplinarity is often confused with the mere incorporation of concepts, theories and methods of one discipline on the other, since it uses terms and concepts of a diversity of other sciences, in which it seeks its theoretical bases, such as computer science, business sciences, linguistics, communication, cognitive sciences, education.

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Interdisciplinarity is not a simple appropriation of concepts, theories and methods from one area of knowledge to another. It is only realized from the concrete dialogue between the different areas of knowledge. Effective interdisciplinarity is one that is updated in the field of theoretical abstractions, the establishment of methodologies, but also in the interventions that the different areas of knowledge promote in the social.

For (Pinheiro, 2004), is the "mutual appropriation of methodologies, principles, theories, concepts and constructs between two or more areas of knowledge (Pinheiro, 2004). Klein (2004) the company / organization that the concept of interdisciplinarity is linked to that of complexity. The convergence between these two ideas has significant consequences for understanding the nature of knowledge, the solution of scientific problems and the dialogue between the sciences and the humanities.

Second, (Klein, 2004) the nature of complex systems offers a comprehensive rationality for interdisciplinary studies, unifies seemingly divergent approaches and serves as a criterion to direct the integration process. The ultimate goal of interdisciplinary research is the understanding of the part of the world modeled by a complex system. Interdisciplinarity is characterized by the exchange of knowledge, the transformation of the areas of knowledge and the sharing of objectives.

Second (Klein, 2004) the interdisciplinary approach originates in the need to understand complex objects, which a single area of knowledge would be unable to treat with the proper scope. Among these we can mention the phenomena of the explosion of information and cultural diversity, social and technological problems or multifaceted concepts such as "body", "mind" and "life". It is perceived the development of a significant number of multi- or interdisciplinary areas of knowledge since the mid-20th century and among them are information sciences. The interdisciplinary experiences present three basic characteristics, according to (Domingues, 2005):

- Approximation of different disciplinary fields for the solution of specific problems.
- methodology sharing.
- Generation of new disciplines after cooperation and merger between the fields.

From the many ideas around the term, many taxonomy possibilities have also emerged to better understand how interdisciplinarity occurs. Classifications of interdisciplinarity individually or collectively, several proposals have been and continue to be presented by scholars. (Lenoir, 2003) proposes two categories based on the type of action in which they occur, that is, scientific interdisciplinarity and school interdisciplinarity.

Regarding the scope of scientific interdisciplinarity, the OECD (Klein, 1990) presents two categories: endogenous interdisciplinarity and interdisciplinarity exogenous to the scientific community, that is, the methodology was adopted by will or internal requirement of the discipline or it is a requirement of an external character to science. Some authors have a more specific classification, dividing interdisciplinarity according to the way it is found in research.

For (Heinz Heckhausen, 1972, 2006), interdisciplinarity can be categorized from the levels of interaction in which they occur. In increasing order, they would be: heterogeneous interdisciplinarity; pseudo-interdisciplinarity; auxiliary interdisciplinarity; composite interdisciplinarity; complementary interdisciplinarity; and unifying interdisciplinarity.

For (Boisot, 1972), the level of interaction present in interdisciplinarity is divided into: structural interdisciplinarity; linear interdisciplinarity; and restrictive interdisciplinarity. (Huerkamp et al., 1978) proposes the following classification: methodological interdisciplinarity; conceptual interdisciplinarity; interdisciplinarity of problems; and border interdisciplinarity, or interdisciplinarity of neighboring disciplines.

The existence and need for information for almost *all professions*, sciences and cultures, is one of the proofs of the interdisciplinarity of the Information Sciences. In any circumstance, information acts as a driving force for the development of the various areas of human knowledge, nations and peoples and as an element of unification of inter- and transdisciplinary relations. On the interdisciplinary fields, the authors highlight part of Mathematics, Logic, Philosophy of Science, Transformational Grammar and Mathematical Theory of Communication and recognize that there is connection of Information Sciences with some traditional areas, including "Psychology (**Information Psychology**), Sociology (**Sociology of information**), Economics (**Information Economy**), Political Science (**Information Policy**) and technology (**Information Technology**)".

Transdisciplinary

It is pertinent to approach some ideas that announce it or converge it to interdisciplinary philosophy, long before the introduction of this concept, such as the notion of system, as well as those that follow it, as transdisciplinarity. (Morin, 1997), rethinks the concept of system, as an organized whole that "... produces or favors the emergence of a certain number of new qualities that are not present in the separate parts", capable of connecting the parts to the whole.

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(Japiassu, 1976), illustrates the concepts of multidisciplinary, interdisciplinarity and transdisciplinary, based on (Jantsch, 1970,72 apud Japiassu), and describes them as systems "... with successive degrees of cooperation and increasing coordination of disciplines." Transdisciplinarity is a concept of reciprocity between specialized investigations, but it situates these links within a total system, with no boundaries established between disciplines.

For (Pombo, 2004), transdisciplinary is a way to promote the integration of knowledge, in order to ensure a higher level of interaction, that is, it is a fusion that overcomes disciplinary barriers allowing its transcendence.

The theoretical-methodological approach to transdisciplinary is under construction, being discussed and debated today. Some theories are directly related to the transdisciplinary approach, such as systems theory and information theory, as well as terms related to it, such as passage, transition, change, transformation, complexity, (Nicolescu et al., 2000).

Transdisciplinary, as the prefix "trans" indicates, concerns what is at the same time between disciplines, across different disciplines and beyond the whole discipline. Its purpose is the understanding of the current world, and one of the imperatives for this is the unity of knowledge, ProjectCiret-Unesco, (1997, p. 4).

Discipline

To understand interdisciplinarity, it is necessary to start from disciplinarity, since the specialties of knowledge are the "foundations on which everything is built" (Clerk apud Klein, 1996). Second, (Japiassu, 1976), disciplinarity is the "... Specialized scientific exploration of a certain homogeneous field of study, that is, the systematic and organized set of knowledge that has its own characteristics in the plans of education, training, methods, and subjects: this exploration consists of making new knowledge emerge that replaces the old ones". Disciplines have specific focuses and the real of each is always reduced to the angle of view of their specialists, which expands to the extent of interconnections with other disciplines.

For (Morin, 2002), the term discipline is related to the academic-scientific knowledge that culminated with the emergence of various branches in the field of science, and which developed thanks to the progress of scientific research. In a broader view of epistemology (Morin, 2002) presents the discipline as a category that organizes scientific knowledge and divides it and specializes in work to respond to the diversity of domains that the sciences cover. A discipline naturally tends to autonomy by the delimitation of its borders, by the language it establishes, by the techniques it is led to elaborate or to use and, eventually, by the theories that are proper to it, (Morin, 2002, p. 37).

Second, (Gusdorf, 2006), each discipline tries, "an approximation of human reality according to the dimension that is proper to it, with man as the common center", presenting different patterns of formality and organization. Some criteria identified by (Heckhausen, 2006) help to understand the nature of a discipline, characterizing it or differentiating it from others by aspects not always very definitive, as explained by the author himself. They are:

- **Study domain** - specific angle of your material domain. Vaguely defined notion that depends on the constitution of a given discipline.
- **Own methods** – to apprehend and transform phenomena. A discipline becomes autonomous when it has perfected its own methods, which must be adapted to the nature of the field of study, with correspondence between concrete application of methods and general laws at the theoretical level.
- **Instruments of analysis** - they are based on logical strategy, mathematical reasoning and the construction of process models. It is a common domain and is neutral criteria.
- **Applications** - guidance for the application and practical use in the field of professional activity.
- **Level of theoretical integration** – construction of the "reality" of its domains in theoretical terms, that is, its fundamental and unifying concepts must be comprehensive, enough to explain and predict the phenomena of its domain of study. Defines the maturity of the discipline and is the most important criterion for identifying a discipline.
- **Historical contingencies** – a moment through which discipline passes in its process of historical evolution, in which both the internal logic of the domain of study and external forces interfere.
- **Material domain** - set of objects they are dealing with. Many disciplines overlap in this area;

The disciplines are made up of groups of researchers who have common intellectual goals. For example, when talking about "physics" or "biology", it is not referring to the representation of knowledge of physics or biology of epistemic value, but to an institutionalized organizational structure with criteria, interests and objectives of researchers, within the scope of scientific policy. As a practical example of a disciplinary research, the study of sound made in different disciplines: in physics - vibration and amplitude (acoustics); in physiology - production mechanisms (phonator organs); in linguistics - significant and generation of meaning; in music - rhythm, melody, harmony and timbre.

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Business Sciences

The Harvard School 65 / Design (Andrews et al)

The logic of the model (Andrews, 1971) comprises a double dichotomy between, on the one hand, what is inside (the company) and what is outside (its context) and, on the other, what is said (the strategy formulated) and what is done (the execution of the strategy). It is a question of making a diagnosis (SWOT model - Strengths - strengths, Weaknesses - weaknesses, Opportunities - opportunities and Threats - threats) of what constituted the strengths and weaknesses of the company, in order to identify its competitive competence, that is to identify the key variables on which it had an interest in basing its strategy, in the face of competition. Outside the company it was important to analyze the threats and opportunities that could affect the company in order to identify strategic variables.

(Crozier, 1977) when analyzing the problem of the decision focuses its attention on the role of the manager as a decision-making decision-making, neglecting the rules of decision-making. The norms that an individual uses are the result of cultural learning, that is, of a socialization reinforced by the sanctions of the environment. The decision-winner does not look for the great, the best solution in the absolute, which is in any case out of his reach, however he always seeks a rational solution. What will she be? The first solution that meets the rationality criteria that are yours. Man is not an animal that seeks rationalization, but satisfaction.

(Crozier, 1977) says that it is necessary to know the principles, practices and real behaviors in order to understand the role and meaning of the social set and measure the strength of resistance and the capacities of evolution. Only in this sense can the analysis of organizations bring a decisive contribution to the constitution of a new way of perceiving human relations. (Crozier, 1977) raises the problem of the multiplicity of the rationalities of the actors, since the regularities of behaviors only make sense when framed in a strategy. Strategic reflection requires us to seek in the organizational context the rationality of the actor and to understand the organizational construction based on the experience of the actors. The model is based on the coexistence between the key variables (information), that is, on the one hand, the formal structure, the relationship system and the individual freedom of the actors and on the other on the information flows between the units and the members. The strategy is defined based on the rationality and experience of the decision-taker, as an actor of the system.

The lack of rigor in the definition of the term strategy leads the author to only refer as variables in the definition of the strategy the capabilities of the company and the balance relations between the different actors. The strategy is presented more as a result of this balance than a determinant. By iteratively approaching the internal and external analysis, one can then define the field of the possible, that is, the set of alternatives open to the company. This stage is submitted to the values of managers, a kind of moral filter through which alternatives should be judged. The decision to choose the strategy is expressed in terms of objectives to be achieved in product-market pairs and in the means to be mobilized to achieve this.

A second filter was added to the model in the last stage of reflection (Andrews, 1982, cit. In Christensen et al., 1982), when considering the social responsibility of the company – specifically the ethics of the society in which the organization operates and how it is interpreted by managers. Another dichotomy present is the distinction between the formulation of the strategy and its implementation, drawing attention to the internal functioning and the deviations that often discolor the intentions of the acts. Once the alternative strategies are determined, the next step in the model is to evaluate them and choose the best one, which assumes that the various alternative strategies have been designed and that they should be evaluated through a series of tests:

- **Consisting of** – the strategy should not present inconsistent objectives and policies.
- **Consonance** – the strategy should represent an adaptive response to the environment and its critical changes.
- **Advantage** – the strategy must provide the creation and or maintenance of one or more competitive advantages.
- **Validity** – the strategy should not overload the available resources, nor create insuperable problems.

The strategy maintains with the other facets of the company's policy multiple relationships, in which it is presented more often, as a result than as a determinant, that is, we are faced with a complex system, made up of iterations that develop in every way. The Harvard 65 school model, also known as the School of Design, is based on several *premises*, some fully evident and others implicit (Andrews, 1982, cit. In Christensen et al., 1982):

- The formulation of the strategy should be a deliberate and conscious process.
- The responsibility for this control and this perception must be of the main top manager (the strategist).
- The strategy formulation model should be kept simple and informal.
- Strategies must be unique: the best ones result from an individual *design* process.
- The *design* process is complete when the strategies are fully formulated as a perspective.
- Strategies should be explicit and therefore need to be kept simple.

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- Only after the strategies are explicit and fully formulated can they be implemented.

Harvard School Review 65

The premises on which the *Harvard 65 or Design school model* is based deny certain important aspects in the formulation of the strategy i.e. incremental development and emerging strategy, the influence that the existing structure can have on the strategy and the full participation of other actors besides the main manager. The evaluation of strengths and weaknesses makes the promotion of thought independent of action, that is, the formulation of the strategy is a process of conception and not of learning. All strategic change involves new experiences, a step in the unknown, a certain dose of risk. So, no organization can know in advance for sure, whether a current competency will prove to be a strong point or a weakness in the future.

The organizational structure must follow the strategy and be determined by it (Chandler, 1962). However, a functioning organization cannot erase the past when it changes strategy. Stating that the structure follows the strategy is equivalent to saying that the strategy should take precedence over the established capacities, which are embedded in its structure. The structure may be more or less flexible, but it cannot be changed just because a leader has devised a new strategy. In fact, the development of the strategy and the structure support the organization as well as support each other. One always precedes the other that follows it, when the strategy is defined, the formulation of the strategy is an integrated system and not an arbitrary sequence.

By promoting explicit strategy and inflexibility, the model requires its articulation to the extent that the inability to do so is considered evidence of vague thinking or political motives. On the other hand, the strategist needs to know for sure where to go, with few important doubts, but also needs to know how to deal with conditions of uncertainty.

In terms of synthesis, the model introduces new variables of analysis that relate to the environment, but still in a very tenuous way because at that time the objectives of the companies were concentrated on operational problems. It considers two types of key variables (information): the external ones that are the most influential and the most explicit and the internal ones that are the most sensitive to the environment. Thus, the key variables of the model that lead managers to make the strategic decision are mainly the economic and financial variables as well as the personal values and aspirations of managers.

The objectives that managers define are financial, that is, they are objectives of a quantitative nature. The information that the model refers to is mainly formal information to respond to the organization of the structure and its relations.

Contributions and contexts

There is several important contributions that encourage managers to use the *Harvard 65 school or design model*:

- A manager's brain can handle all the information relevant to the formulation of the strategy. This involves a rich and intimate knowledge base over a substantial period that can be covered by a single head, that of the manager/decision-taker.
- The manager can have full, detailed and intimate knowledge of the situation in question.
- Relevant knowledge must be acquired before formulating a new strategy, i.e. the situation should remain stable or at least foreseeable;
- The organization needs to be prepared to deal with a centrally articulated strategy.

The contribution of this school as an informative idea was profound and developed a vast vocabulary to discuss the strategy and provided the notion that the strategy represents a fundamental adequacy between external opportunities and internal capacities.

THE CARNEGIE SCHOOL (ANSOFF ET AL)

(Igor Ansoff, 1965)formally systematized the problem of strategy to respond to the needs of companies, at the global level of management and management. This problem has contributed decisively in a progressive and accelerated way and never finished to the construction and consolidation of the scientific domain of management. Traditionally and even today in common sense, it turns out that the measure par excellence for a company's performance is profit. (Ansoff,1965) considers that the profit or cost criteria are not sufficient to explain the social and human organization of the company. Long-term profitability is the goal that all companies should try to achieve, and it is necessary to achieve dimensions other than profit.

The model (Ansoff, 1965) provides the confrontation between the capabilities and potential of the company, in view of the environment in which the definition of objectives, only determines the level of performance that the company seeks to achieve, through the set of products and markets, within the scope of its field of action. (H. Igor Ansoff, 1965) defines the concept of strategy as being the best positioning of the company's set of products and markets, in the systemic and competitive environment and operationalizes the strategy **through** the following elements:

- **The set of products and markets** - choice of the set of products and markets.

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- **The growth vector** - direction towards the position to be followed in terms of products and markets (penetration, development, diversification).
- **Competitive advantage** - specific properties and individual combinations of products and markets that give a strong competitive position.
- **Synergy** - the combined performance is greater than the sum of the parts, in terms of products and markets (2+2=5), i.e., the ability to take advantage of the entry into a new product line and market.
- **Buy or do.**

The set of **products and markets** focuses on the search process in well-defined areas. The **growth vector indicates** the company's direction in terms of products and markets. The third element of the strategy deals with competitive **advantage**, through which it is intended to "identify specific properties and individual combinations of products and markets that give the company a strong competitive position". The set of products **and markets, growth vector and competitive advantage** describes the trajectory of the company in its external environment, in which the first describes the scope of the search, the second indicates the direction followed and the third the characteristics of the most attractive opportunities.

There is also **a** fourth component - synergy - which is the company's ability to take advantage of its entry into a new product and market area, being particularly useful as a common link in new growth areas, i.e. it is a key **variable** in choosing a diversification strategy. Diversification knows the best days in a context of high economic growth, while specialization presents itself to many as the most prudent in times of austerity. It devises an exhaustive model of strategic analysis and strategic decision-making where it seeks to show that companies cannot only have economic objectives, having developed a measure of efficiency - profit - that is common and exclusive to the company. The model shows that in companies there are other objectives besides profit.

The model is divided into clearly delineated, articulated steps and with a list of checks and techniques and gives special attention to the setting of objectives at the beginning and the preparation of budgets and plans at the end:

- **Setting the objectives** - procedures to quantify the goals of the organization in the short, medium and long term.
- **Analysis of the environment** - procedures for the evaluation of external conditions, in order to make predictions about future conditions, as well as the construction of alternative scenarios with the objective of visualizing alternative states of the future situation of the organization.
- **Internal analysis** - the study of strengths and weaknesses, resulting in the evaluation of distinctive competencies.
- **Evaluation of the strategy** - evaluation of alternative strategies to be selected one, using various evaluation techniques such as: return on investment, risk analysis, value curve and shareholder value. All techniques are oriented towards financial analysis.
- **Implementation / operationalization of the strategy** – detailing the model for implementation, that is, while the formulation is a divergent and open process in which imagination can flourish, implementation is a closed and convergent process to subject the new strategy to the constraints of operationalization.

The whole set of strategy, objectives, budgets and programmes is put together in a system of operational plans. The objectives drive the formulation of the strategy which in turn evokes the programmes, the results of which influence budgets for control purposes.

At *Carnegie School* also known as the School of Planning the chief executive should remain as the architect of the strategy, but in practice he should not devise the strategic plans, but rather approve them. The assumptions can be summarized in the following:

- The strategy should result from a controlled and conscious process of formal planning, decomposed in different stages, each outlined by a *checklist* and supported by techniques.
- The responsibility for the whole process is the main manager (decision-making); in practice, responsibility for implementation is those responsible for planning.
- The strategy must be explicit so that it can be implemented through budgets and plans of various types.

Criticism

Strategic planning suffers from seven sins, which are the following (Wilson, 1994):

- The advisors assume the process of formulating the strategy, due to the indifference of the top managers.
- The strategy formulation process dominates the advisors, as methodologies become increasingly elaborated, with too much emphasis on analysis and insufficient emphasis on true strategic criteria.

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- Planning systems are practically designed to not produce results, i.e. those who decide to forget those who perform.
- Planning managers focus on the most exciting "game" of mergers, acquisitions and sales, at the expense of basic business development.
- The planning process fails to develop real strategic options, i.e., those responsible for planning rush to adopt the first strategic option that "pleases" decision-makers.
- Planning neglects the organizational and cultural requirements of the strategy, that is, the process correctly focuses on the environment, to the detriment of the internal one that is decisive in the implementation of the strategy.
- The prediction of a single strategic alternative is an inadequate basis for planning in a phase of uncertainty and change.

Contributions and Contexts

For (Ansoff, 1984) the evolution of the concept of strategic *management* can be identified in five stages:

Stage 1 - Late 1950s. When companies began to feel the need for a tool and help to decide where and how to do and develop the business in future years. The analytical aspect was called "strategic *formulation*" and the process by which managers jointly formulated the strategy was called "strategic *planning*".

Stage 2 - 70s. When it began to discover that the internal configuration of the company (capabilities) had to be transformed following a change in *strategy*. The process of determining capabilities and needs, in order to support the new *strategy*, began to be called "*Capability Planning*" - Capacity Planning.

Stage 3 - Late 1970s. In response to the growing and frequent development of the discontinuities, surprises and speed with which the environment has evolved, particularly in its socio-political and technological aspect. To combat these adversities, companies began to use a real-time strategic response called "*issue management*".

Step 4 - The fourth stage involved the organizational resistance stouts with which companies were struggling in the first efforts to implement strategic planning. The first measure to overcome the resistance was to ensure an enthusiastic will on the part of "top management". It was, in fact, a necessary but not sufficient solution.

Stage 5 - Early 1980s. It consists of an approximation to the "*management of discontinuous change*", which considers the psychological, sociological, political and systemic characteristics of organizational complexity.

This management vision is a systematic vision for the strategic management of change which consists of:

- Position the company *through strategy and capacity planning*.
- Strategic responses in real time through an expeditious and pragmatic management system "*issue management*".
- Systematic management of *resistances* during the implementation of the strategy.

Involves a model that provides the confrontation between the capabilities and performance potential of the company in relation to the environment, so it defines the strategy as the link of the company with the environment. Defines a typology of the decision of managers in: strategic, administrative or coordination and operational.

In the seventies it introduced the **turbulence** variable and relates the strategy to the following internal and external actors:

- Technical-economic dimension.
- Sociopolitical dimension.
- Cultural dimension.
- Competitive dimension.
- Potential size of the organization.

In an increasingly turbulent universe, the very notion of planning, as *a priori objective*, becomes unadopted, so the ability to react and adapt to the changes of the environment is decisive and thus moves from planning to strategic management. The model takes an out-to-in strategy approach. Initially, the need to transform the internal configuration of the structure to implement the strategy was forgotten, so some authors from the same school completed the model with some complementary reflections.

Recent progress more in implementation than in design has been made in the construction of scenarios and in the control of the strategy. The construction of second scenarios (Porter, 1985, p.481) is based on the assumption that one cannot predict the future, speculating about a variety of futures, one can open one's mind and, hopefully, reach the right future. But changing the world view of managers is a much more difficult task than building any scenario. The control of the strategy aims to keep the strategy in the desired strategic tracks (Simon, 1988, p.2). The reference model as motive and dependent variables (key variables) information on macroeconomic, technological, political-legal and sociocultural developments on the environment and internal information on the capabilities and competences of the company.

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In summary, the model focuses on an exhaustive list of key variables (information) on the global environment, i.e. those that have an impact on all organizations and forgets the variables that have only an impact on some organizations (industry or sector), i.e. the immediate environment.

THE HARVARD POST SCHOOL 80 (PORTER ET AL)

The premises of the *Harvard Post 80* school, also known as positioning, are based on the fact that the strategic analysis is based, for many years, on the concepts developed so far: growth, internationalization and diversification. The study of competition was limited to the distribution of market shares and the golden rule was to make the dominant company in the growing sectors.

(Porter, 1980) developed the model of the five forces, based on the analysis of the competitive context that manifests the entry of the industrial economy into strategic thinking. Competitive analysis makes use of the term industry and or sector and not of the domain. The whole industry is part of a processing line that goes from raw material to the final product acquired by the customer, that is, each sector is brought between a supplier sector and a client sector and exerting various pressures that sharpen the intra-industry or intrasectoral competitive struggle. This is influenced by the greater or lesser difficulty of entering or leaving the industry or sector. The number of companies that have access to this (e) is one of the determining actors of the competitive game. The arrival of a possible substitute product is another dimension of your model.

The *Harvard Post 80 School* or positioning imposed limits on the number of strategies that were possible in any situation since in the opinion of (Porter, 1980) few strategies – such as market positions – are desirable in a given industry: those that can be defended against current and future competitors. Ease of defense means that companies occupying dominant positions have more profits than others. Thus according to the model of (Porter, 1980) organizations can gain competitive advantages based on three generic strategies:

- **Cost leadership** – emphasizes the standardization of low-cost product production for customers who are price sensitive.
- **Differentiation** – is the target strategy for products and services considered unique in the industry and targeted at customers who are relatively price-insensitive.
- **Focus (niche)** – means producing products and services that meet the needs of small groups of customers.

The generic strategies of (Porter, 1980) imply different organizational adaptations, control procedures and intensive systems. Large companies, with great ease in accessing resources, typically compete for cost leadership or differentiation, while small businesses often compete in niches. In need of analyzing cost-benefit performance and the assessment of "opportunity sharing" between existing companies and the potential of business units. Sharing activities and resources increases competitive advantages by low cost or differentiation. In addition to market sharing, it insists on the need for companies to transfer skills and capabilities between business units in order to obtain competitive advantages. The focus depends on factors, such as the type of industry, the size of the company and the nature of the competition.

The school was able to create and refine a set of analytical tools dedicated to adjusting the correct strategy to current conditions, also seen as generic, such as maturity or fragmentation of the industry. The key to the strategy is the use of analysis to identify the correct relationships. The strategy formulation process continues to be seen as a controlled and conscious process, which produces deliberate strategies fully developed and be made explicit before its implementation. The notion that the strategy determines the structure is maintained, but another form of "structure", that of the industry has been added, so that the structure of the industry directs the strategic position that, in turn, directs the organizational structure.

The main risks of this strategy include the possibility for many competitors to recognise success and copy the strategy or preferences of consumers; also tend to change the characteristics of the products. The value chain is described as the total revenue minus the costs (margin) of all activities from the acquisition of raw materials to the acquisition of products by customers. All companies in a given industry have a similar value chain that includes activities such as raw material *procurement*, *product design*, production, distribution and after-sales service. The company will be more profitable if it achieves a higher margin over its competitors. The interest in the analysis of competition lies, first of all, in the initiative that proposes and makes evidence the factors of evolution of a particular industry or sector. The key actors of success are identified in a dynamic perspective that enables the understanding and anticipation of changes. The analysis is based on information of an economic and psychosociological nature, which allows an accurate inventory of potential threats and possible responses to counteract them, as well as allow a better understanding of the competitive behaviors observed.

This model is a fertile source of reflection, allowing to evaluate the soundness of the company's current position in industry or sector and identify the development alternatives that are offered to it, measuring the chances of success and the risks of failure.

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It is also a calculation tool in the framework of a diversification strategy as it allows for an accurate assessment of the profitability that can be expected from a new industry and the financing to be made, i.e. it allows the value of an industry to be determined. In summary, the main premises on which the school is based are as follows:

- Strategies are generic, common and identifiable positions in the market.
- The market is economic and competitive.
- The strategy formulation process is the selection of these generic positions and is based on analytical calculations.
- Analysts play an important role in the strategy formulation process, passing the results of calculations to decision makers who formally control options.
- The strategy naturally leaves the process to be articulated and implemented: the market structure directs the deliberately positioned strategy that, in turn, directs the organizational structure.

The *Harvard Post 80 School* or positioning school was tailor-made by consultants who can arrive "cold", without any knowledge of a business, analyze the data, define a set of generic strategies, write a report, send the invoice and get out. Thus, from the 70s and 80s, several consulting firms in the area of strategy emerged, each with its own model, attacking a conceptual market niche to promote its own positioning concepts.

Criticism

The focus of this school is narrow and is mainly oriented towards quantifiable economic aspects as opposed to the non-quantifiable social, political and economic aspects, so the selection of the strategy can be biased because the deliberate strategy in costs has more factual data to support it than for example the strategy of differentiation by quality. It has limitations in ignoring the political context in the definition of the strategy, since the government can limit or even prevent the entry of new competitors in industries with control, such as the limit to the number of competitors, limitations on access to certain raw materials.

The context of the school leans more towards large traditional companies in which market power is greater, competition less effective and the potential for political manipulation is more pronounced. Fragmented industries are the battleground for small businesses, meaning they have a penchant for what is large, established and mature, and also reflects a penchant for stability conditions. The school's message related to the strategy formulation process is not to go out there and learn, but to stay at home doing calculations, that is, it can prevent not only learning, creativity and personal commitment. On the other hand it tends to have a narrow focus on defining the strategy. It is seen as a generic position, not a single perspective, but at the limit it can be reduced to a formula in which the position is selected from a condition restricted list.

Some risks in the pursuit of leadership by cost are the ease of imitation of the strategy by competitors, which leads to a drop in profitability and technological changes in the industry can render the strategy ineffective or interested customers can switch to other factors, in addition to price differentiation. The risks of differentiation consist of the fact that the single product may not be highly valued by customers to justify the high price. When this happens the cost of leadership will destroy differentiation. Another risk in pursuing a differentiation strategy is that competitors can develop quick ways to copy the differentiating factors. The success of a focus strategy depends mainly on the industry segment that is large enough, has a high growth potential and is not crucial to the success of most other competitors. This strategy is most effective when customers have different preferences or requirements and when rivals do not have specialisation conditions in this market segment.

It presents some difficulties in execution. The first lies in the appropriate choice of the field of analysis, since it does not need the variable geographical dimension of the analysis to be performed. The accuracy of the analysis depends on the extent of the field of analysis considered and should be applied to a homogeneous industry or sector (o). The analysis of competition is also a means of segmenting the company's activities, considering in particular the strategic groups to which it belongs and the competitive universes with which it is confronted.

The second difficulty lies in the amount of information to be collected, which implies the adoption by the company of a genuine *competition observatory*. This means that it is necessary to create a competition surveillance process in the company in order to identify the strategic **variables (information)** that condition the actions in a particular industry or sector.

Main contributions and contexts

His main contribution was that led to the conduct of strategic analyses in support of the strategy formulation process, making the process much richer, confused and dynamic. Thus, the role of positioning is to support the process and not be, that is, changed the role of the person responsible for planning to that of analyst. The analysis techniques can inform the strategy formulation

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process in a significant way. It made a huge contribution to strategic management, as it opened huge "avenues" to research and provided a powerful set of concepts to practice.

THE RESOURCE-BASED SCHOOL

This school began in the 1980s due to the lack of competitiveness of American companies when compared to European and Japanese companies, by creating and sustaining competitive advantages of organizational skills and competences (R. Hayes, 1985). This dimension of strategic analysis shows us that at one end is the approach oriented from the outside in, that is, based on the positioning of the set of opportunities of the product-market and on the other is the orientation from the inside out, in which the competition is based on the creation and support of competitive advantages, through the continuous improvement of organizational resources, that is, of capacities and competencies.

According to this school companies should invest in the development of their capacities, qualification and competence of their human resources, so that the opportunities that appear can be identified, whenever they occur, thus constituting competitive advantages, that is, the resources and skills that are distinct or superior to those of competitors are the basis of competitive advantages. The resource-based approach is a reaction to the determinism proposed by the approaches of the positioning schools, in which (G. Hamel and C. K. Prahalad, 1990) proposed a design of strategy radically opposed to strategies of adaptation to the environment. The emphasis of strategy is on the supply side at the expense of the demand side.

The fundamentals of resource-based theory conceptualize the company as "a set of productive resources", in which distinctive competencies are based on resources and capabilities that are represented by tangible assets, such as the productive system, economies of scale or intangible assets such as brand, image (Penrose, 1959).

The basic premises of the resource-based school are based on the concept that the resources of organizations can create and maintain sustained competitive advantages through the use of these resources, capabilities and competencies, that is, the strategy should focus on creating and sustaining these competitive advantages. (Wernerfelt, 1985) defines feature as "anything that can be thought of as a strength or a weakness of a company", so organizations get competitive advantages over their competitors if they acquire or develop superior resources or a combination of superior resources.

MarketPlayers

The heterogeneity of market actors is a fundamental condition to sustain competitive advantages, since in any industry the capacities and competencies are heterogeneous in relation to organizations and the product actors adopted have different levels of efficiency, leading to one organizations becoming superior to others, thus managing to enjoy greater profits (Peteraf, 1993). The support of these competitive advantages constitutes a decisive market player for success, and it is therefore necessary to ensure the distinctive capacities and competences to cope with the changes of the environment, thus making it essential not imitation and the possibility of replacing these resources in the formulation and implementation of the strategy (Grant, 1991). It is important to ensure that resources and capabilities are not easily transferable to other competitors. The transfer of skills is difficult in the following situations (Grant, 1991):

- when an organization reaches a higher position with regard to the use of resources.
- When the skills result from the functioning of the resources, that is, they are in the whole and not in the parts.

Capabilities are assets that can give the company competitive advantages. The global environment conditions, in the long term, the activities of the company (Ansoff, 1965, 1990). The immediate environment consists of elements that interact directly with the industry (Porter, 1980). Skills and capabilities are necessary for success in any industry. Some of them are easy to obtain and others are difficult to achieve (e.g. product innovation). There are, however, some skills and competences that are decisive and without which companies cannot gain credibility with customers and make a difference to their competitors (Porter, 1980). Skills and capabilities have distinctive characteristics with customers and competitors, such as:

- They are difficult to buy or imitate.
- They are scarce, durable and hardly replaceable.
- They are complementary with others and vice versa, in order to add value to the products.
- They are company-specific (difficult to transfer).
- They are attuned to industry trends.
- They create value for *stakeholders*.

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As a general rule the most valuable skills and abilities are those that are difficult to buy, sell, imitation or replace. For example, intangible assets such as tacit organizational knowledge, trust between managers and employees, the constitutions of a strong research team cannot be purchased or easily copied by competitors since they are extremely rooted in organizational history and culture. It is no exaggeration to say that competitive strategies are the art of creating or exploiting the advantages that are more difficult to copy and imitate. Competitive strategies, in contrast to generic strategies (Porter, 1980), focus on differences between companies more than a common mission. For example, a supermarket chain represents the success of generic strategies. Competitive advantages can be based on one of the following factors:

- Superior *Skills*.
- Superior resources.
- Superior market position (e.g., market share, price, quality, design, R&D).

Examining the potential of competitive advantages, the critical question is "*What sustains these protected advantages of copying and or imitation of competitors?*". *Skills* can be the source of the advantages if they are based on the *learning-by-doing history itself* and if they are rooted in employee behavioral coordination. In contrast, *skills* that are based on the scientific principles of training that can be purchased and copied by competitors are not a source of advantages.

The resources that constitute advantages are company-specific and have been built over the years through the accumulation of *superior Skills* or were obtained due to the input of innovative knowledge or through an occasional plan. The company's top position comes from the products it offers its customers in a particular segment or niche market. Positional advantage can be achieved by anticipation, *Skills*, and or superior resources. Once you win, the good position is defensive. This means that the return value is sufficient to ensure the maintenance of the position and be costly for competitors to overcome the economies of scale, experience and range obtained by the company (BCG, 1969, ADL, 1974-79, McKinsey, 1978). The advantages can also come from factors, such as:

- Mastery of raw material sources.
- Geographical location.
- Leadership in the quality of services.
- High quality product range.
- Reputation in meeting customer needs.

The Dynamics of Organizational Capabilities

The dynamics of organizational capacities tends to consider that strategic management is a process of collective learning that aims to develop and explore distinctive skills that are difficult to imitate, that is, it is the view that the strategy depends on learning and that it depends on capabilities (Prahalad and Hamel, 1990, p.82). As the capacities are transfunctional, the associated change process cannot be left to intermediate level managers, it requires the direct guidance of top managers and the active involvement of line managers (Stalk et al., 1992, p.65).

The concepts of central competence, strategic intent, tension and leverage are more linked to the characteristics of organizations than to the processes they use. Competitive advantages stem from the deeply rooted capabilities behind a company's products. These skills are "hidden", since it is not easy to imitate them, so the secret of success is not in large products, but rather in a unique set of capabilities that allow the company to create great products (Prahalad and Hamel, 1990).

- Core competency – "a company achieves strategic adequacy through the effective use and efficient accumulation of its invisible assets, such as technological know-how or customer loyalty. Invisible assets serve as the focal point of strategy and growth development and are difficult to accumulate, capable of multiple and simultaneous uses and are, at the same time, the ins of the company's activities, meaning that they feed the strategy, but can also be accumulated as a result of it" (Hiroyuki Itami, 1987);
- Strategic intent – provides for a desired position of leadership and establishes the criterion that the organization will use to develop its progress, but at the same time it is more than a simple ambition, since it establishes the general direction (orientation), defines emerging market opportunities and provides a cry of unity for employees (Prahalad and Hamel, 1990);
- Tension and Leverage – there is a misadjustment between the company's resources and its aspirations, since there are organizations with many resources and few ambitions and there are organizations with few resources but are driven by a very large ambition (Prahalad and Hamel, 1990).

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But tension is not enough, as organizations need to learn how to leverage resource limitation. This can be done in several ways:

- Focus resources more effectively around a strategic focal point.
- Accumulate resources more efficiently, extracting knowledge from experience and relying on resources from other organizations.
- Supplement one resource type with another to create greater value.
- Conserve resources whenever possible.
- Recover market resources in the shortest possible time.

Features as a Competitive Advantage Base

A company can know which resources are strategic, that is, whether they offer greater sustained benefits in relation to competition, through four criteria (Barney, 1991):

- Value – a resource needs to be valuable to be strategic, that is, it needs to have the ability to improve the efficiency and effectiveness of the organization.
- Rarity - a resource is strategic if it is rare and has demand.
- Inimitable – a resource must be not only rare and valuable, but also difficult to imitate.
- Replaceable – a feature can be rare and inimitable, but it won't be strategic if competitors can find a replacement for it.

The defense for a competitive advantage of a base resource is the difficulty of imitation, such as that provided by intangible relationships, systems, skills and knowledge. Culture is the most effective and durable barrier to imitation. Given the volatility of the environment (e.g., changes in customer preference, continuously evolving technologies) organizations have no choice but to look at internal capabilities in search of a stable sense of direction (Grant, 1991).

Resource-Based Strategy

The strategy for the resource-based school is what the organization is able to do and not in terms of the needs it is seeking to meet, that is, the organization has to first consider what it can do and then identify the industries and strategies it can adopt by developing and exploiting its capabilities and competences (Grant, 1991). The strategy is the balance that an organization takes between its internal resources, that is, between its capabilities and competences and the opportunities and risks existing in its environment (Hofer, Charles W. E Schendel, Dan, 1978). The competitive advantages of organizations are achieved through the joint use of their resources which in turn generate capabilities. In terms of resources, Hofer and Schendel (1978) and Grant (1991b) identified the following different types:

- Financial resources (e.g., financial flows, financial autonomy).
- Physical resources (e.g., equipment, facilities).
- Human resources (e.g., engineers, managers, salespeople).
- Organizational resources (e.g., financial system, quality control system, information system, organizational routines – economies of scale and experience).
- Technological capabilities (e.g., high quality products, low production costs, customer loyalty over brands).
- The reputation / image of the organization (Grant, 1991b).

For Grant(1991b) the capabilities are distinctive skills and are the consequence of the joint operation of different resources. The concept of organizational routines (e.g., production processes, performance evaluation, monitoring of activities) is the consequence of actions coordinated by individuals in the context of an organization (Richard Nelson and Sidney Winter, 1982). Competition is increasingly becoming a "movement war" in which success depends on the ability of organisations to predict market trends and responsiveness to changing customer needs. The essence of the strategy is not the structure of products and markets, but the dynamics of the behavior of organizations. The goal is to identify and develop organizational capabilities that are difficult to imitate and distinguish an organization from its competitors in the eyes of customers. The basic principles of resource-based competition are (George Stalk et al, 1992):

- The basis of the business strategy is not the set of market products, but the processes.
- Competitive success depends on the ability to transform key processes into strategic capabilities that add value to customers.
- Organizations build capacity through investments in support infrastructure.
- The champion of the capabilities-based strategy is the president of the organization since the skills cross the functions.

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(Prahalad and Gary Hamel, 1990) developed the concept of 'nuclear *competence*', i.e. rivalry between competitors should be seen in two perspectives: one in the short term, where competitiveness is based on the price and performance of current products that tend to have similar standards and quality, and the other refers to long-term competition, i.e. the winners will be those who have the greatest capacity to produce faster at the lowest cost. The core competences of organizations are thus the collective learning capacity, communication and involvement of employees in the integration of productive capacities and technologies, in order to perform excellently when compared to competitors. The identification of nuclear competences is based on the following assumptions (Grhaug and Nordhaug, 1992):

- Nuclear competence gives the opportunity to have access to a variety of markets.
- Nuclear competence contributes significantly to adding value to customers.
- A nuclear competence is difficult to imitate by competitors.

Criticism

The increasing turbulence of the environment has led to the consider of resources as the main source of sustained competitive advantage and as the basis for the formulation of the strategy. Hence, knowledge has emerged as the most important strategic resource for organizations. The set of opportunities available to an individual or an organization is a function of their knowledge. The knowledge of decision-makers is limited to technologically practicable knowledge that reflects the limitation of human knowledge about physical laws and the physical limitations of the knowledge of decision-makers, which (March and Simon, 1985) called "limited rationality". The mental and sensory limitations of human beings mean that the activities of storage, processing, transmission and receiving knowledge have a cost. The transfer of knowledge involves not only the use of storage and processing capacity, but also the input and output channels of the human brain, is not instantaneous and takes time to absorb information. These delays come at a cost and can lead to the irreversible loss of opportunities (Nelson António, 2003).

Main contributions and contexts

The investigation of the determinants that allow a sustained competitive advantage is largely based on economic theory, since the most valuable resources have a lower supply than demand and are therefore rare, which can lead to a different return and is related to the fact that the resource is rare and valuable. The resource-based school should be understood as a reaction to the positioning school. While it bases all its instruments on the analysis of the environment disregarding the company, the resource-based school bases the analysis within the company, without refusing what is happening abroad (Nelson António, 2003). Despite some confusion in terminological terms, it contributes to the theoretical development of some fundamental concepts, such as:

- Production actors – are the *undifferentiated inputs* available and disaggregated, in the markets (e.g., land, unqualified labor).
- Resources – are active organizations that are difficult, if not impossible to imitate (e.g. trade secrets, accumulated experience).
- Capabilities – materialize in what organizations produce and result from the joint work of the various resources.
- Skills – are the distinctive activities that result in integrated *clusters* (e.g. quality systems);
- Vital or core skills – are the skills that define the business of companies (e.g., collective learning).
- Dynamic capabilities – are the capabilities of organizations to integrate, develop and reconfigure internal and external skills to survive change.
- Products – are the goods and or final services produced by the companies using the skills they have (the price and quality are the result of the performance of the company's products that in turn depend on their capabilities).

To define the strategy based on resources, organizations must first identify and evaluate their resources and find out what resources they can develop their future competitive advantages in.

THE ENTREPRENEURIAL SCHOOL

The entrepreneurial school was born of economics, as well as positioning since the entrepreneur has a prominent role in economic theory. Their role was limited in deciding what quantities to produce and at what prices. Competitive dynamics took care of the rest. The rise of large companies forced economists to modify economic theory giving rise to the theory of oligopoly, which forms the basis of the school of positioning. However, some economists considered this narrow view of the entrepreneur. Karl Marx praised enterprises as agents of economic and technological change but criticized their impact on society. However (Schumpeter, 1959) put the entrepreneur in prominence in economic thought. For Schumpeter the entrepreneur is not the capitalist, but the one who has the ideas of the business, that is, the entrepreneur has vision and creativity.

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The entrepreneurial school focuses on the process of formulating the strategy on the leader, but also emphasizes intuition, judgment, wisdom, experience and criterion. This promotes a vision of strategy as a perspective, associated with the image and sense of direction, that is, *vision*. The strategic perspective is less collective or cultural, but it is more personal, that is, it is the work of the leader. The most central concept of this school is the vision: a mental representation of the strategy, created or at least expressed in the head of the leader. This vision serves as inspiration and also as a sense of what needs to be done – a guiding or guiding idea. The main premises on which the school is based are as follows:

- The strategy exists in the mind of the leader as a perspective, that is, it is a vision of the future.
- The process of formulating the strategy is, at best, semi-conscious, rooted in the experience, intuition and knowledge of the leader.
- The leader promotes vision decisively, even obsessively, maintaining personal control in implementation.
- The strategic vision is malleable, that is, it tends to be deliberate and emerging.
- The organization is also malleable, a simple structure sensitive to the leader's guidelines.
- Entrepreneurial strategy tends to take the form of a niche.

Criticism

The formation of the strategy is centered on a single person, on the behavior of the leader; however, much cannot be said about the case. This remains largely a black box, buried in human cognition. So the company that is in difficulty, the solution is to find a new visionary leader.

All vital decisions are concentrated in the leader's office. This centralization can ensure that the strategic response reflects full knowledge of operations. It also encourages flexibility and adaptability to new situations. On the other hand, the leader can cling to operational issues and lose sight of strategic considerations.

It perpetuates the myth that organizations are dependent on the leader, that is, it perpetuates the culture of dependence and compliance to the detriment of ongoing questioning and learning and does not encourage innovative actions by other members of organizations.

Contributions

The entrepreneurial school emphasized the critical aspects of the strategy formulation in particular its proactive nature and the role of personalized leadership and the strategic vision of the leader, benefiting organizations with a sense of direction and integration.

THE COGNITIVE SCHOOL

Cognitive School uses the field of cognitive psychology. The process of formulating the strategy is a mental process, that is, it means that the strategy is formulated in the sphere of human cognition, that is, the strategist develops his structures of knowledge and his thought processes, mainly through direct experience. This experience shapes what he knows that in turn shapes what he does, thus shaping his experience subsequently. This duality plays a central role, giving rise to two different wings. A more positivist that treats the processing and structuring of knowledge as an effort to produce some kind of objective film *in* the world. The other wing sees everything as subjective: strategy is a kind of interpretation of the world.

(Herbert Simon, 1947, 1957) popularized the notion that the world is large and complex, whereas in comparison, the human brain and its information processing capacity are highly limited. Thus, decision-making becomes less rational and more effort snag to be rational. The predisposition to judgment has obvious consequences in strategic decision-making, since they include, for example, the search for evidence that supports beliefs, rather than denying them, favoring recent information more easily remembered about previous information, the tendency to see a causal effect between two variables that can be simply related, the power of optimistic thinking (Tversky and Khaneman, 1974).

(Duhaime and Schwenk, 1985) have studied how distortions can affect acquisition and divestiture decision-making:

- Reasoning by analogy - can lead to entry into businesses not related to current ones.
- Illusion of control – those responsible may underestimate the results of an acquisition that are under their control in return for anxiety reduction, but this can lead to an increase in problems.
- Increasing commitment – involves continued and growing investments in the face of weak and declining performance results.

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The change of strategy creates psychological resistance. Even beneficial changes face resistance from loyal members who desire what is best for the organization (Reger et al., 1994, p.567). The characteristics of human behavior such as "cognitive complexity" or "openness" also help inform the generation of the strategy of strategists who in turn differ in their cognitive styles (Myers-Briggs, 1962). These authors present to us four sets of opposite dimensions.

Table 1 - Dimensions of cognitive styles

Extroversion (E) - energy comes from the outside world	Introversion (I) - the energy of the world that is inside the head of each person
Feel (S) - information comes from relying on the senses	Intuition (N) - information comes from trying to understand the essential patterns
Think (T) - rely on analysis for the decision	Feel (F) - trust the senses in decision making
Judgment (J) - live in a planned, orderly and controlled manner	Perception (P) - live flexibly and spontaneously

Source: Adapted from (Makridakis, 1990, pp.36-37), in, *Strategy Safari: a guided tour through the wilds of strategic management*, (Mintzberg, Bruce Ahlstrand & Joseph Lampel, 1998)

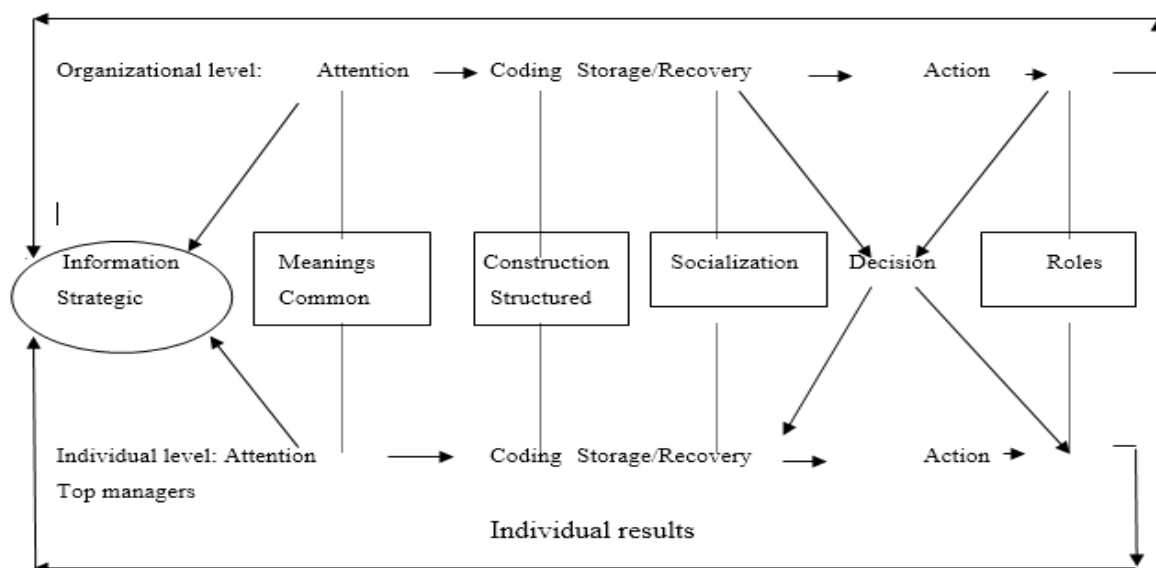
The combinations of these groups lead to sixteen possible types or styles, such as ESTJs ("Outgoing Thinking with Senses") which are "logical, analytical, objective, critical and difficult to be convinced by something other than reasoning ... they like to organize the facts ... but they run the risk of deciding too quickly." In comparison the ESFPs ("Extroverts Feeling with Feelings") are "realistic friendly and adaptable ... trusting in what they can see, hear and know directly ... they solve problems being adaptable ... but are not driven by the need to follow preferred patterns or methods..." (Mintzberg, Bruce Ahlstrand & Joseph Lampel, 1998).

Cognition as Information Processing

The individual cognition of managers suffers the effects of working in a collective system to process information related to organizations. Managers are information workers as they meet their needs as well as those of their colleagues and subordinates. Because they have a limited time to manage the business(s), the information they receive must be synthesized, which can accumulate distortions about distortions since the original information was subject to all the above trends.

(Corner, Kinichi and Keats, 1994) propose a "parallel" information processing model in which they state that individuals and organizations operate essentially according to the same principles, i.e. the processing of information begins with attention, proceeds with coding, moves on to storage and retrieval and culminates in the choice and ends in the evaluation of results, as can be seen in Figure 2:

Figure 2 - Organizational results



Source: Adapted from (Corner, Kinicki and Keats, 1994), *Integrating Organizational and Individual Information Processing Perspectives on Choice*, Organization Science, vol 3, pp. 294-308

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- **Attention** - determines which information is processed and which information is ignored;
- **Coding** – gives meaning to information, seeking an adaptation between it and existing categories, such as that a person is "client" rather than "visitor"; categories are often the sources of trends because they eliminate nuances. Everything that is put into a category runs the risk of becoming a stereotype. At the heart of this process is a kind of common structure of group knowledge, through which a common framework of interpretation becomes dominant.
- **Storage/Recovery** - Cognition starts with memory. In the case of people, memory is a tea of associations between different items of information. In the case of organizations, the information is also contained in maps, rules, procedures, conventions and technologies. The connection between the two is socialization: the organization works for the individual to accept the existing routines that become part of the individual's memory, thus intune cognition with the organization.
- **The Choice** – the process of choice goes back and forth, from one stage to another and vice versa, before moving on to the decision. The decision may lead to the collection of additional information.
- **Results** - the results announce the beginning of the feedback process.

Cognition as a Mental Model

There are mental structures to organize knowledge. A wrong mental representation is better than no representation, since it encourages and stimulates action (Karl Wieck, 1990, p.5). Mental models also called "schemes" are bombarded with information and the problem is how to store them and make them immediately available. Schemes do this by representing knowledge at different levels, which enables people to create complex pictures from rudimentary information to fill the voids.

Decision makers have certain expectations associated with a particular scheme. What they see adds detail to these expectations and produces new questions, such as what is the likely evolution of the economy or prices? These questions can almost automatically emerge from the scheme. This is what makes them efficient from the point of view of information processing. However, inconsistent evidence is ignored. The cognitive school is an evolving school on the strategy formulation process and presents as main premises the following:

- The formulation of the strategy is a cognitive process that takes place in the strategist's mind.
- Strategies emerge as perspectives, in the form of concepts, schemes or mental models that shape the way managers deal with information from the environment and internal.
- The information flows through all misrepresenting filters before being decoded by cognitive mental models; are merely interpretations of a world that exists only in terms of how it is perceived
- Strategies as a concept are difficult to accomplish and when performed they are below the optimal point and are subsequently difficult to change when they are no longer viable.

Criticism

Cognitive psychology needs to deepen knowledge about how concepts are formed in the strategist's mind, on the one hand and on the other it would be useful to know not only how the human mind distorts, but also how it can integrate a diversity of complex information. The formulation of the strategy applies more as an individual process than as a collective process.

Contribution

Cognitive school is less deterministic than positioning school and more personalized than school planning. It was the first school to recognize that there is an interesting environment out there and that strategists do not harvest the strategies of a tree of opportunities from the environment, nor do they follow the prefixed conditions when entrepreneurial leaders fail to steer them to visionary niche markets.

THE SCHOOL OF LEARNING

The school of learning is based on the principle that managers and organizations learn over time, in other words, it is based on description rather than prescription. The proponents of this school ask a simple but very important question: how do strategies actually form in organizations? Not how they are formulated, but how they are formed. They claim that people informed anywhere in the organization can contribute to the strategy formation process (Walter Kiechel, 1984, p.8, Braybrooke and Charles Lindblom, 1963).

Organizations are made up of a series of "subsystems", such as diversification, reorganization and external relations, so strategic management means the search for "development or maintenance, in the minds of managers, in the minds of managers of a consistent pattern between the decisions made in each subsystem", that is, the strategy is made along the way. The top managers

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are the architects of the strategy as in the *school of design*. The process is a continuous, pulsating and dynamic process (Quinn, 1980a, p.52). The prescriptions for logical incrementalism of (Quinn, 1982) can be summarized in the following:

- Leading the formal information system – rarely, the initial signals for strategic change come from the formal systems of exploitation of the environment or the company. The initial feeling of need for a change of strategy is described as "something with which the manager does not feel well", "inconsistencies" or "anomalies" (Normann, 1977);
- Create organizational attention – in the initial stage of strategy formulation, the process is rarely directive, since they can evolve studies, questionnaires, listen, talk to creative people outside the common decision channels.
- Legitimized new points of view – *create* discussion and reflection forums as a way to obtain a better information base that allows new options to be objectively evaluated compared to the best-known alternatives.
- Structure flexibility – no one can predict the form and precise timing of all the important threats and opportunities a company can find.
- Crystallize the focus and formalize the commitment – to the extent that managers develop information or consensus on desirable impulses can use their prestige or power to force or crystallize a given strategic formulation.
- Recognize that strategy is not a linear process – the validity of the strategy is not in its clarity or in its rigorous structure, but in its ability to capture the initiative, to deal with unforeseen events, to redistribute and or concentrate resources as new opportunities and new impulses emerge.

To manage a strategy, you need to know how to model both thought and action, control and learning, stability and change. The strategy formulation process involves the interpretation of the environment and the consistent development of patterns in the flows of organizational decisions. There is no universally accepted definition of strategy, since the world is full of contradictions and the strategist is one who lives with **contradictions, appreciates** their causes and effects and reconciles them to effective action - emerging strategies (**Mintzberg**, 1972, 1978, 1985, 1989, 1991, 1995).

Mintzberg began by redesign the manager's tasks. Later his studies evolved into the "*design of organizations*" and more recently his work focused on the field of strategy. Thus, he began by demonstrating that there were four myths, four ideas of the manager's work that did not correspond to the practice, that is:

- Managers were almost exclusively oriented towards action and not for reflection.
- Managers perform repetitive tasks.
- Managers favour verbal contacts.
- Many of the knowledge of managers is left in your mind.

Take the idea of dividing the human brain into the left and right hemisphere and apply it to management. Thus, the left hemisphere deals with logical thinking processes and treats **information** sequentially, while the right hemisphere specializes in simultaneous treatments (establishes immediate relationships between two or more facts) and has the ability to understand visual images. Planning and management techniques are sequential, systematic and explicit, so they appeal to the left hemisphere. Managers plan and predict using analytical processes, but effective direction goes beyond that, i.e. important decision-making processes rest in the right hemisphere. Thus, it states that managers plan on the left and manage on the right. It proposes five definitions of strategy known to the **5P's**:

- **Plan - The Strategy as a plan** - is a script that precedes the actions to which it refers.
- **Ploy - Strategy as a ploy** - being understood as plans, strategies can be general or specific. A *Ploy* is no more than a ploy to discourage competitors.
- **Pattern - Strategy as a pattern** - once defined strategies have to result in behaviors, that is, as a set of implicitly established actions.
- **Position - Strategy as a position** - the question that arises is "how does the company position in its context?". The strategy emerges as a media force between internal and external contexts. Therefore, position is the way to find the company.
- **Perspective - Strategy as a perspective** - considers that strategy is something that exists only in the minds of *stakeholders*, since it is something shared by its members through their intentions and/or actions. Thus, the perspective is how the company views and justifies events, reflecting its own culture.

It also distinguishes between deliberate (planned) strategy and emerging strategy. The deliberate implies that the actions previously defined (plans) were fulfilled. The emerging strategy means that standards have been developed or adopted in the

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absence or in place of plans. It is a concept that is not consistent with that of strategic planning. The deliberate strategy focuses on control – certification that the intentions of top managers are or have been realized, while the emerging strategy focuses on learning – come to understand through the execution of actions governed by intentions. The process of formulating and implementing the strategy becomes a fluid learning process through which creative strategies are developed. Emerging strategies arise in response to changing situations and encourage learning, so the big problem is reconciling the forces of stability with the forces of change and concentrating efforts to achieve maximum **effectiveness** in the face of changes in the environment.

The deliberate strategy is a set of integrated views of the company's performance and results from collective involvement, while the emerging strategy is the result of the individual decision of the strategist. The deliberate strategy is based on formal and informal information of the collective knowledge of the organization and the emerging strategy is reactive and is based on individual information (formal and informal). The deliberate strategy is proactive while the emerging one is reactive.

The company should be seen as a skills tree and cannot be reduced to its products and markets. In a tree the roots represent the technological skills and know-how, the trunk represents the organization of production, it is as important as the branches that represent the product line. Because a branch dyes is not why you should cut the trunk of the tree. The past is unique, and its analysis allows us to understand the constants and permanence of the company, to know better its capacity for historical evolution. The future is uncertain, and its analysis allows you to identify the threats and opportunities and define the bets and challenges that arise to you, in order to determine the desired future. The present lies somewhere between the past and the future. The need for survival and the development of the organization, as an agent of production of goods and or services and their recognition as a social structure, link to technical and economic systems and are met through a rational model of adequacy of the structure to the objectives. The recognition needs refer to the system of cohesion and social reproduction that allows the normal functioning of society.

Thus, survival requires the creation of external strategies through the marking of objectives taking into account the environment and internal strategies for the adequacy of the organizational means most capable to achieve them. The coexistence of the two strategies (external and internal) contributes to the definition of the organization's borders, while its association expresses rationality.

The author does not make clear the concept of strategy, this emerges from the internal dynamics of the company, that is, from its capabilities and skills as an agency to produce goods or services. Only the need for survival is what forces managers to define the objectives to be achieved. But the authors tell us about the internal strategy to operationalize the implementation of the strategy. The strategy consists of coherence and harmony between three dimensions: economic, policy and organizational infrastructure and confronts the characteristics and objectives of individuals and organizations. The model is mainly based on the analysis of macroeconomic variables and those of an organizational nature, i.e. social aspects that may have influence on the organization, due to the turbulence of the environment (macroeconomic, technological and social). As the main basic premises we can now conclude the following:

- The complexity and turbulence of the surrounding environment, associated with the dissemination of the knowledge bases necessary for the strategy, prevents deliberate control; the formation of the strategy needs above all to take the form of a learning process over time.
- It is the collective system that learns, since there are many potential strategists in organizations, although the leader must also learn.
- Learning proceeds in an emerging way, through behavior that stimulates retrospective thinking so that it can understand the action. Strategic initiatives are taken by those who have the capacity and resources to be able to learn.
- The role of the leader becomes to manage the strategic learning process, through which new strategies can emerge, rather than preconceived deliberate strategies.
- Strategies first appear as patterns of the past, later perhaps as plans and finally as perspectives to guide general behavior.

An important and recent contribution has been made by the "creation of knowledge", that is, managers need to recognize the importance of tactical knowledge – what we know implicitly from the inside, and how it differs from explicit knowledge – what we formally know. Tacit knowledge is personal, context-specific and therefore difficult to formalize and communicate. Explicit or "coded" knowledge refers to knowledge that is transmissible in formal and systematic language (Nonaka and Takuchi, 1995, p.59).

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Particularly crucial is the conversion of tacit knowledge into explicit knowledge, in which managers play a fundamental role, since it is the people who synthesize the tacit knowledge of employees, making it explicit and incorporating it into products and technologies. The four modes of conversion of knowledge are (Nonaka and Takcuchi, 1995):

- **Socialization** – describes the implicit sharing of tacit knowledge, even without the use of language, such as through experience.
- **Exteriorization** – converts tacit into explicit knowledge, through the use of metaphors and analysis.
- **The Combination** – combines and passes on formally coded knowledge from one person to another, such as through training.
- **Interiorization** – takes explicit knowledge back to tacit form, as people internalize it, as in "learning by doing".

"The essence of the strategy lies in developing organizational capacity to acquire, create, accumulate and explore knowledge. Knowledge is created only by employees, the role of the organization is to facilitate learning, supporting and stimulating individual learning, amplifying it, crystallizing it and synthesizing it at the group level through dialogues, debates, exchange of experiences and observations" (Nonaka and Takcuchi, 1995). The basic character of the learning organization (Joseph Lampel, 1998) can be summarized in the following:

- Organizations can learn from failure as much as success.
- It is always possible to improve work processes even when they seem efficient.
- In organizations that learn operational managers and employees closest to work processes, such as commercial, production, distribution, often know more than their hierarchical superiors.
- An organization that learns actively seeks to transfer knowledge internally from one employee to another, in order to ensure that relevant knowledge is where it is needed.
- Organizations that learn expend a lot of energy in the search for knowledge.

The organization that learns is the antithesis of bureaucratic organizations, since it is decentralized, encourages open communication and people to work as a team. Collaboration replaces hierarchy and the prevailing values are risk acceptance, honesty, and trust.

Criticism

In the organization that learns people must understand that there is a time to learn and that there is a time to explore previous learning. In addition, there is superstitious learning and "group thinking" that means learning in an isolated group. There is also negative learning of progressive impairment, that is, the more one fails the more one continues to invest in the hope of recovering losses without recognizing that the situation can be irremediable.

Learning can be expensive, as it takes time and often results from endless meetings and disperses in the most scrupulous directions and can lead to investing resources in false initiatives. People have to be convinced of the benefits of initiative over another. The organization may be forced to disperse and therefore pay a high price for not concentrating resources on essential products. An organization that learns also cares about unnecessary learning.

Contributions and context

Learning seems particularly necessary in professional organizations operating in overly complex environments where the knowledge required to create strategies is very diffuse. Top managers may be able to formulate the strategy, but political realities require that implementation be a process of collective agreement, if not collective learning.

The school of learning brings a reality to the study of the formation of strategies, since it tells us less what organizations should do and more what they really do, when confronted with complex and dynamic conditions, reinforcing voluntarism in what seems to be determinism. Within what appear to be reactive or passive responses to external forces, organizations learn and create – they suggest new and interesting strategies.

THE SCHOOL OF POWER

Here we use the word *power* to describe the exercise of influence beyond purely economic, that is, it brings it closer to politics, a term that we use broadly. Politics becomes synonymous with the exploitation of power in a way that is not purely economic. If the formulation of the strategy can be a process of planning and analysis, cognition and learning, it can also be a process of negotiation and concessions between individuals and groups. (Bolman and Deal, 1997) formulated the following propositions regarding the world of organizational policy:

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- Organizations are made up of various individuals and interest groups, sometimes antagonistic.
- There are lasting differences between groups and individuals in values, beliefs, information and perceptions of reality.
- Most important decisions involve the allocation of scarce resources.
- Scarce resources and lasting differences give conflict a central role in organizational dynamics and make power *the* most important resource.
- The goals and decisions emerge from "wars", negotiations and maneuvers in search of positions, among the different stakeholders.

For (Martinet, 1989) large companies formalize procedures to elaborate strategic planning and aware of the growing weight of social variables try to plan their social development. All these procedures are called into question by the emergence of new problems and are, in theory as in practice, subjected to evolution. (Martinet, 1989) thus rejects the concept of planning forecasting, since planning is not about predicting the future, but also in building the future of the company and rejects the concept of planning table of decisions (models of the portfolio of activities), since planning also consists in researching and wanting to dominate the evolution of the company. It subverts quantified planning, its rigid and static nature, although it is indispensable as a quantitative and operational expression.

It defines the concept of **strategic** management as ensuring in time the best coherence between the requirements of the environment, the different stakeholders (internal and external) and the objectives of managers, which means that it is the overall management of the company (the management of the existing and the creation of potential). Strategic management is interested in the dimensions:

- Technical-economic - product-market-technology.
- Organizational - organizational architecture that enables the effective execution of the technical-economic dimension.
- Policy - social structure as a means of achieving the performance of the company.

The model shows that the strategic analysis is transformed over time and that the initial technical-economic analysis is complemented with the integration of complementary dimensions: the consideration of the company as a social organization and the recognition of it as a political system. It considers as key variables (information) the interdependence between the variables globalizations, technological turbulence and inflation, that is, it contemplates only the variables of the global environment and forgets the variables that have an impact on some organizations (industry or sector). While the different models of strategic analysis base their study on the analysis of competition, when it does not exist or takes forms far removed from free competition, it is necessary to approach new forms of strategy definition and which can be classified as relational, according to the authors and whose illustration is now known as strategic or cooperation alliances.

The relational approach was explored in a series of empirical works carried out by the school (HEC, 1985). "*A strategy is said to be relational when it is based not on competition law, but on privileged relationships that the company establishes with certain partners in its context*". The notion of competition is not entirely absent, but becomes secondary. Many multinational companies have built their power and prestige by focusing on a single field of activity, that is, through specialization. Others, especially in the 1960s and 1970s, based their development on a logic of diversification, supported by economic growth and profitability in the fields of activity. Specialisation is part of an exclusive framework of a given field of activity, in which the company concentrates all its efforts in order to achieve the best possible level of competence and with it a decisive competitive advantage.

Volume strategies follow this logic, as the company bets on the effect of experience to improve its position on costs and therefore a competitive position. The same is true of the differentiation strategy in which the company focuses on a niche market where it hopes to find a competitive position, either by modifying the rules of play or by the key actors of success. Specialization is in different ways and depends on the degree of maturity of the activity and the competitive position of the company. Thus, there are moments more conducive to specialization than others, that is, no one specializes in a field of activity that has reached maturity. On the contrary, specialization accompanies the growth of the activity, since the winner will be the company that has been able to grow faster.

A company can follow two paths of specialization: geographical and product/market. The geographic consists of making expansion or restriction options within the market that defines the domain of activity of the company. The product/market consists of generating, or selecting, the set of products/market whose key success actors are identical within the field of activity. Specialization must be pursued if a company does not reach a position that gives it a decisive and lasting advantage. Dispersion is

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the number one enemy of a growing activity. However, specialization imposes a great concentration on the activity and the numbness of the potential for diversification.

Diversification requires companies to use a new set of "*savoir faire*" as it goes beyond the mere extension of the field of activity, to which it is a new set of key actors of success, so that companies when launching themselves into diversification seek to take advantage of the synergies (management, commercial and/or operational) existing with the mastery of the main activity.

Companies can adopt three dimensions for diversification:

- The geographical dimension (geographical diversification) - occurs when the company leaves its market and heads to another zone/region in which the key actors are different, even if the products manufactured and sold are similar.
- The row dimension (vertical integration or diversification) - is translated by the acquisition of new competences upstream and/or downstream and by a strengthening of the competitive potential of the company in its main activity.
- The size of the activity (horizontal diversification) - the company enters different areas of its main activity, often relying on synergies and complementarities.

The authors present two privileged modes of development, both in the case of specialization and diversification:

- Internal development - is the privileged route to a specialisation strategy in the growth phase of the field of activity; in the case of diversification the determining criteria are the company's ability to innovate and learn the new business.
- External development - translates into buying or alliance with other companies, whether they are competitors, in the case of specialization, or belong to another field of activity.

There are in almost all organizations three systems whose means can be described as legitimate: formal authority, established culture and know-how. We can, however, find a fourth system, politics, whose means are not formally legitimate (Macmillan and Guth, 1985):

- Politics as a system of influence can act to ensure that the "strongest" members of an organisation are placed in leadership positions.
- Politics can ensure that all sides of an issue are fully debated, while other systems of influence can promote only one.
- Policy may be required to stimulate the necessary changes that are blocked by the most legitimate systems of influence.
- The policy can facilitate the path to the implementation of the changes.

The formulation of the strategy through networks, alliances, partnerships are part of the new vocabulary of this school, that is, companies negotiate through a network of relationships, formulate the collective strategy. There are clearly parts of planning and positioning in this formulation, but the power and aspects negotiated are great (Elfring and Volberda, 1998).

- **Networks** – companies expand their relationships with each other, in increasing and in-depth, i.e. companies do not operate in isolation, but in complex networks of interaction with other companies and organizations (Hakansson and Snehota, 1989).
- **Collective strategy** – it is a joint strategy among the members of a network to deal with their complex interdependencies, i.e. "collaboration" comes to dominate the process of formulating the strategy to the detriment of "competition" (Astley and Charles Forburn, 1983).
- **Strategic alliances** – are "joint ventures" in which partners take positions (e.g. actions, long-term contracts) in new businesses they have created, such as sharing research and development skills for the development of a new product.
- **Strategic outsourcing** – is a form of cooperative agreement that concerns hiring outside of what could be done internally (*Outsourcing*).

Networks, alliances, collective *strategies and outsourcing*, all this together, increasingly makes it difficult to know where one organization ends and begins the other, that is, the limits of organizations are becoming increasingly vague as networks replace rigid hierarchies inside and become open markets externally. The school of power is based on the following premises:

- The formation of the strategy is shaped by power and politics.
- The strategies that can result from this process tend to be emerging and take more the form of positions than perspectives.
- Micro power sees the formation of strategy as an interaction, through persuasion and sometimes direct confrontation, in the form of political games, between sometimes antagonistic interests.
- The macro power sees the organization as promoting its own well-being by control or cooperation with other organizations, through maneuvers, as well as collective strategies (e.g., networks or alliances).

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Critical

The formation of the strategy involves power, but not only. The role of integrating forces, such as leadership and culture, tends to be overlooked by this school, as well as the concept itself of strategy. Focusing attention on division and fractionation leaves aside patterns that form, even in more conflicting situations. While the political dimension can play a positive role in organizations, especially in promoting changes blocked by established and legitimate forms of influence, it can also be a source of waste and distortion in organizations. It makes no sense to describe the formation of strategy as a process devoid of power and politics.

Contributions and contexts

The school of power has introduced a new vocabulary in the field of strategic management, such as "networks", "political games", "collective strategies". He also stressed the importance that politics has in promoting strategic change when established actors seek to maintain the *status quo*. They need to be confronted, even though politics is also a factor of resistance to strategic change, but not as effective as the strength of culture.

THE SCHOOL OF CULTURE

Power takes the entity called organization and fragments it while culture brings together a collection of individuals in an integrated entity called organization, that is, power focuses mainly on self-interest, whereas in culture interest is common. From the point of view of anthropology, culture is present in everything that surrounds us and at the same time deals with what differentiates one organization from another, one nation from another. Culture was discovered in the 1980s thanks to the success of Japanese companies, as they seemed to do things differently from western ones.

Culture is essentially composed of interpretations of a world, of the activities and artifacts that reflect them. In addition to cognition, these interpretations are shared collectively in a social process. Some activities may be individual, but their importance is collective. Organizational culture is associated with collective cognition and becomes the "mind of the organization", that is, the common beliefs that are reflected in traditions and habits, as well as in the most tangible manifestations, such as histories, symbols, buildings and products (Pettigrew, 1985, p.44).

An ideology is a rich culture of an organization – a strong set of beliefs shared passionately by its members that distinguishes it from the other. Of course, political systems also have ideologies (e.g. capitalism, socialism), just as there are societies and ethnic groups with cultures (e.g. Japanese, Portuguese, French), also industries (e.g. commercial aviation, banking). We then summing up the main premises of the school of culture:

- The formation of the strategy is a process of social interaction based on the beliefs and common interpretations of the members of an organization.
- An individual acquires these beliefs through a process of acculturation or socialization.
- Members of an organization can only partially describe the beliefs that underpin their culture, although the origins and explanations may remain unclear.
- As a result, the strategy takes the form of a perspective rooted in collective intentions and reflected in the standards by which resources and/or capabilities are used as a competitive advantage.
- Culture does not encourage strategic change by perpetuating the existing strategy, at best it tends to promote changes of position within the organization's global strategic perspective.

The links between the concepts of culture and strategy are many and varied:

- **Style of decision-making** – culture influences the style of thinking, as well as its use in analysis, as well as the process of formulating the strategy. Culture acts as a receptive filter, which in turn establishes the premises of people's decisions (Snodgrass, 1984). An organization develops a "dominant logic" that acts as an information filter, leading to a focus on certain information for the creation of the strategy to the detriment of others (Pralhad and Bettis, 1986).
- **Resistance to strategic change** – a common commitment to beliefs encourages consistency in an organization's behavior but discourages strategic change. Beliefs rooted in culture act as powerful internal barriers to fundamental change (Bettis and Prahalad, 1995, Abrahamson and Forburn, 1994).
- **Overcoming the resistance to strategic change** – it is necessary to pay attention to how to overcome the inertia of organizational culture, so managers must accept as a main part of the company's culture the importance of flexibility and innovation (Lorsch, 1986, p.104).
- **Dominant values** – successful companies are "dominated" by key values such as service, quality and innovation which in turn give rise to competitive advantages (Peters and Waterman, 1982).

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- **Culture shock** – the strategies of mergers, acquisitions and joint ventures have to be examined from the point of view of confrontation, between different cultures, that is, although from the "rational" point of view of the product and the market makes sense, the less evident cultural differences can serve to undo the union.

Critical

The cultural school lacks conceptual clarity about what strategic management is. A danger that this school runs is that it discourages the necessary changes, since it favors the consistency of remaining in the same strategy, since culture is heavy and established, resources are installed, rooted, emphasizes tradition and consensus, besides characterizing changes as complex and difficult, can encourage a kind of stagnation. Another criticism of the cultural school is that it equals the strategic advantage, the organizational singularity. Being different is often good, but not in itself, because it can provoke a certain arrogance.

Contributions and Context of the School of Culture

It gives managers a set of vocabulary of their own to justify the *status quo*. Any organizational practice that seems incomprehensible can be justified on the basis of inimitability. Resource-related ambiguities can help explain why successful strategies can remain unquestionable for a long time, but they don't let managers know when and how to question them. The problem of this school and resource-based theory explain very easily what already exists, rather than taking care of the difficult issues of what may exist (the future). It is against the individualism of design schools, cognitive and entrepreneurial, since it brings the important collective dimension of the social process, creating integrated perspectives.

Compared to the school's historical worry-free trends of planning and positioning – changing strategy as you change clothes – it emphasizes strategy in the organization's rich culture, since strategy becomes the management of collective cognition. All of this applies more easily in non-profit organizations and to certain periods of life of organizations.

THE ENVIRONMENTAL SCHOOL

The environmental school treats the set of forces outside organizations, the environment, as an actor, while other schools see it as a factor. This school positions the environment as one of the three central forces in the formulation of the strategy, alongside leadership and organization. In addition, it has helped to describe different dimensions of the environments that strategists have before them and to suggest their effects in the formulation of the strategy. Of course, the environment has never been absent from other schools. He is present, for example, in the positioning school, but in a very specific way: as a set of economic forces – representing industry, competition and the market. Similarly some cognitive school researchers reflect the influence of the environment: this is considered a place that transmits confusing signals, too complex to be fully understood.

The environmental school comes from the so-called "contingency theory" which describes the relationships between certain dimensions of the environment and specific attributes of organizations, such as the more stable the external environment, the more stable the internal structure remains. These concepts were later extended to strategic management, such as stable environments favor planning. The main premises on which the environmental school is based can be summarized in the following:

- The environment presents itself to organizations as a set of general forces and is the central agent in the strategy formulation process.
- Organizations must respond to these forces or be "eliminated".
- Leadership becomes a passive element in the interpretation and analysis of the environment and in the appropriate adaptation of the organization.
- Organizations are grouped into distinct ecological niches, positions in which they remain until resources are scarce or conditions are too hostile.

The Contingency Vision

The environmental school has its origins in contingency theory, to satisfy the understanding that different situations give rise to different behaviors, so more systematic descriptions of environmental differences were identified in four groups by (Mintzber, 1979):

- Stability – an organization's environment can range from stable to dynamic.
- Complexity – an organization's environment can range from simple to complex.
- Market diversity – an organization's markets can range from integrated to diverse.
- Hostility – an organization's environment can range from favorable to hostile.

Contingency theory developed a set of concepts, whose main contribution was to the school of configuration (Pugh et al, 1963-64, 1968, 1969), as for example:

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- "entrepreneurs who take risks tend to be associated with dynamic environments".
- "strategies will be more comprehensive in environments with the highest number of opportunities".

The Ecological View of the Population

The environmental school has a greater expression through the approach of population ecology. While contingency theory allows adaptations, the ecology of the population doubts that the main characteristics of the world of organizations arise through learning or adaptations, since the basic structures of organizations are fixed shortly after their birth and subsequent actions make them more rigid and less able to make decisions that are truly strategic (Hannan and Freeman, 1977, 1984).

Innovation gives the organization an advantage, but survival depends on its ability to acquire an adequate supply of resources, even though each environment has a finite volume of resources. Organizations can get the most out of their environment by maximizing suitability, or they can keep resources as a buffer for future emergencies.

The ecology of the population has become a search for what has the effect of raising or reducing the survival conditions of an organization. Ecology uses the variation-selection-retention model, so larger organizations are more resource-eager and therefore have lower probabilities of failure.

The "deficiency of being new" in an industry means that new companies in an industry are more likely to die than those who have been there longer. The "deficiency of aging" tells us that the initial advantages have become a source of inertia as organizations age. The "deficiency of adolescence" indicates that the greatest danger is in the transition phase between childhood and maturity. Birth is realized with innovative ideas and entrepreneurial energy and maturity is characterized by the use of considerable resources and power (Hannan and Freeman, 1977, 1984).

Critical

The environmental school has a very narrow view of strategic alternatives, since the dimensions related to the environment are abstract, vague and aggregated. The strategy has to do with selecting specific positions, so differentiation is a particularly important concept because it describes how organizations differ in seemingly similar environments.

No organization faces a generous, complex, hostile or dynamic (turbulent) "environment", so strategists need "thin" surveys that provide "dense" descriptions, containing nuances with respect to time, application and context.

Contribution and contexts

The school of learning also emphasized the complexity of the environment, but as a place less to react than to feel, experiment and interpret, as well as learn. As we move through the various schools, the power of the strategist has diminished. In the *schools of design* and *entrepreneur*, the "boss" dominated. Planning and positioning schools have introduced the concepts of planning officers and analysts as support strategists, while the cognitive school draws attention to the limitations of the strategic thinker in this complex world.

Additional strategists were being introduced by the schools of learning and power reaching the complete collectivity of the cultural school. In spite of everything the concept of strategist continues to rein, whoever he is – an individual or the collectivity.

THE SCHOOL OF CONFIGURATION

In the configuration school there are two sides, one that describes the states of the organization and the context that surrounds it, how to configure and the other side describes the process of formulating the strategy, as transformation, that is, when an organization adopts states of being, then the strategy becomes a process of jumping from one state to another, that is, the transformation is an inevitable consequence of the configuration. The positioning school groups certain conditions to define "states" or "models" of the different dimensions of organizations, such as newly formed organizations, especially in emerging industries, tend to depend on entrepreneurial leaders who use visionary strategies and operate with simple structures.

The school's configuration sequences the different states over time to define organizational "stages" or "periods" or "life cycles." For example, as an entrepreneurial organization ages and its industry settles into maturity, the initial stage gives way to a formalized structure of professionals who rely on planning processes. The school's premises of the setting cover some of the other schools although in a well-defined context:

- Some organizations adopt stable configurations in a given different period of time and adopt a certain appropriate structure in a given context, which causes them to have certain behavior that give rise to certain strategic options.
- Periods of stability are interrupted by some transformation process – a jump to another configuration.

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- Successive states of configuration and transformation periods can be ordered over time into standardized sequences, such as lifecycles.
- The key to strategic management is the support of stability or at least strategic changes temporarily adaptable, but periodically recognize the need for transformation and be able to manage this process of rupture, without destroying the organization.
- The strategy formulation process can be conceptual design or formal planning, systematic analysis or strategic vision, cooperative or competitive policy learning, individual cognitive focus or collective socialization, or the simple response to the forces of the environment in the appropriate time and context.
- The resulting strategies take the form of plans or patterns, positions or perspectives or means of deceiving, but each in time and appropriate to the situation.

Strategic and structural changes are *quantum* rather than incremental, while the states of strategy, structure, situation and processes are transitions between archetypes (combination and integration of different attributes of organizations). For example, the archetype of stagnant bureaucracy leads the company to stagnate in a simple and placid environment; a headless giant is a set of businesses with weak central authority; the dominant company is well established and immune to serious challenges, with centralized structure and traditional strategies; an innovative, generally small company with niche strategies, simple structure and diversified product line, with a lot of product innovation (Miller, 1976).

A *quantum change* means changing many elements at the same time, compared to gradual change – one *element* at a time, such as first the strategy, then the structure, and then the systems. Organizations spend most of their time following certain strategic guidelines, such as improving costs and productivity. This suggests that success is achieved not by changing strategy, but by exploring existing strategic options, while the world changes and at some points the configuration loses synchronia with the surrounding environment in need of a strategic revolution during which many things change at the same time (Miller and Friesen, 1980b, 1982a, 1984).

Emerging strategies are always repressed until a strategic revolution occurs (change of strategy) and in this case the organization instead of having to develop new strategies from scratch or copying them from competitors, can find the new direction in a deliberate way within its own emerging standards (Mintzberg and McHugh, 1985).

The change as revolutionary in the school of configuration is contradicted by the notion of change as incremental in the school of learning, so it is important to appreciate each school of thought about the process of formulating the strategy, as well as combining them with some kind of comprehensive structure. For example, the cognitive school seeks to tell how they think the strategists, the entrepreneurial school as they jump strategy and the cultural school as they land and the build school suggests the sequence. Organizational change is described through an "ecosystem" model of crisis and renewal consisting of two arches that cut to form the symbol of infinity. In human organizations there are cycles around similar phases, between emerging and forced actions. Entrepreneurial action leads to conservation or accommodation, which ends up causing crisis and confusion, which stimulates creative responses and thus begins a new cycle (Chandler, 1962, David Hurst, 1995).

Half of the "front or curve of performance" of the model shown with a solid line is the "conventional life cycle", and here is the "strategic management". The "back or curve of learning" shown the dotted represents "the cycle of renewal and redesign", less known, being the domain of "charismatic leadership" (David Hurst, 1995).

The Transformation of Organizations

The transformation of organizations can cover various forms such as reformulation, revitalization, *downsizing*. The comprehensive change in an organization means the change of strategy and structure, ranging from conceptual to concrete and from formal-to-formal behaviors. We can consider three methods of change that are distinguished by size and breadth, for example a small change focuses within the organization – redefinition of the structure, a great change involves the whole organization and can undergo a new positioning before the market and new facilities (Mintzberg, Ahlstrand and Lampel, 1998):

- **Planned change** – is programmed through a set of procedures to be followed, such as quality improvement, training.
- **Change driven** – is guided by an individual or a small group, usually in an influential position of authority that oversees change, such as restructuring.
- **Evolved change** – it is organic and happens or is guided by people who do not occupy positions of significant authority in the organization.

In the first two methods of change, it is conducted or somewhat "managed" more formally by procedures than by managers, whereas in the latter, it is not managed, not even under the control of managers.

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Critical

The school of configuration represents a flawed approach to theorization because it is extremely easy to understand and teach. Organizations have many *gray nuances* and not only black and white, that is, organizations have a great diversity of configurations, especially large ones that have several business units with different structures and that follow different strategies. Quantum change is empirically and conceptually wrong in that organizations are not static or changing rapidly, as most of them spend much of their time changing incrementally.

Contributions and contexts

The contribution of the school's configuration is evident to the formulation of the strategy, in that it puts "order" in the multiform literature and practice, through ten distinct ecosystems or mental systems, ten configurations imagined from a single world that is not as pleased as it seems.

STRATEGIC INFORMATION

The Theory of Strategic Information

As we said before the main reason for the construction of the theory of strategic information is simply that there is no theory. The area of strategic management needs a reasoned theory that explains the use of strategic information, since as a strategic potential it has been unknown for a long time (Clemons, 1987, Porter *et al*, 1985). Often the possibility of using information and communication technologies as a strategic asset is examined, however information as a strategic asset is conveniently forgotten (Amit *et al*, 1993). Moreover, this need for strategic information theory is more surprising, bearing in mind that the economic theories of organizations are at our disposal with appropriate foundation for such a theory. In addition to all microeconomic theories have the tradition of the need for strategic information research (Hoskisson *et al*, 1999, Rumelt *et al*, 1991).

In short, it is possible that the theory of strategic information contributes to the theoretical progress of strategic management and strategic management of information as a discipline and to the theory of resources base of organizations. Opportunities continue to:

- Fill the gap in strategic management to explain the focus of the use of strategic information resource in the definition of the strategy.
- Enrich organizations' Base Resources theory on how information can be monetized and under what circumstances it can be sustained.
- Find the discipline of information management with the theory of strategic information management without placing emphasis on issues related to information and communication technologies.

In economic theory, the considering of the perception by managers of the environment was successively guided by the function of information leading to the corresponding anticipations and underlying beliefs. In the theory of management these same concepts were gradually introduced and acquired around the strategy, to the extent that the surrounding environment is formed by other "actors" acting in a similar way. The belief of managers is increasingly formalized in the help of cognitive sciences, as well as in epistemic logic (hierarchical beliefs) and cognitive psychology (review of beliefs). The exchange of information between managers is also studied in conjunction with cognitive sciences, as to the coordination they allow (distributed cognition) and the dynamics they induce (learning process).

After recalling the relevant typologies of information in management theory, some problems linked to believers are progressively addressed and illustrated. The individual structure of believers that translates a uniform or probabilistic uncertainty finds its explanation in the value of information. The collective hierarchy of increasing knowledge that culminates in the notion of knowledge provides a cognitive justification of balance, supported by the simple reasoning of managers. The individual review of believers whose rules adapt to the varied contexts of review authorizes a strategic treatment of information, whose dissemination is controlled by managers. The collective review of believers that encourages a form of consensus studies the types of balance resulting from the convergence of the learning process.

Information Imperfections

Although there are types of market imperfections (Yao, 1988), the theory of strategic information focuses only on the competition of information imperfections. The theory with this focuses and elaborates the principles of the Base Resources, the neoclassical assumption of complete and perfect information. These imperfections of information create the opportunities of the so-called

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profitability of information that companies can exploit and take advantage of the meaning of strategic information. The theory immediately emphasizes the resource information and capabilities for:

- Identify the imperfections of information in the product and market factors.
- Maintain or alter the imperfections of the information that is not in the case.

In order to be able to identify the imperfections of information and its origins it is necessary to understand them first. The imperfections of information derive from the behavior of the assumptions of rationality and opportunism and two types are distinguished: incomplete information and asymmetric information.

Incomplete Information

Incomplete information is associated with the limits of rationality that explain the "limits of the rationality of human behavior information (Simon, 1955). Asked to complete the research for all relevant information, the decision-taker only tries to achieve the subjectivity of satisfaction of the incomplete level of information" (Wigand, *et al*, 1997, p.75).

This type of behavior is known as satisfactory. Satisfactory behavior and incomplete information are part of strategic decision-making in both product and market actors. With regard to market players, for example about the incomplete information of suppliers offering particular resources, whose demand for competitors is, what price they are willing to practice and what differences in quality exist between the resources of different suppliers.

Regarding products for example, incomplete information about what customers should be interested in buying the products, which competitors are competing, what is the demand for a particular product, what price customers are willing to pay and how they differ from competitors' products. Not only companies, but also all or part of the markets, including competitors, customers and suppliers face the imperfections of incomplete information.

Asymmetric Information

Due to incomplete information and fragmentation of knowledge in society as described by (Hayek, 1945), the information can be asymmetrically distributed through the market parts. Information asymmetries have been extensively analysed in all risks of economic transactions (Nobel Foundation, 2001; Akerlof, 1970; Spence and Stiglitz, 1985; Arrow, 1984; Clemons *et al*, 2001; Williamson, 1975).

However, according to (Nayyar, 1990), rarely the asymmetries of information have been seen as a strategic opportunity by companies. This assumes that information asymmetries provide opportunities under two conditions:

- High costs to obtain equal information.
- The tendency to behave opportunistic (Williamson, 1975, p.31).

The asymmetries of the information may result from a favorable situation for the supplier or for the customer, depending on the one that has the advantage of the information and from which of the two exploits this advantage opportunistically.

Maintain or alter information imperfections.

Strategic information focuses attention on the path of companies that do business with incomplete information and or with asymmetric information. Companies that identify the moments of incomplete information in the market and or product actors decide what is their strategic information and what is desirable that:

- At that time there is incomplete information
- At this moment it develops the asymmetries of information, meaning both advantages or disadvantages before competitors, suppliers and or customers. Companies decide whether to devote information resources and capabilities to:
 - ✓ Maintain or change at the moment the incomplete information in the product and market actors, thus influencing positive or negative transparency.
 - ✓ Maintain or alter the asymmetries of information and thereby create advantages or disadvantages of information or equality of information.

Having made the decision to change a particular asymmetry of information in relation to competitors, suppliers or customers, managers have to understand that these economic actors are also characterized by having rational and opportunistic behaviors. Therefore, organizations should use their resources and capabilities to identify information imperfections, creating equal information and should take advantage of their experience in information asymmetries and differences in interpretation (Williamson, 1975, pp. 32).

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The theoretical contribution of this study is to be based on the empirical basis of the recent development of the concepts of strategic information and information profitability. In essence the theory was available to examine and analyze the contribution of strategic information.

The concept developed in this research is based on the current economic theory and based on contemporary theories about the functioning of the market. The resources of organizations seem to provide a basic approach to examine, as organizations hope to achieve economic return based on market imperfections. By adding the informational perspective, the role of information and information imperfections in business strategy can be explained through the basic resources of the second organizations (Barney, 1986 and Itami, 1987).

Identification of Information Imperfections

To understand how economic profitability can be identified and appropriated by strategic information, it is through knowledge of the origin of information imperfections. The costs of economic transactions (CTE) describe these origins and three types of information imperfections result from them (Williamson 1975).

The theory of transaction costs attributes two behavioral appropriations to man: the limits of rationality and opportunism. We assume that men are intentionally rational, but they are limited by it. The limits of rationality are outside the inability of the human brain. "This involves the neuropsychological limits of a skill, on the one hand, and on the other, the limits of language. Physical limits take the form of value and the limits of storing the power of individuals to receive, store and process information without errors"(Williamson 1975, p.21).

"Human cognitive abilities are generally insufficient to understand especially complex tasks, to recognize the need for relevant information and to completely process all relevant information" (Wigand, Picot et al. 1997, p.75). Rationality explains the limited behavior of rational information (Simon 1955). "Instead of a complete survey of relevant information, the decision-makers only try to obtain subjective satisfaction at an incomplete level of information" (Wigand, Picot et al. 1997, p.75). This type of behavior is known as "satisfactory": looking for a solution that brings together the level of aspirations of the decision-taker and therefore the acceptable.

Humans are not only rational, but they also assume some opportunistic behaviors. (Williamson, 1975) describes opportunism as "the search for one's own interest with cunning" involving "disbelief of threats and opportunities", in order to realize the individual advantages (Williamson 1975, p.26). These advantages are also suitable for "selecting and distorting the information discovered or discrediting the opportunities that lead to the future" (Williamson 1975, p.26). The claim is that, even if not all humans behave opportunistically, it is difficult to predict in advance whether they will behave as such.

These two types of behaviors reflect the relationship between suppliers and customers in the market. The combination of opportunistic and rational behavior is the main cause for the three types of information imperfections in the transaction market:

- **Asymmetric information** – an asymmetric distribution of information from the parties involved in a transaction causes a strategic opportunity. "The critical impact of information on the optimal allocation of risk is not merely its presence or absence, but its inadequacy among economic agents" (Arrow 1969, p.55).(Williamson, 1975) combines two conditions under which the asymmetry of information provides a strategic opportunity in transactions:
 - ✓ High costs to obtain equal information.
 - ✓ Propensity of the parties to opportunistic behavior (Williamson 1975, p.31). In other words, asymmetric information occurs when one party has information that is unknown to the other and difficult for the other party to obtain and provides an opportunity to exploit this advantage of information through strategic alternatives.

Asymmetric information can result from a favorable situation for suppliers or customers depending on who has that information. The opportunity is caused by the hidden information for the current transaction. One party to a business transaction is better informed about a relevant variable than the other. It is the invisibility of this private information that constitutes the essence of information imperfections and introduces the risk to the other party (Douma and Schreuder 1992, p.54).

Considering the possibility of opportunistic behavior, the party that has the hidden information has no incentive to re-image the information if it is harmful to it. Consequently, any supplier entering the market with a product or service that is particularly suitable for a particular market segment will end up with the main benefits of competitors who benefit from this hidden information. Information imperfections are known as enemies of selection (Arrow 1984).

- **Information ambiguity** – the ambiguity of information in a business transaction can cause a strategic opportunity. Although in the case of complete information, different interpretations of the same information may occur. As a result

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of opportunism, these representations can be opportunistic in the sense that they can lead to an individual advantage for any supplier or customer.

The strategic opportunity for one of them is discovered, when such opportunistic interpretation is not recognized by the other and results in:

- ✓ Customer's willingness to pay a high price for a product.
- ✓ Supplier's willingness to offer a product at a low price.

As a result of this opportunistic behavior, the part with the opportunistic interpretation has no incentive to share that information if it becomes a disadvantage to it.

- **Incomplete Information** – The strategic opportunity of incomplete information is hermetically related to the assumption of rationality. "The limits of rationality are certainly interested in the extent that the limits of rationality are reached – i.e. under conditions of uncertainty and/or complexity. In the absence of any of these conditions for the ownership of contingent shares they may be completely specific to this principle. (Williamson 1975, p.22).

In an environment characterized by a high degree of complexity and uncertainty, the possibility of certain events occurring quickly, become numerous. Under these circumstances, it is impossible for humans to acquire and analyze complete information relevant to strategic decision-making. As explained before, this impossibility leads to "satisfactory" behavior. The opportunity for incomplete information occurs when a customer is incompletely informed about the range of transaction possibilities and the products offered and vice versa.

Therefore, a customer who consents to an incomplete comparison of suppliers and their reciprocal differences can initiate a transaction with the worst supplier. For the supplier this opportunity can be exploited by the establishment of a brand and advertising, in order to become part of the subset of suppliers in the incomplete comparison of customers.

The Profitability of Information

Once information imperfections have been identified in the two relevant actors products and markets, organizations decide how to manage their strategic information. Organizations choose to maintain or take advantage of these imperfections of information, in order to appropriate their profitability or anticipate other forms of appropriation. Strategic information helps maintain information imperfections in unknown markets on the one hand and on the other, to undo information imperfections and increases market transparency.

The theoretical work of strategic information results in 12 basic choices for maintaining or changing choices. Briefly, these choices relate to the three types of information imperfections both for the organization and for suppliers in the market players and for the organization and for customers in the products / market. The choice by any of them to maintain or alter the existence and identification of imperfections of the information depends on the volume of the profitability of the information that can be made by any of them.

Transaction Costs

Transaction cost theory does not allow for information problems. So it is the theory that lasts the objectives to ensure that the most efficient way to coordinate financial transactions, information problems will be solved, because they cause an increase in costs in a transaction, that is, a lower efficiency (Williamson, 1999). However, in practice information problems are the basis for competitive advantages for many organizations and form the basis for their strategy and business model. However, solving information problems may lead to a decrease in competitiveness.

On the other hand, if the theory of transaction costs allows the existence of information problems as the basis for the strategy, the concept of strategy will have to work. This reveals a criticism, that according to (Williamson, 1999) the theory of transaction costs needs to understand the concept of strategy. The concept of strategic information can fill this gap and consequently fill the gap between transaction cost theory and strategic management thinking. Considering the criticism raised above, the basic resource theory of organizations allows there to be information problems and contributes to the concept of strategy. The basic resource theory is an attempt to explain and predict that some companies are able to establish sustainable competitive advantage positions and therefore get superior returns.

The vision of base resources perceives companies as a single set of idiosyncratic capabilities and capabilities where the first task of management is to maximize value through optimal development of existing resources and capabilities (Grant, 1996, p.110). Developing existing resources and capabilities is believed to be the basis of the strategy in the medium and long term, because internal resources and capabilities provide the basic direction for the company's strategy and are the first source of competitive advantage (Grant, 1991, p.5).

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With regard to information problems, this implies not solving information problems by defining low transaction costs. Instead, the paths of behavior with information problems can be seen as the source of competitive advantages and thus the theme of strategy formulation. Information problems provide strategic opportunities based on information resource and the specific capabilities of organizations.

Information in the Theory of Organizations

The production process generates not only the products that companies place on the market, but also the information that different managers can use to increase their productivity (Prescott et Visscher, 1980). Organisations have information on several aspects:

- Information is valuable because it reduces costs (Prescott et Visscher, 1980).
- Information can be accumulated and transformed into knowledge, such as about customers (Crémer, 1981).
- Organizations need to accumulate information on the skills and competences of their employees (Harris et Hölmstrom, 1982, Chiappori, Salanié et Valentin, 1995).

The economic theory of information is mainly interested in the issues in the presence of information asymmetries. These influence the economic environment (the problem of adverse selection) or on the actions of managers (moral problems). It is natural that experts in the theory of organizations have tried to apply the results of the information economy to their field of research.

While contract theory seeks to identify the techniques by which it can incite managers to better reveal the information they have, there are circumstances where it is preferable that information does not circulate well among managers. It can be shown that having less information can facilitate decision-making (Williamson, 1981).

Strategic Information

Organizations when formulating the strategy from the outside in tend to be more aggressive, and restless. The formulation from the inside out is based on the models of strategic movement (sociological) and therefore organizations are less dynamic, that is, they tend to be more passive and inclined to react to events (Mintzberg, 1998). These models represent the two extremes between which there is a range of behaviors. Based on the concept of organizational openness of systems theory, this is determined by (Ansoff, 1978):

- Perception of strategic information describing futurity (trends).
- Perspective of the action that describes the familiarity of the actions of an organization, with regard to its past experiences.

The characteristic of the opening and the perspective of the action correspond in general to the perspective of the information:

- Managers of a retrograde nature prefer successful alternatives in the past and rely on known historical information.
- Managers whose attention is focused on the present are willing to disconnect from the past, provided that it is not very different from the present, that is, they seek to rely on pertinent information about the environment.
- Managers who seek to predict threats and opportunities tend to have an active attitude, in order to look for new paths, based on past information and using predictive models, bearing in mind that the future will be an extrapolation of the past.
- Managers who go beyond extrapolation from the past, in order to perceive new worlds and discontinuities, seek opportunities that are new and unusual, that is, they assume that the future is not an extrapolation of the past.
- Entrepreneurs are also the creators of deliberate actions. They seek markets that have never been explored, human needs that have never been met, their motto is: "invent the future".

The range of possible responses and behaviour are determined by the skills and capabilities of organisations. There are two factors that determine the training of managers:

- Competence (set of knowledge leading to strategic behavior).
- Capacity (strategic workload).

One of the main attributes is the approach to solving the strategic problem that comprises individual skills, personal knowledge along with group dynamics. The active method of solving the strategic problem seeks through systematic analysis the causes, with the use of analytical processes to identify all possible alternatives and to establish explicit and quantified relationships between the variables, being selected the best alternative ("optimal") (Ansoff, 1978).

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Another attribute of the training of managers is leadership in the definition and implementation of the strategy, requiring dexterity to capture and direct social energy. A fourth element of the manager's competence is information for support in decision-making, which presupposes the existence of a future-oriented strategic information surveillance process and which we can call the *manager's informationalskills*.

Information about future possibilities comes from the company's environment and performance capabilities, in industry and or the sector, which means that the company has access to information about its performance and that of its competitors. You also have access to information about what events and the strengths that determined the performance, as well as what capabilities and skills you have been able to develop over a given period.

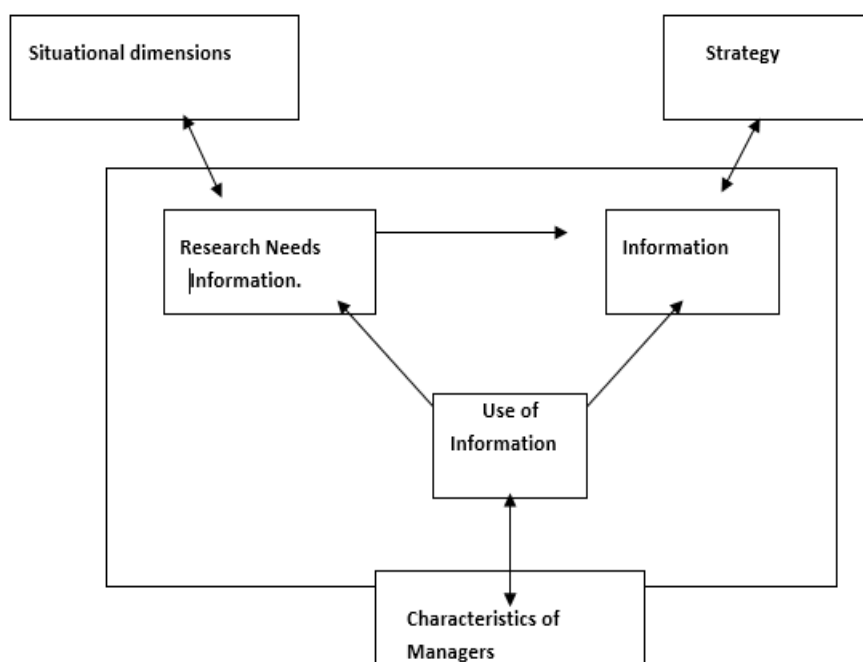
Strategic information is thus the relevant information that allows organizations to *perform better through the active* exploitation of the imperfections of information of the market and product actors (Truijens, 2001).

The Strategic Information Survey

The objective of observing the environment is the acquisition of information about events, trends and relationships between organizations and the environment, as well as the acquisition of knowledge to help managers define the future (Aguilar, 1967, Choo and Auster, 1993). The observation of the environment allows managers to identify the forces of change, in order to avoid surprises, identify threats and opportunities and acquire competitive advantages (Sutton, 1988). The dimension of adaptation or influence of the environment is dependent on knowledge and interpretation of information about the changes that are in progress, thus constituting the environment the first mode of organizational learning. The observation of the environment includes being attentive to the available information and weak and strong signals about trends.

The behavior is influenced by external factors, such as the turbulence of the environment, the dependence on resources, organizational actors, such as the nature of the business and the strategy adopted, informational factors, (availability and quality of information) and personal factors, such as knowledge or cognitive style. The study of situational dimensions, organizational strategies, information needs, and personal characteristics of behavior can be done.

Figure 3 - Strategic Information



Source: Adapted from: (Choo, C. W., 2002), *Environment Scanning as Information Seeking and Organizational Knowing* PrimaVera Working Paper 2002-01, University van Amsterdam.

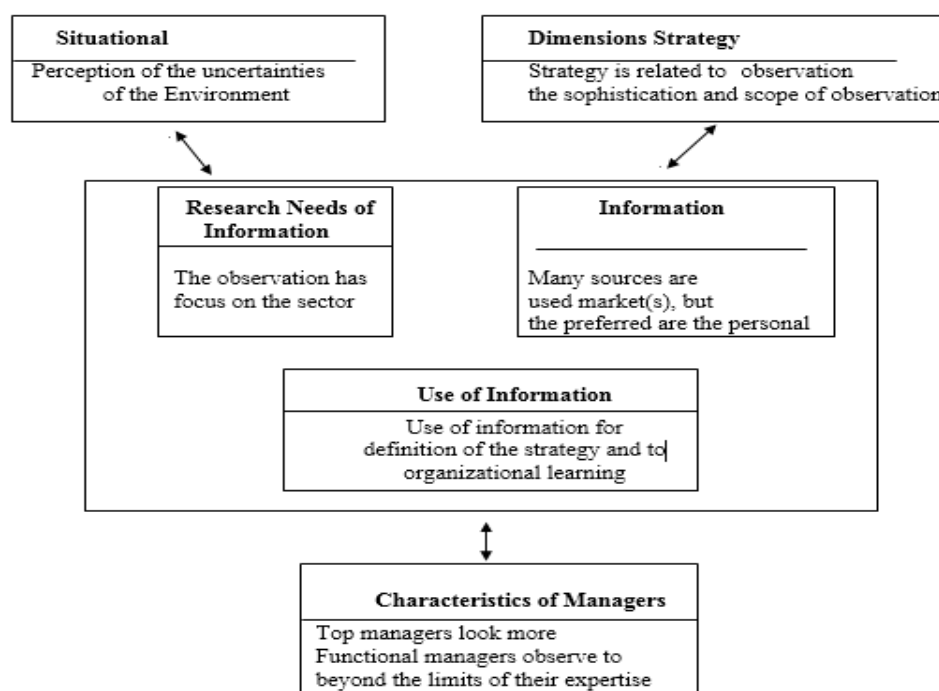
The situational dimensions are studied to measure the perception of uncertainty about the environment, a concept that is strictly related to the perception of the analysis of the environment of the research-interpretation-learning model. The organizational strategy refers to the positioning or attitude of the organization towards the environment ((Ansoff, 1965, Porter, 1980, Andrews, 1965, Grant, 1996, Prahalad and Hamel, 1990, Pfeffer and Salancik, 1978, Miles and Snow, 1978, Mintzberg et al, 1976, Grant, 1996, Daft and Weick, 1984).

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The characteristics of managers include specialties, level of hierarchy and cognitive style. Observation as a behavioral form comprises information needs, information research and the use of information. In the context of the observation of the environment, information needs are often restricted to the focus and scope of research, particularly sectors of the environment where research is most intensive. The information research is examined in terms of the sources that are used to observe the environment, as well as the organizational methods and systems adopted to observe it. Finally, the use of information is seen in support of strategic decision-making. What can be determined from a research that has been completed through the observation of the environment, as a learning model of organizational strategy? A summary may include the following observations (Choo, 2002):

- **Situational dimensions** - *the effect of perceiving the uncertainty of the surrounding environment.* Managers who understand the uncertainties of the surrounding environment will tend to research better. Uncertainties are indicated by the complexity, dynamism and importance of the sectors that understand the environment.
- **Strategy** - *the effect of the perception of uncertainties in the environment.* The organizational strategy is related to the sophistication and scope of observation activities. This should provide information to define strategic alternatives and the choice of optimal strategy.
- **Characteristics of managers** - *effects of managers' work and cognitive characteristics of observation.* Top managers seem to observe more than managers at the lower levels. Functional managers observe beyond the limits of their specialization.
- **Information needs** – *the focus of observation of the environment.* Many studies observe various contexts of the environment: customers, competitors, suppliers, technology, social, political, economic conditions. The focus of strategy-related observation is sector-related markets.
- **Sources of information** - *usual and preferred sources.* Although managers use many sources, they prefer personal formal sources, impersonal sources especially when researching information about the development of potential markets in the sector.
- **Information search** - *observation methods.* Organizations use a wide variety of methods, depending on their size, dependence and perception of the environment, experience in observation and the industry in which they are competing.
- **Use of information** - *strategy and organizational learning.* Information under observation is increasingly used in the definition of the strategy. Effective observation is related to the improvement of organizational learning and performance.

Figure 4 - Strategic Information



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Observation and Performance

How can the observation of the environment increase organizational performance? The factor of intelligent rationality that comprises the observation of the turbulence of the environment, organizational capacities and competences, control, communication, adaptability, analysis, integration and experience in the industry, are the most important actors of strategies successfully (Miller and Friesen, 1977).

The observation of the environment, capacities and competencies of organizations leads to greater economic and financial performance, when compared between organizations successfully and without success (Newgren et al, 1984, Dollinger, 1984, West, 1988, Daft et al, 1988, In: Choo, 2002). The benefits of observation are not only economic or financial, as they are a key element in the definition and implementation of organizational strategy. They enable organizations to act or react to the factors of change. In addition, observation contributes to increase communication between line managers and staff *managers, allowing the involvement* of all in the definition and implementation of the strategy (Murphy, 1987, Ptaszynski, 1989, In: Choo, 2002).

Information on trends in the environment (weak and strong signals) and on the capacities and competencies of organizations helps managers in defining and implementing organizational strategy. However, the practice of observation is not sufficient to ensure performance – observation should be aligned with the strategy and information (signals) should be effectively used in the strategy formulation process.

Despite its importance, our theoretical understanding of organizational surveillance remains limited. Although all forms of surveillance necessarily involve research and the use of information about the environment and the organizations' own capabilities, different organizations operating in different markets, it may be expected that they monitor differently. Aguilar (1967) identified four forms of surveillance based on his research field. Daft and Weick (1984) and Weick and Daft (1983) built from the work carried out by Aguilar a general model of information surveillance based on two dimensions:

- Can you analyze what's about to happen in the surroundings?
- Can you actively ingest an organization in the environment to collect information?

When developing the information surveillance model, two paths are possible: a first in which surveillance is an essential way for organizations to research information, through the identification of information needs, information to be researched and used as standard. The second where the main objective of surveillance is to acquire new knowledge (information feeds knowledge) that facilitate action, that is, to create knowledge to help strategic decision making.

The Analysis of the Environment

Each change in the surrounding environment goes through a natural evolution that progressively increases knowledge. At the early stage, it is possible to identify weak signs of the general state of change and the consequences of these signals are still subject to uncertainty, as the signals are based on conjecture and not performance. This means that as the escalation of change and complexity of the surrounding environment develops, knowledge (or decreases ignorance) increases, associated with all changes, whose dimension is explained through one or more information and whose content is taken into account in the elaboration of the alternatives of evolution.

Another factor who characterizes the new phenomena related to the evolution of the environment are the successive states of knowledge whose speed of evolution differs, becoming one of the useful measures of speed, the time that elapses until full impact on the organization, in each successive state of knowledge. Changes are increasingly coming from sources of information outside the historical boundaries of industry and it becomes increasingly difficult to recognise them and their implications. The predictability of the change of the environment has been steadily decreasing. The importance of predictability depends on the magnitude of the impact and the time it takes for the affected organization to respond to change. If the impact is small and the rapid response, predictability is of no importance.

However, the interstition of a signal of change with enough anticipation, which allows time to prepare for strategic decision-making, can be important when the change is sequential. If the change is quite new it requires additional time to gather the appropriate resources to change. In either case the response time is always a function of the knowledge that organizations must initiate their response. In the event that the change is known all information is available and the various components of the response can be predicted and executed in an efficient sequence. If the response is initiated in advance, possible alternative strategies will be limited by the available information. More and more managers are pressured to shorten the response time by rapidly analyzing and interpreting available information and signals (weak or strong).

Extrapolation prediction techniques and related decision-making methods become inadequate because they only work when the results of the answers can be quantified. The techniques of prediction by non-extrapolation (analysis of opportunities and threats) use new information (signals), but less complete (qualitative).

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For the changes that occur today, a timely response is only possible if the change is perceived before formulating the strategy, that is, allowing organizations to respond to the weak signals (information) produced by a change in the initial state of their development. The appropriate methods for the collection, selection, analysis and interpretation of information (signals) on the evolution of the environment, as well as the skills necessary to deal with this information reveal the state of knowledge that the organization has to initiate the response, in order to respond effectively to changes in the environment - *perception* of the need for strategic decision-making or the identification of opportunities (discovery phase).

Anticipatory learning enables organizations to prepare to tackle change processes by adjusting their skills and competences to the turbulence and complexity of the environment in order to reduce the impact. One of the key points for the effective formulation process of the strategy is, on the one hand, the use of a process of filtering strategic information on the environment and on the other hand, the establishment of a forward-looking vision of the set of challenges with which the organization will be confronted in the future, in order to enable the organization to anticipate development opportunities and transform threats into new opportunities (Prahalad and Hamel, 1994).

Early warning signs (information) become competitive advantages for the organisation that can "detect" them earlier, so it is important to adopt methods that help detect signs of change (weak or strong signals) and react to the first signals in order to improve their competitiveness. The filtering of strategic information focuses on the set of economic, technological, sociocultural, political-legal, environmental and other changes that affect the global and immediate environment of the organization (competitors, customers, suppliers, substitute products and others). The sources of information are two: the environment characterized by the level of turbulence and complexity and the organizations themselves. Companies that do not record information about their performance (past), nor are they attentive to the evolution of the environment, typically place themselves in a point of satisfaction, the threshold of which is a crisis. They simply face day-to-day problems and managers have no shared expectations about the future.

Companies that record historical information but are not aware of the evolution of the environment, have a sense of history, thanks to records of historical information about past performance or the memory shared by managers. There is a third set of companies that are aware of both history and the future environment and that record information about the various events and transactions of the past. Information can be obtained through informal contact with the environment, to sophisticated systems that seek to identify significant signals, in addition to the immediate perceptions of managers.

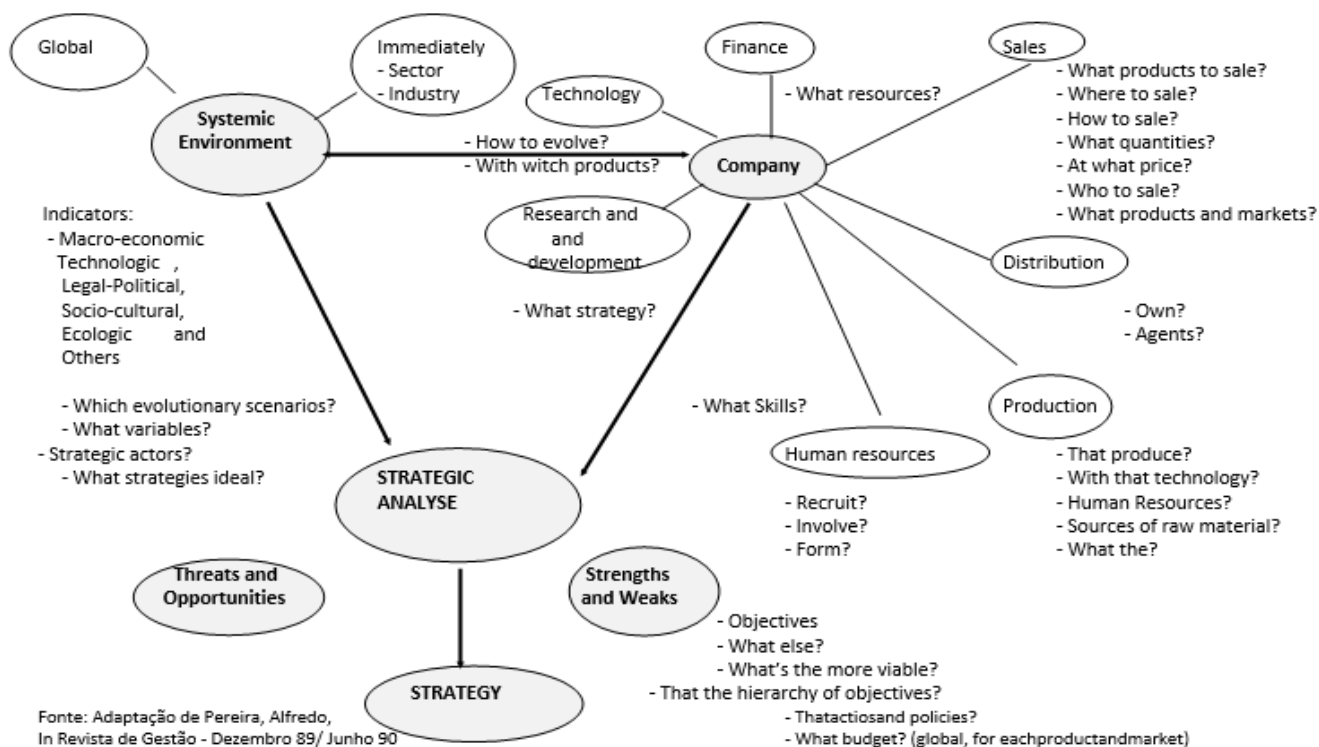
Typically, only part of the available information is collected, analyzed and handled by companies, as it is filtered through the thorough analysis filters (investigation). Organizations that do not have any formal information system to support strategic decision-making, filters are the personal limitations of the dexterity of "analysts" and /managers, in order to observe, analyze and interpret the information. In case there are formal systems, the characteristics of the filter are determined by the system support technology.

If the ability of managers or "analysts" to be more limited or narrower than the target of turbulence and the complexity of the environment, the research filter excludes important opportunities. As a result the vision of external reality will be incomplete and inaccurate. If the organization does not have a process of surveillance of strategic information, it will go directly to the decision-taker, who will interpret it and analyze it thoroughly. The decision-makers will use the information to form their own personal expectations about the possible future of the company. By doing so, he judges the validity and reliability of the researched information and thus submits it to the perception filter. The limits of this filter are established by the personal strategic culture, personality and previous experiences of managers. The cultural filter determines the richness of the information used by managers in strategic decision making.

The perception of the changes of the environment uses both historical information and the conversion of signals found into information and knowledge of potential future demand. This provides a more reliable basis for predictable performance than a direct extrapolation of the past (Prahalad and Hamel, 1994). If the process of filtering strategic information is not adequate to address the full extent of the changes, you will not be able to perceive all the wealth (potential) (Ansoff, 1978, pp. 140-144).

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Figure n.5 - Strategic Analysis



The input information before reaching the decision-taker is subject to three filters, the thorough analysis of future opportunities, the filter of the perception of the surrounding environment and the filter of the performance forecast, which can be agglutinated into a single that we will call filter of the management capabilities, which we call M., this will be filtered again by the manager's perception filter, which we will call K. If $M = K$ then the manager is very satisfied with the forecast, by confirming his beliefs and prejudices, even if it is totally devoid of reality. If $K > M$ considers the forecast too simplistic and restrictive and will look for ways to enrich it. If $K < M$ considers the forecast to be unrealistic and will seek to make predictions closer to its past experiences and perceptions.

However, organizations differ in the process of filtering strategic information, depending on the credibility of managers in the analysis of the environment and in the ability to understand it. Organizations that believe it is possible to analyze the environment and quantify the events and processes that are determinant, seek to discover the "correct" interpretation through the acquisition and analysis of information in a systematic way. On the contrary, managers who understand that the environment cannot be analyzed in a quantified way, create or believe that it is reasonable to interpret the signs that can explain past behavior and suggest future actions (Daft and Weick, 1984).

The differences in the perception of the analysis of the environment are due to the characteristics of the environment, combined with the experience of interpretation of managers. The analysis is related to the perception of the concept of uncertainty. The perception of uncertainty is a variable that assing the totality of the perception of change and the complexity of the environment (Daft and Weick, 1984). There are two dimensions of the environment that can determine the perception of uncertainty (Duncan, 1972):

- **The simple dimension** – the number of factors in the surrounding environment considered in strategic decision-making.
- **The dynamic dimension** – the degree and frequency of change of the factorsdetermining the environment.

Managers in surrounding environments that are dynamic, and complex acquire greater experience in the perception of the uncertainty of the environment, although the perception of uncertainty is determined by the perception of complexity (number of factors, opacity of casual relationships) and the perception of the dynamics of the environment (frequency of change). The combined effect of a large number of factors andactors, unclear relationships between causes and effects and the rapid frequency of changes leads to the perception that the environment is difficult toanalyze. Managers with greater experience in the analysis of the environment tend to make greater vigilance (Choo, 2002).

In addition to the uncertainty of the environment, the level of knowledge and information available about it is also animportant

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factor. Some industries collect and analyze information about products, markets and competitors. The information that is available and that is sufficiently detailed and timely for decision making can lead to the perception that the surrounding environment is reviewable. Organizations with active behavior in relation to the environment allocate substantial resources in the collection of information and signals (strong and weak), test and manipulate the environment. Those who have a reactive behavior, consider the information about the available environment and try to interpret it with the information they have.

The difference between organizations actively seeking new opportunities and others lies in the degree of conflict between the organization and the environment. When the environment is seen as more hostile or threatening or when organizations are more dependent on it, they allocate more resources in their surveillance. The hostility of the environment increases surveillance due to the need to identify new problems and new opportunities. On the other hand, organizations in less hostile environments have few incentives to behave actively in the search for new opportunities (Wilensky, 1967, Daft and Weick, 1984), which is in accordance with the theory of resource dependence (Pfeffer and Salancik, 1978).

In resource dependency theory, the environment is seen as a resource of the resources on which organizations depend. Resource dependency is affected by the abundance of resources, the concentration of power and authority, and the degree of relationship between industry organizations. The degree of dependency will be higher when resources are scarce and or when there is a large concentration in the industry. An organization can define its strategy from the outside in by adapting to the environment (e.g. diversification, niche market, price leadership) or it can define it from the inside out so as to influence that same environment (e.g. new products and markets), depending on its resources (Ansoff, 1965, Porter, 1980, Andrews, 1965, Grant, 1999, Prahalad and Hamel, 1990, Pfeffer and Salancik, 1978, Miles and Snow, 1978).

Surveillance of the Environment

Depending on the belief or not of managers that the environment may or may not be analyzed and understood, four modes of surveillance and research of information can be identified:

- **Non-targeted** – when managers have a reactive behavior. Information needs are poorly defined and much is formal and obtained through past changes, i.e. managers are limited to available and quantified information. Managers are accommodated and opportunities appear casually and opportunistically, do not seek them. They rely more on personal and irregular contacts. The information used to support strategic decision-making is related to the reduction of the high levels of misunderstandings in the environment (Weick, 1979, Miles and Snow, 1978, Cyert and March, 1992).
- **Conditioned** – this situation occurs when managers understand that the environment can be analyzed but are passive in obtaining information about it. Information collection needs focus on a small number of relatively well-defined questions or research areas. The information used is mainly historical, such as information officially published about the industry and the performance of the organization's resources. This view is conditioned in the sense that it is limited by historical information quantified over the years (Daft and Weick, 1984, p. 289).

It is assumed that the surrounding environment can be known, there is less needed to reduce uncertainty, through the establishment of norms and rules that allow the construction of a plausible interpretation. Managers tend to adopt defensive strategies by concentrating on internal efficiency to protect their positioning (Miles and Snow, 1978, March and Simon, 1993, Cristensen, 1997).

- **Innovative** – this situation occurs when managers realize that it is difficult to analyze the environment, but that they have a proactive attitude, that is, they seek to influence it. Information needs are those required by experimentation and testing of the environment. This involves identifying potential markets. The information sought comes mainly from external sources and channels that managers create to get feedback on the actions they have taken. They acquire information through trials of new behaviors of potential customers, experience, test, stimulate and ignore traditional expectations, that is, organizations create their own future (Prahalad, 1995, Grant, 1998, Daft and Weick, 1984).

The information is used to reduce uncertainty about the environment, through tests and simulations of products and or services, so that managers take innovative strategies, through the introduction of new products and or services in the market and thus acquire competitive advantages. The decision-making process tends to be phased and incremental, involving creative and experimental cycles (Mintzberg et al, 1976, Miles and Snow, 1978, Prahalad, 1995, Grant, 1998, Daft and Weick, 1984).

- **Active** – this situation occurs when managers realize that the environment can be analyzed and have a determined attitude in the collection of information about the environment. The need for information is based on well-defined objectives, but which are vague and open. Organizations are prepared to be surprised by new relevant information

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needs. The information researched is formal, quantitative and typically resulting from market studies, institutions or credible experts that are objective and rigorous.

Organizations have formal structures that systematically analyze information, simulate and analyze trends, and issue intelligent *reports*. Organizations tend to adopt positioning strategies, based on the analysis of the environment performed by "analysts". Decision-making follows a formal, rational and logical process and often uses quantitative techniques (Andrews, 1965, Ansoff, 1965, Porter, 1980).

Organizational Knowledge

To understand how managers use information from, and about the environment, in supporting strategic decision-making and learning, it is necessary to look at the environment in terms of information needs, research and use, that is, in terms of insight, knowledge creation and strategic decision-making process.

- **Insight – is induced** by changes in the environment that create discontinuities in the experience flows of people and the activities of organizations. These discontinuities are the signs (weak and strong) that have to make sense. Organizations then create the market(s) through the experience and innovation of new products (Weick, 1979, 1995).

The recipe for insight is the interpretation of the environment through the sequence of innovation, selection and retention. In innovation people create the market in which they want to compete, based on their experience in interpreting market signals. In the selection people choose from the possible interpretations those that are closest to their experience. In retention, organizations successfully store product knowledge based on interpretation of market signals and accumulate experience for future situations (Weick, 2000).

Organizational acumen can be guided by the belief of managers or actions. In the process of guided belief, people start from an initial state of belief that is sufficiently clear and plausible and is used as a node to acquire more and more information within meaningful structures. People can use beliefs as expectations to guide the choice of plausible interpretations or to argue about their beliefs and relevance when these beliefs conflict with current information. In the process of guided action, people initiate actions and grow in their knowledge structures, through the modification of structures, in order to give meaning to actions. People can create meaning to justify the actions they trust or can create meaning to explain actions they have previously taken.

- **Knowledge Creation** – Organizations have three types of knowledge: tacit, explicit and cultural.
 - ✓ **Tacit knowledge** is personal knowledge, used by members of organizations to perform their work. It is the object of learning through the experience of the work done, during which they develop skills and abilities to make judgments about the success or not of the activities.

Tacit knowledge is experimental and contextualized and cannot be easily codified, written or reduced to rules and recipes. This knowledge is vital for organizations because it is an important source of new knowledge, discoveries and innovations that are the result of individual creation, applying their knowledge and intuition to face problems.

- ✓ **Explicit knowledge** is knowledge that is formally expressed using a symbol system and can be easily communicated or disseminated. This knowledge can be based on objects or standards. Knowledge is based on objects when it is represented using a set of symbols (e.g. documents) or is embedded in physical entities (e.g. equipment, substances).

Knowledge is standards-based when it is used, is encoded in standards, routines, or operating procedures. Explicit knowledge codified as an intellectual asset is available to organizations because it helps the observation of organizations and the storage of knowledge and is acquired mainly through information almost always through formal education (Choo, 2002, Silva, 2003).

- ✓ **Cultural knowledge** consists of the traditional beliefs and values of organizations and is based on experience, observation and reflection about the environment. In addition, organizations develop the sharing of beliefs and values, about the nature of their core businesses, capabilities, markets, competitors and others. These beliefs and values form the criterion for the selection of alternatives, new ideas and to evaluate projects and proposals.

In this sense, organizations use cultural knowledge to answer questions such as, "what kind of organization are we?", "what knowledge will be valuable to the organization?", "what knowledge is worth pursuing?" Cultural knowledge includes the assumption, beliefs and values that are used to describe and explain reality, as well as the criteria and expectations that are used to give value and meaning to new information (signs). Organizations create knowledge through people; tacit knowledge develops creative acumen and sharing; explicit knowledge develops new products and innovations (Nonaka and Takeuchi, 1995).

Tacit knowledge is shared and outsourced through dialogue that is used in metaphors and analogies. New concepts are created, the concepts are justified and evaluated according to organizational intentions. The concepts are tested and used in prototyping.

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The concepts that have been created, justified, and modeled are transferred to the other levels of organizations to generate new creative knowledge cycles.

The Quality of Strategic Information

The strategy is concerned with tuning on the one hand of what is dentro of organizations and on the other the other what is outside them. The quality of this tuning is limited by **the quality of the strategic** information with which it is fed, so the mainfunction of strategists is the "*probing*" of the environment in order to detect the changes, analyze them and interpret them, in terms of the performance potential available to the organization (opportunities). This constitutes a complex process, based on information and or signals (weak and strong) bothobjective and subjective. The result is the objective perception of the reality of the environment, a set of beliefs (performance expectations) about what will happen, that is, the performance that managers believe is possible to achieve (Ansoff, 1990).

There are two sources **of strategic** information that contribute to expectations. A source is internal information on the capacities and competencies (often called strengths and weaknesses) to address aspects not characterized by the perception of the future environment, that is, to allow:

- the transformation of industry and/or the sector.
- Increase results through new niches beyond market share.
- To provide the organization of **a Strategic Architecture** - to dream about what it can do with knowledge and with known resources.
- To conceive the strategy as an overtaking, rather than an adaptation of ambitions to the environment.
- Gain progress on competitors, in the dissemination and marketing of products.
- Aim at leadership in key business skills.

The second source is the surrounding environment that provides information (weak and strong signals) about change and complexity. When the changes are significant it is "important to be informed about the enemy and the battle site, which allows to obtain advantages of the first who moves, that is, the one who occupies the battlefield first and waits for his enemy is at ease; who then arrives at the scene and rushes to fight is tired" (Sun Tzu, 1971). This source of information allows the organization to search to shape the future; however, intentions can be frustrated by chance and ignorance (Clausewitz, C., 1989).

In small organizations the process is informal, the manager observes, estimates and judges at the same time and does not clarify the sequence and interaction between the various elements. The main element is the **strategic culture** of the manager, which determines both the temporal perspective in which he perceives the environment, as well as the alternatives he accepts as credible. Culture acts as a receptive lens or filter, which, in turn, establishes the premises of the decisions of managers (Snodgrass, 1984).

If the temporal perspective coincides with the time horizon required by the speed of change and the complexity of the environment, it means that the manager's perspective is in tune with the turbulence of the environment. If the manager's temporal perspective is less than the speed of change, we have a short-sighted perspective, otherwise we have a foresight. A myopic perspective is the result of the poor quality of strategic information and the manager will have inaccurate performance expectations. The advantage of a foresight perception allows the manager to perceive the trends of the turbulence of the surrounding environment and thus avoid surprises, predict and react to threats and opportunities (Ansoff, 1990).

There are other factors besides culture that contribute to the inaccuracy of informally formulated expectations, such as the limited power of observation of the environment, the limitations of the organization, knowledge and the experience of managers. In stable and reactive environments, intuition and experience are useful, but they become inadequate in environments characterized by anticipation and exploration/creation.

The monitoring of strategic information (collection, selection, treatment and analysis) can be carried out by specialized technical teams that then submit to decision-makers the alternatives for strategic decision-making and or by the managers themselves. The formal process is explicit and sequential. The perceptions are elaborated by the technical teams and or by the managers, and then converted into visions by the managers.

The formal forecast is subject to the same limitations inherent to the informal process, that is, it is limited by the filter of the prediction of the methodology used to make the predictions. In stable competence, experience is based and no "probing" or formal forecasting takes place. Reactive competence formally extrapolates past performance. The competence characterized by anticipation incorporates the extrapolation of formal performance (Ansoff, 1978).

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These approaches assume that the future will tend to be a natural extension of the past and are unable to perceive significant changes as well as possible discontinuities. The competencies characterized by inquiry and creation use techniques that predict probable deviations from the past. However, they capture some information about the potential future.

Thus the technology used for prevention puts a filter between decision makers and the environment. A myopic filter that is narrower than the turbulence and complexity of the environment will present inaccurate information to the manager. A tuned filter will adequately reflect the surrounding environment as long as the turbulence level is stable. A foresight filter will make a prediction of changes in turbulence (Ansoff, 1978). The filter for tuning into the environment is used through the cultural perspective of decision-makers. If the filter of cultural perception is narrower than the forecast filter, the manager will further restrict the perception of the future environment, rejecting as inaccurate or irrelevant information that is inconsistent with your experience.

The accuracy of an organization's performance expectations is limited either by the forecast filter or perception filter, depending on which of the two is the narrowest. When the narrower filter excludes important environment trends and likely events, performance expectations will be inaccurate, regardless of computational refinement and prediction methodology. Knowledge and awareness of expectations whatever their quality is restricted to a small number of participants who are best informed about the environment and or about the distinctive capacities and competences of organizations. Usually, the most numerous group of managers who deal with internal operations, they have little concern about what will happen to the organization, so they have little knowledge of what their future will be.

Opportunities to communicate important strategic information to managers are considerably greater in large organizations than in small and medium-sized organizations. However there are some limitations. One is the limitation of forecasting systems, which slows organizational awareness with regard to the main changes in the environment. Another is the limitation of information to "strong signals", which deprives the organization of timely warning of rapidly developing changes (weak signals).

Strategic Decision-Making

The Problems of Strategic Decision Making

The fact that all organizations are a whole coherent and whose dynamism depends on the people who work in it, that is, they make decisions to solve problems, clearly shows the relationship that exists between the concepts of decision and system. This means that the science of organizations is based on two theoretical foundations: decision theory and systems theory. However, most of the theorization in the field of strategic management developed from the notion of the act of decision or from an open system.

The decision-making model of the company's economic theory, with the linear concept of input-transformation-output, has always used a mechanical model in which inputs are inputs and outputs are products and or services. This model is a far away from what you might call an open system model. This is more exactly a circular model. Linearity combined with efficiency, that is, maximizing profit as a goal will be the limit. The decision-making model is too rational and cognitive, to the extent that a person or at best a homogeneous decision-making group can make strategic decisions. The decision model is strongly linked to the rational manager(s) who knows everything even when the act of deciding is considered sophisticated and poorly structured. The decision-making model points to the manager(s) who makes decisions, but at the expense of excessive simplification of the organizational model.

The market structure, or in other words, of the global environment (affects all or almost all organisations of any industry) and immediate (affects only the industry or the sector where the organisation is inserted) is too important for the survival and autonomy of organisations, that is, not to lose the relative freedom and flexibility to react appropriately to the needs of society. The clear separation between organisation and the environment, which fits this environment or maintains a superior position, through its capabilities and competences, gives us clues about the role and place that organizations should occupy in society and how they should be managed, in order to perform their function properly. However, there is another dilemma that is the exercise of power, that is, the generation of changes and the acceptance of influence, that is, the absorption of change. It is an approach to strategic decision-making type inside-out or out-in.

There are some models of strategic analysis that start from the analysis of the environment for the adaptation of the organization to that same medium, that is, from the outside in, that is, the chosen strategic alternative adapts to the change and trends of the environment (e.g. Andrews, 1965, Ansoff, 1965, Porter, 1980). These models assume that the "*organizational structure follows the strategy*", which means that the internal structure of an organization is dictated mainly by the strategy and that the priorities are redirected in the sense that the formulation of the strategy is the most important task of management, which allows the organization:

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- From the situation of the surrounding environment as it is, to decisions that are in fact based on the analysis and subjective interpretation of this situation.
- Keep alive the institutionalization of values, in order to generate a certain consensus on what to do.
- Select beforehand the part of the potential environment (segmentation that is important now) (Porter, 1980).
- Differentiate the internal system, so as to approach stability by constructing different types of boundaries between subsystems.
- Flexibility in switching from one strategy to another.

Other models start from the analysis of the capacities and competencies of internal resources to define the strategic alternative most appropriate to existing resources, that is, they start from the interior to the outside, in order to influence the structure of the industry, that is, they seek to build their own future (e.g., Barney, 1987, Robert Grant, 1987, Gary Hamel and Prahalad, 1995, Mintzberg, 1976). Managers need relevant information but are often victims of the abundance of irrelevant information generated by the macroeconomic system and organizations and the consequent inadequacy and inadequacy of the information necessary for strategic decision-making (Ackoff, 1967, Smith, 1978). The more information the human brain tries to receive, the less information it actually receives (Driver and Streufert, 1969).

In this context, managers are currently struggling with serious information problems, as it is dispersed throughout the organization and requires a great deal of effort to locate and integrate it. Important information is sometimes retained exclusively by other managers and usually arrives late and other times unreliable. The power to make decisions does not give anyone, neither the information nor the cognitive capacity necessary for decision making. The decision-making process consists of a series of steps: the selective collection of information to pass on to the decision-taker, the processing of information to advise the decision-taker, the exercise of choice (strategic alternatives), i.e. determining what should be done (making the strategic decision), the authorization to do what was chosen and finally the implementation of what has been decided and authorised (implementation of the strategy) , (Paterson, 1969, Pettigrew, 1972, Cyert and March, 1963).

The power related to the decision-making process tends to remain at the level at which the necessary information can be accumulated effectively at the various levels of management. Regardless of the internal configuration model, top managers always retain decision-making power related to strategic management (Lawrence and Lorsch, 1967). There are multiple actors, both internal and external to organizations that significantly influence decision-making. This situation obliges top managers to constantly analyze these factors in order to achieve the desired objectives. To achieve the desired balance, one of the actions that managers practice with the proper attendance, is strategic decision-making.

This action requires a process of reasoning, through which, from the development of changes in the environment, information is collected in a selective way that allows to clarify its characteristics, both endogenous and exogenous and its impact on the organization and that allows to make the most appropriate strategic decision. The collection of information and its treatment do not present great difficulty. On the internal situation organizations now have information systems for management, whose usefulness for operational management and coordination has already been largely demonstrated, although for the level of top management is only applicable in some cases.

The final product of strategic decisions is simply misleading, to the extent that choosing a combination of products and markets is achieved by adding new products and markets, abandoning old products and markets and expanding the current position. The change requires a redistribution of the company's resources – a pattern of disinvestment and investment in the acquisition activities of other companies, in the development of new products, distribution channels, advertising, etc.

Solving any decision-making problem requires an insight into the need for decision or opportunity (discovery), the formulation of alternatives for action, the evaluation of these alternatives in terms of their contributions and the choice of one or more alternatives for implementation purposes. The perception of needs is an important aspect of strategic decision-making, since it is a method that allows the choice between a continued concern with the operational problem and some attention to the strategic problem, leaving a fundamental part of intuition and subjective judgments. A method is needed to create conditions for a permanent research and diagnostic activity of the need for strategic decision-making.

The search for alternatives is an iterative process that covers the company's traditional products and markets, the research and development projects already in place and a list of companies interested in a merger. Other alternatives may include market opportunities and joint ventures with other organizations. The conditions of partial ignorance raise two problems: one leads the company in an active search for attractive opportunities and the other is the allocation of the company's limited resources between the opportunities that have been identified and those that are about to emerge. The evaluation uses long-term

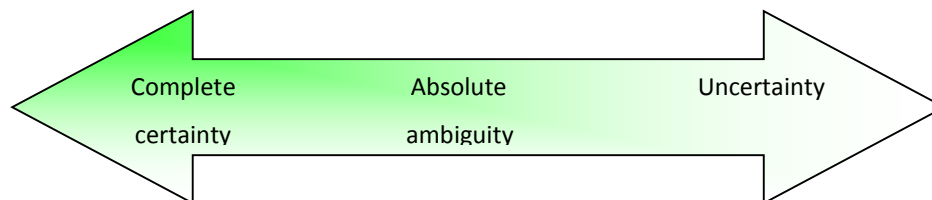
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profitability as an evaluation standard. However, there are some difficulties in making projections regarding the company's position in terms of products and markets.

The Decision-Making Process

Strategic decision-making is a process of choosing between alternative opportunities (Ansoff 1965, Porter 1980, Andrews 1965, Mintzberg 1990, Grant 1991). The key to decision-making is the recognition of the nature of the opportunity(s), the identification of what information is available and the recognition of what information is needed, i.e. the interval between complete certainty and absolute ambiguity (Zikmund, 2000).

Figure 6 - Decision-Making Process



Source: adapted from Zikmund, William G. (2000), *Business Research Methods*, sixth Edition, Fryden Press

Complete certainty means that the decision-taker has all the information he needs for support in strategic decision making. However, perfect certainty about the future is exceedingly difficult. Uncertainty means that the information that managers have about the future is incomplete, so they cling to the nature of the objectives they seek to achieve (Zikmund, 2000). Under the uncertain conditions, managers recognize the potential amount spent in additional time to collect relevant (strategic) information to clarify the nature of decision making. Ambiguity means that the nature of decision-making is unclear. The objectives are vague and the alternatives are difficult to identify, making it difficult for managers to make strategic decisions (Zikmund, 2000). "The secret of the business is to know something that no one else knows" (Aristotle Onassis, in: Zikmund, 2000)

The Treatment of Strategic Decision-Making Problems

The main research models in this area offer us frankly remarkable perspectives. However, there is a general lack of essential deepening and practical implementation in some respects, including information for strategic decision-making. One of the models focuses on the causes that give rise to problems and focuses primarily on one of the most transcendent aspects of poorly structured problems: the inquiry of the source from which the phenomenon emanates (Malhotra, 1975, in: Manuel Selva Dominguez, 1993). Framed in the heuristic methodology, however, when it does not analyse the possibility of discrepancy between the actual problem and that observed, nor the genesis of it, Simon's (1982) has the advantage of providing the application of simple methods and therefore its treatment by computer. The same line that follows Brightman (1978, in: Manuel Selva Dominguez, 1993) with its circular model, susceptible to retroactiveness and usefulness, in unstructured strategic problems. Lacking in the holistic perspective, substantial for the correct management of the issues that occupy managers, the architect of transformations (Taylor, 1974, in: Manuel Selva Dominguez, 1993) focuses on the aspect concerning the need for information. Despite the search for the transformation he proposed to convert them into manipulateable, he deprives him of the necessary systemic perspective and may induce him to make the mistake of an incorrect diagnosis. The holistic perspective represents one of the most complete models, despite the consideration that makes the phenomenology of poorly structured problems and the way of treating them, forgetting the way of generating and presenting information (Barte, 1973, in: Manuel Selva Dominguez, 1993). The planning model advocates the alteration or division of the problem to an operational level that allows its manipulation (Van de Ven, 1971 and 1980, in: Manuel Selva Dominguez, 1993).

Very complete in its planning the prototype of (Mintzberg, Raisinghani and Théorêt, 1976, in: Manuel Selva Dominguez, 1993) highlights the aspects as significant as the presence of distinct perceptions, before the same phenomenon, on the part of those who contemplate it, the need to consider the presence of various subjects and institutions with a clear impact on the resolution process, as well as the accuracy of information that allows to achieve the objective knowledge of the problem, focusing, however, on the design.

In the model of (Ulrich, 1977, 1980, 1984, in: Manuel Selva Dominguez, 1993) important aspects such as the presence of the value system and its relationship with the expression of the decision-making company's will, as well as how to produce and present the information, are available. Such models do not indicate either an indispensable methodology or what is the information for the treatment of poorly structured phenomena. The definition of a problem requires as a step prior to its understanding. When the

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strategist is faced with structured problems, decision-making becomes easier. The construction of a model encompasses the following phases: Formulating the problem; Build a model; Get a solution; Evaluate the solution; Implement the solution.

When the situation is a structured problem, that is, there is already information and knowledge, the formulation of it is accompanied by the corresponding description of the objectives that are pursued. The same is not the case with poorly structured problems (lack of information or incomplete information), which, when it is not known clearly, what are the objectives to be achieved, these are expressed inaccurately, and the formulation of the problem is based on a series of assumptions. Their understanding of the information about them and implies having a clear idea of the objective pursued and this is unclear.

Often the component variables of the strategic problem (information and or signals) are not known or expressed in vague ideas or are difficult to quantify. This often leads to the strategist being forced to decide on the basis of assumptions that may be of greater or lesser importance. In scientific terms it means that the decision-makers focused more on theory than on practice. In poorly structured phenomena (lack of information or incomplete information) there are at least three questions that are ignored: the very definition of the problem, the moment when a solution is reached and whether the solution is correct. As for the definition of the problem as we investigate new aspects of the problem, new aspects of the problem arise, and related changes are produced that had been established as correct. The solution that emanates from the analysis is not known if it translates reality and it is unknown whether or not it really is correct (strategy) (Simon y Newell, 1958, J. A. Nelson, 1973).

In the context of decision theory, decision-making consists of four phases: intelligence, drawing, election and revision (Simon y Newell, 1958, J. A. Nelson, 1973). Intelligence focuses on analyzing the situation (internal and external) to identify opportunities and threats that give rise to decisions. The design aims at the research, development and study of strategic alternatives that can be generated and are likely to become a reality. The object of the election is to determine which of the alternatives will become reality (implement the strategy). The review pursues control of the (strategic) decisions that have been implemented.

Strategic Decision-Making

Although it has been recognized for a long time that many strategic decision-making is made with incomplete information, the tendency is to give more weight to information of an internal nature and about competitors, than to information about the environment, which can often lead managers' preferences in strategic decision making (Slovic and MacPhillamy 1974).

The decision-making of managers considers only the variables that are less susceptible to influence, due to lack of information. Decision with a lack of information can have an immediate and or medium and long-term impact. In decision-making, managers and/or clients rarely have all the information (Dick, Chakravarti, and Biehal 1990; Johnson and Levin 1985; Ross and Creyer 1992; Simmons and Lynch 1991). However, when complete information is available for all alternatives, it is possible to make changes between variables and it is much easier to make the decision. The most common problem is that managers do not have the complete information of all variables. Although the importance of this problem has long been recognized, we still know very little about decision-making under incomplete information (Slovic and MacPhillamy 1974).

Strategic decision-making under incomplete information has important practical implications. Managers today have greater control over the information they provide or not to customers and how that information is presented. For example, comparing traditional distribution channels, those using *the Internet or the catalog*, managers have much more control over the information to be made available on the Website (complete or incomplete). Given the abundance of information available, managers can "design" the information they consider to be the most attractive for strategic decision making. Incomplete information can often lead to the preference of inappropriate alternatives, although the effect may not be easily observed, since managers currently choose one of several alternatives. Lack of information can have a systemic effect on comparative judgments (Slovic and MacPhillamy, 1974).

The strategic decision is based on scientific principles and is situated between the right commitment and the uncertain. The strategic decision-making process absorbs decision-making time. The effectiveness of the strategic decision is intrinsically based on the use of the highest level of conceptual knowledge, the actions that are deduced fall into the limited field of the capacity of those who have the responsibility to implement them, i.e. decision-making has its own systematic process and its elements clearly defined. From a historical perspective, the relationships between the company ecosystem, its strategy and organizational structure gave rise to the development of the company theory from the point of view of the decision-taker (Chandler, 1962, Sloan, 1964, Cyert and March, 1970). Regardless of differences in point of view and concepts, they complement each other, as each one is concerned with a different aspect of the overall **problem of decision-making**.

Rational decision-making requires the acquisition of information and the processing of information, in addition to the capacities of organizations. In practice, organizational decision-making is based on a rational idea and depends on:

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- Clarity of the organization's objectives that meet preferences and choices (ambiguity of objectives or conflict).
- Uncertainty or amount of information about the methods and processes by which the objectives are defined (techniques or procedural uncertainty).

We can consider four modes of decision-making: rational, political, procedural and anarchic. In the rational way, when the objectives and procedures are clear, the choice is guided by the performance of the programs (March and Simon, 1993). Decision-makers simplify their representations of the strategic problem, satisfy more than maximize information research and follow routine action programmes or procedures (Andrews, 1965, Ansoff, 1965, Porter, 1980)

In the procedural mode, when the strategic objectives are clear, but the methods to achieve them are not, decision-makers divide the process into three phases: identification that recognizes information needs for decision-making and develops an understanding of decision issues. The development phase activates information research and develops one or more strategic alternatives. The selection phase evaluates the alternatives and chooses the most appropriate alternative to be implemented. This process is highly dynamic with many internal and external actors interrupting and changing the time and direction of the decision-making process (Mintzberg, Raisinghani and Théorét, 1976).

In the political mode the objectives are contested by individual or group interests, but the procedural sequence comes out of the groups: each group believes that their preferred alternative is the best for the organization. Decision-making and actions are then the result of negotiating power between groups, in pursuing their interests and manipulating the assessment of instruments of influence (Allison and Zelikow, 1999). In anarchic mode, when the objectives and procedures are highly uncertain, decision-making consists of very varied forms, number of participants in decision making, choice of opportunities identified and abandoned. Decision-making happens when the choice and the participants coincide, have interest, time and energy to do so (Cohen, March and Olsen, 1972).

Organizational Knowledge

Organizational knowledge is the result of insight, knowledge creation and joint decision-making to enable the organization to learn and adapt (Choo, 1998). Through insight, members of organizations establish and negotiate beliefs and values, as well as interpretations to build and share common meaning and goals. The sharing of meanings and proposals are the result of insight and are the starting point for explaining reality and determining overhang and appropriation. The sharing of meanings and the proposal help to articulate the sharing of the organizational agenda and define the organizational collective identity.

Organizations explore their expertise and develop new capabilities to transform their vision and objectives. Transformation can be blocked by gaps of knowledge needed to bridge meaning and action. When organizations detect gaps in existing knowledge or limitations in their capabilities, they initiate knowledge creation and research, within parameters derived from the interpretation of the objectives of organizations. The members of organizations individually or collectively build new knowledge that they share and synthesize in their tacit and explicit knowledge, as well as the transversal knowledge of people outside the organization, groups and institutions.

The sharing of meanings and proposals, as well as new knowledge and capabilities converge in decision making, such as leadership activity to select and initiate action. The sharing of meanings and identity selects the premises, norms and routines of the decision-making structure. New knowledge and new capabilities make possible new explanations and alternatives, expanding the range of organizational responsibilities. By structuring the behavior of choice through norms and documents, norms and routines, the organization simplifies the decision-making process, codifies and transmits past learning and proclaims competence and responsibility.

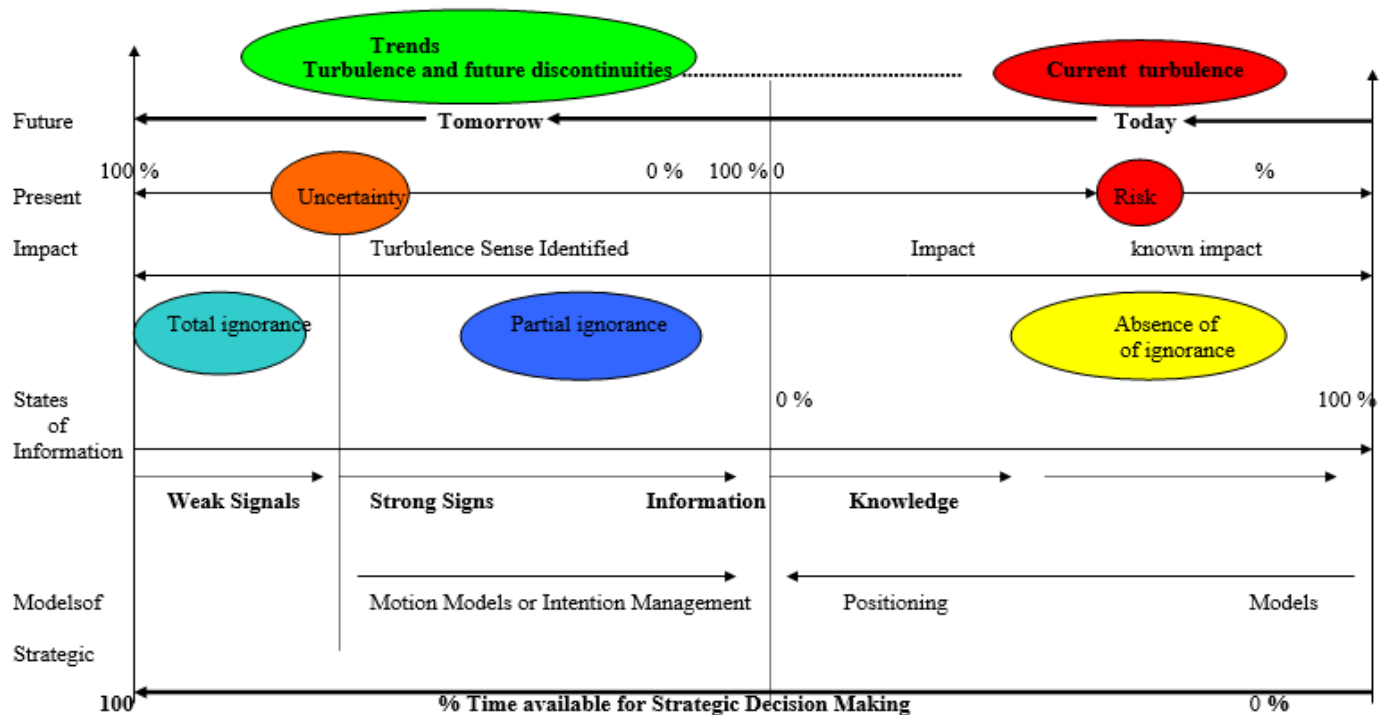
While each organization adjusts its behavior to perceive the changes in the environment, its responses are separated and diverted by the current actions of other "actors" participating in the same market. So each organization reacts to the actions of other organizations that are also reacting. A continuous rush of new events that require the repetition of the cycles of insight and decision making. In this sense the organization learns and adapts in a timely manner.

The Observation of the Environment as Organizational Knowledge

The concept of organizational knowledge can be examined through insight, knowledge creation and decision-making, each mode of observation of the surrounding environment (see figure number 7).

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Figure 7 - Model of Operationalization of the Strategic Information Surveillance Process.



Strategic Information Management Model

Instead of trying to provide answers, we will propose a model for exploring strategic information management based on research. There is an excess of reflection on the models of formulation of the strategy that are fixed on what companies should do and how they should respond, when the intervention initiative has already occurred. We learn within the organization that an important ingredient for the success of strategic management is the effort that begins much earlier in preparing, training and motivating people on the process of formulating the strategy based on a previously defined model.

Preparatory work outside the organization is at least as or more important as the other, if we want the requirements of the environment on strategic decisions to be **better** informed and informed, more sympathetic to the business system and more balanced in terms of the impact on the company's future options. What should be done between managers and stakeholders in so that they become aware of the true dimensions of strategic problems affecting people and businesses? What needs to be done to achieve a higher level of knowledge and a greater mastery of the problems faced by society and managers who make strategic decisions? How can the levels of trust and credibility between the company and stakeholders be established, levels that the company today knows it must establish between managers and employees?

The answer to these questions challenges the traditional way of managing, so it is necessary to better understand reality and capture this perception, in order to increase human understanding of the tremendous complexity that is the real world. One approach to understanding the real world is to identify, within it, **strategic information** that corresponds to the future perspective of trends in the environment.

A second element of the approach is to make managers understand that using **better information** to support strategic decision-making can reduce risk, uncertainty and the likelihood of failure will be lower. This method is an empirical heuristic that has been proven, through an experimental verification process, since the information and knowledge society is becoming progressively turbulent and interconnected and its problems become increasingly complex and give rise to new models of approach to complexity.

The approach to the complexity of strategic problems has important systemic properties, since the reduction of the complexity of problems reflects the recognition that the complexity of the real world is often greater than the human capacity to manage complexity and therefore the synthesis of complexity compensates for the limited rationality of the human brain. Based on the simulation model it is possible to build large and complex models of the world, from elementary slices. This method is laborious, requires a lot of time, impresses by the volume of information it processes and the complexity it encompasses (independent and dependent variables), although the conceptual point of view is quite simple.

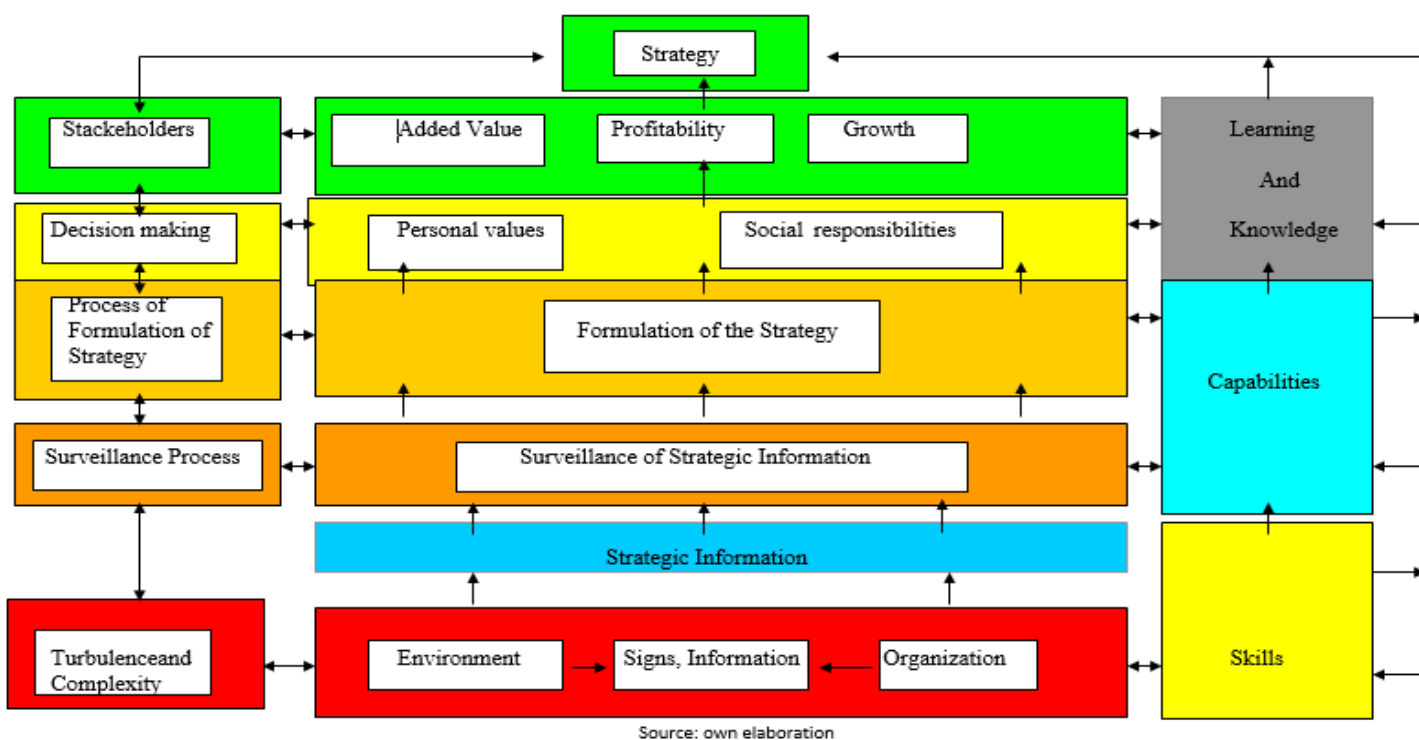
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The systemic approach focuses on the nature of relationships and interrelationships between key information, so no matter what the complexity of the strategic problem is, it is usually possible to identify a small number of strategic information that determines the basic configuration of the solution. The environment determines the modes and conditions of behavior necessary for the survival and achievement of the aspirations of organizations, so success depends on a two-way alignment:

- information about your behavior in the environment and information about the conditions of success in the environment.
- Information about your behavior and information about your internal configuration (skills and capabilities).

Managers must be prepared to respond to the challenges of the increasingly competitive, changeable and unstable environment. The response to this broader vision of strategic intervention means new efforts to create a process of monitoring strategic information on the environment, in order to identify in advance the future possibilities of the organization. Thus, in the information and knowledge society, the information resource will have to be managed strategically in order to support managers in decision-making to reduce risk and failure. Figure 8 shows a proposal to operationalize the Strategic Information Management model.

Figure 8 - Model of Operationalization of Strategic Information Management



DISCUSSION AND CONCLUSIONS

Theoretical and practical contribution

As a metric to assess the uncertainty and complexity of the environment we can look at the perception variable. Several studies have operationalized the perception of the uncertainty of the environment through subjective measures to answer questions about the complexity of perception, frequency of change and the importance of certain sectors (Daft, Sormunen and Parks, 1988, Boyd and Fulk, 1996, Choo, 2002).

The concept developed is well grounded in the current economic theory and contemporary theories about the functioning of the market. The basic resource of organizations seems to provide a basic approach to examine how organizations expect to achieve economic return based on imperfections of information from product and market actors. By adding the informational perspective the basic resource of organizations, according to Barney (1986) and Itami (1987), the role of information and imperfections of information in the strategy can be explained. The theoretical contribution is to build on the empirical basis of the recent development of the concepts of strategic information and information profitability. In essence the theory is available to examine and analyze the contribution of strategic information in the definition of the strategy.

In any research study, we have to choose what we intend to highlight and what will be ignored or at least keep in the background. To make these options there is a need for appropriate criteria which, even to ensure a reasonable margin of success, must have a

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justifiable rational basis. But from the moment we have it, we have the basis of a theory. We get a theory (or the beginning of one) when we use a justifiable rationale to make choices of the characteristics that will form the basis of our study and subsequent descriptions and those to be ignored. In this sense we believe that the research work carried out presents at least the preambles of a theory of strategic information.

The practical contribution is to provide organizations with a "tool" with which they can analyze the imperfections of the information of the product and market actors that are relevant to their business. On the one hand, strategic information "forces" organizations to examine the imperfections of the information they face and the opportunities they can provide them. On the other hand, it "forces" organizations to analyze the imperfections of information that their "suppliers" and customers face and what organizations can do to maintain or change them. In this sense, theoretical work provides a way to identify the needs of the information resource and the capabilities that are required to implement the choices of strategic information.

The model presented in Chapter 5 is practical and can be applied to any type of company. In this chapter we will show how it can be applied by any organization. In practice, some managers tend to consider strategy as a collective learning process over time, through the involvement of the frameworks in the definition of the strategy. Managers manage men in addition to other resources - including **information that** is subject to the filter of cognitive **abilities** and the "play" of influences and alliances. The definition of the strategy tends to take the form of a perspective rooted in collective intentions and reflects the patterns of use of resources and capacities *asa competitive advantage*. Managers tend to regard information as a "substance" *that* can be acquired, stored and possessed.

The **information** gives managers stability and comfort and by internalizing it they transform it into knowledge about the sector and the environment. There are, however, limitations in the predictive models used, since they do not take into account the **unquantifiable information** (the signs of changes). In the process of formulating the strategy, strategists tend to place greater emphasis on social and cognitive processes – the process requires creativity and synthesis, exactly what the formalization of positioning discourages.

The strategy when it is driven by supply and not by demand tends to be defined for a period of x years with annual reviews. Managers actively exploit information imperfections through the product and market actors as a way to achieve competitive **advantages**. Managers tend to consider important the existence of a Strategic Information Surveillance process that goes beyond the simple observation and monitoring of competitors and the market.

The sources of information that "analysts" and "strategists" use are usually primarily macroeconomic forecasts made by globally credible institutions, favouring quantitative information over qualitative information. Some managers are satisfied with the quality of information about the internal situation (quantitative), but are not satisfied with the quality of information about the environment, especially qualitative. The current strategic surveillance process is done in many organizations by external consultants.

Information provides them with the creation of wealth and value for customers and shareholders; The *information* available to managers currently rarely allows them to increase the time available for strategic decision-making; Managers have a rational *and opportunistic* behavior, that is, they seek their own interests as a guide line for actions, in the offer of products and services, in order to achieve competitive *advantages*.

THEORETICAL REPERCUSSIONS

The world is undergoing major economic, technological, social, demographic and other transformations that influence all social levels. Organizations actively look for alternative ways to survive. With globalization, organizations began to become increasingly concerned with competitiveness and the offer of products and or services with higher quality at a lower price. The trends point to a permanent evaluation by organizations about the environment and the information (signals) departing from it, as well as the resources at their disposal to, through a positioning or strategic intention, take advantage of the opportunities identified and maintain lasting competitive advantages, through the creation of value for customers and *other stakeholders*, through their products and or services.

The challenge for organizations is to deal with the uncertainty, turbulence and instability of the changing environment (global, regional and or local). To cope with the constant changes in the environment and to ensure competitive advantages it is necessary to anticipate changes, understand opportunities earlier and permanently manage the information flows that involve organizations. Possessing a large amount of information is not enough. The difference lies in the selection and analysis of information (weak and strong signals) transforming it into knowledge, so that organizations can consciously influence or adapt to the demands of the environment. The question of knowledge is closely linked to perception. In practice strategic surveillance is

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neither a new or unknown process. What is different is the effort of organizations to systematize and formalize the process of surveillance of strategic information.

The strategic information management process aims to enable strategic decision-makers to anticipate trends in the environment and competitors, to identify and evaluate earlier the threats and opportunities that are presented to organizations, in order to define the most appropriate strategy for their development, aiming at achieving competitive advantages and adding value to information. The process of monitoring strategic information should include, among others, the following most important aspects:

- **Being systematic and ethical** – should not be based on unethical actions or be just a process of responding to specific questions.
- **Being formalized and evaluated permanently** – without formalization becomes a sporadic and unimportant process within organizations; requires a permanent evaluation to verify its effectiveness and efficiency for organizations.
- **Possessing the necessary resources (human, material and financial)** – the information to be collected and analyzed aims at identifying business opportunities; without clear objectives and adequate means will be a waste of time and resources.

The process of strategic information management is an ethical process of identification, collection, treatment, analysis and dissemination of strategic information to organizations, aiming at its use in the process of formulation and implementation of the strategy. This means that the process of monitoring strategic information generates information about future trends and/or events and not only information to justify past decisions, i.e. it should not be limited to justifying what has already happened, but rather identifying trends and business opportunities. Strategic information management allows small, medium or large organizations to:

- Identify new business opportunities.
- Identify new competitors or potentials.
- Anticipate the changes of the surrounding environment.
- Anticipate the actions of current competitors.
- Learn about social, political, technological, economic and other changes that may affect business.
- Help managers reduce uncertainty and failure.
- Increase the time available for managers for strategic decision making.

For strategic information management to be successful, it is necessary to take a few steps before the process begins:

- Clear definition of the objectives, i.e., what (strategic) information the process should seek for support in strategic decision-making.
- Conducting an informational audit, i.e. making an inventory of existing information and knowledge relating to persons and organization (skills and capabilities).
- Conducting an internal Marketing in order to raise awareness of the value of strategic information, that is, sensitize internal employees to the importance of participating in the process.
- Provide a system of incentives for employees in order to recognize and reward their contributions.

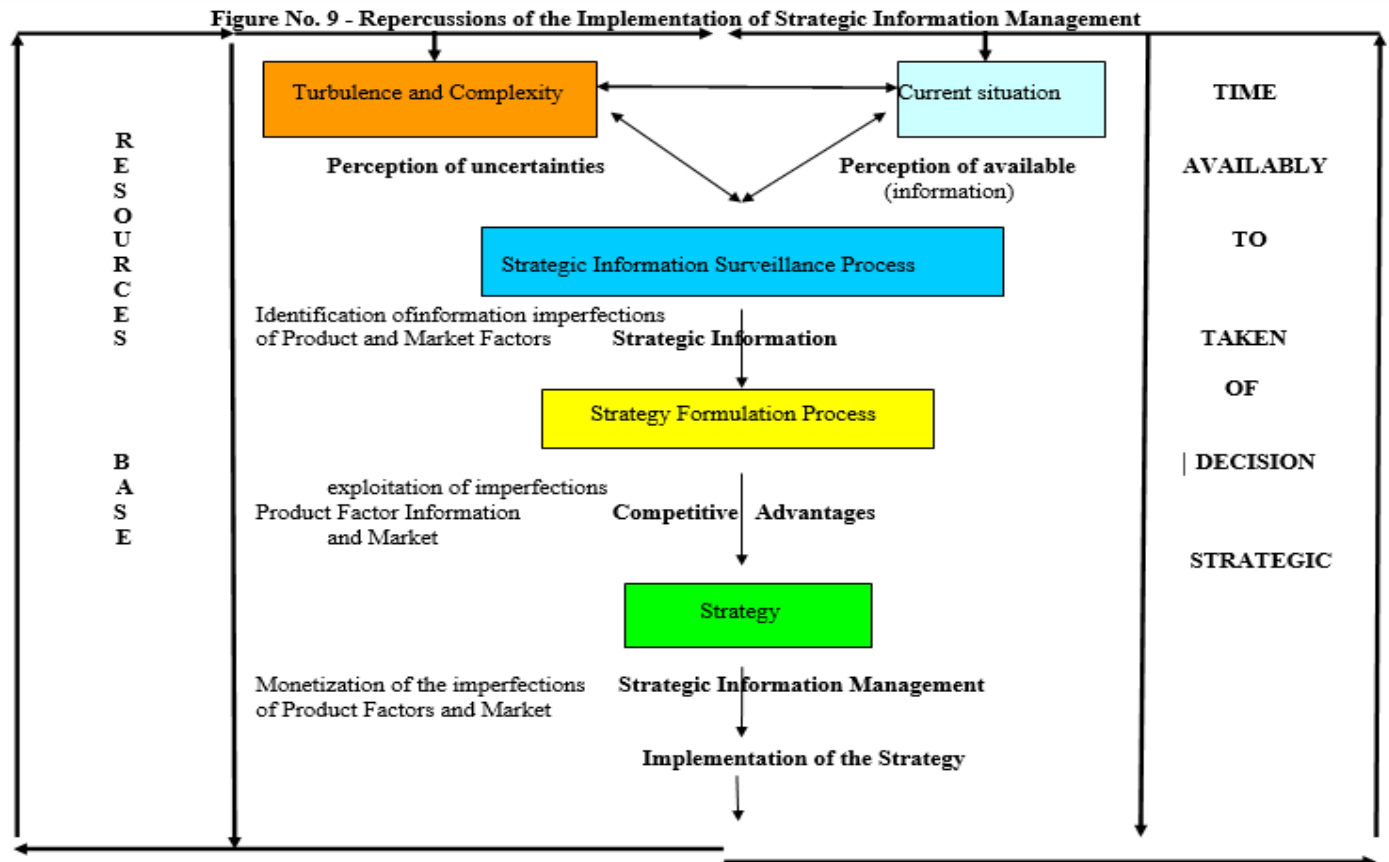
The process of monitoring strategic information (weak, strong signals, quantified information) depends on the business and should include, among other possible, the following surveillances:

- **Social surveillance** – information that may affect the business from the point of view of sociocultural and environmental changes and trends, such as information on social infrastructure, labor and its qualification, security in the region, population growth or decrease, population age distribution, life expectancy, career expectations, lifestyle changes.
- **Economic surveillance – information on economic developments or** that may affect economic developments, such as financing, taxes, interest rates, unemployment rate, inflation rate, wages, prices, exchange rates.
- **Technological surveillance – information that may affect the business from a technological point of view, such as** information on new technological advances and advances in its transfer to the market.
- **Political surveillance** – information that may affect the business from the point of view of political decision-making, such as the government's economic, fiscal and labor policy.

The processes of strategic management of information and surveillance of strategic information involve a wide range of professionals (all) who contribute to its operation, i.e. strategic managers, information analysts and researchers / information collection with differentiated professional profiles, and organizations can use external experts to carry out the systematic

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collection and analysis of information. The role of researchers is to collect information (weak, strong and quantified information), through research or personal contact that they then transmit to "analysts" and or strategists who synthesize and study the information to generate alternatives and for strategic decision-making.



PRACTICAL REPERCUSSIONS

With regard to the practical repercussions of the adoption of the proposed strategic information management model, it seems to us that changes in the processes of surveillance of strategic information, in the process of formulating the strategy, as well as in the characteristics of the work of the basic resources, appear as inevitable with regard to the perception of information, in terms of the identification of trends (weak and strong signals) and the performance (historical and or predictive information) of organizations. Managers have to assume that the perfect market and that perfectly informed customers and suppliers is a myth and that the amount of profitability of strategic information depends on the cost of resources, the cost of acquiring new resources and their economic value when sold the products. However suppliers will never sell their products if the total value is not reflected in the price, nor will customers pay a higher price than the cost. In these perfect market circumstances, the strategy can only produce a normal return.

For economic profitability to be realised, organisations will have to actively exploit the imperfections of information from product and market actors so that customers and suppliers have different expectations about the value of resources and products. Thus, managers will be able to use retrospective factual information to reduce structural uncertainty through the progressive discovery of the type of information that others use and rely on structural information to reduce forward-looking uncertainty by anticipating action. Managers' information skills depend primarily on individual skills, personal knowledge and group dynamics; a second capacity comes from the leadership capacity to capture and direct social energy; a third element of the competence of managers is strategic information for the definition and implementation of the strategy, which presupposes the existence of a process of surveillance of strategic information.

The main objective of the strategic information surveillance process is to acquire new knowledge (information feeds knowledge) in order to facilitate action, i.e. to create knowledge to support the definition and implementation of the strategy. The observation of the turbulence and complexity of the environment enables managers on the one hand to act or react to the factors of change, contributes to increase communication between line managers and staff, as well as allows the involvement of all employees in the process of formulating the strategy. As the escalation of change and complexity of the surrounding environment develops,

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knowledge increases or decreases ignorance, which involves successive states of knowledge whose speed of evolution differs in temporal terms until the full impact is known. The predictability of change has been steadily decreasing as changes are increasingly coming from sources of information outside the traditional boundaries of industry.

A timely response to changes is only possible if changes are perceived before formulating the strategy, that is, responding to the signals (weak and strong) produced by a change in the initial state of its development. This presupposes that organizations have the necessary skills to deal with this information to initiate the response or to have a perception of the need for strategic decision-making by identifying the opportunity(s) (discovery phase). As for the process of formulating the strategy there are some practical implications to the extent that in schools of strategic adequacy, the strategy is defined from the outside in and the process is ensured by the "analysts" and or the strategists. The brain of these "analysts" and or strategists is limited to their cognitive abilities to "discover" all the changes of the surrounding environment. Moreover, the information on which the "analysts" and/or strategists are based is the (quantitative) information on past or predicted performance, by extrapolation of the known information.

In the models of schools of movement or strategic intent, the strategy is defined from the inside out, that is, the strategy is the result of the use of the resources of organizations in one way or another to achieve and maintain sustainable competitive advantages, since the most valuable resources have a lower supply than demand and are therefore rare, leading to an above average return. Regardless of the model adopted by organizations to formulate their strategy, the concepts of strategic information and strategic information surveillance can be used in the strategy formulation process. However, the profitability of strategic information implies the active exploitation of the imperfections of the information of the product and market actors, but whose identification is dependent on the cognitive abilities of the "analysts" and or the strategists and their size.

In practice, strategic decision-making is based on the clarity of the organization's objectives that meet the *preferences of stakeholders* and information as a perception of trends and performance, about the methods and processes by which the objectives are defined, as well as the insight of the "strategists" to guide the action.

IMPLEMENTATION PROCESS

The model presented is essentially a contingency work that specifies two conditions of influence of organizational observation: the environment and organizational intrusion. Nowadays with high volatility of the environment organizations need to face the problem of strategic information. On the one hand, the environment appears as unanalyzed due to the speed of changes and their complexity. On the other hand, organizations recognize that they need to be proactive in observing and building the environment. Some organizations believe that because the environment is underway, there is an opportunity (or the need in some cases) for them to intervene and influence the development of their competitive advantages.

The model implies that organizations encourage their members to more proactively observe the perception of the environment and their capabilities and competences and that organisations should remain closed with some of the " important actors " and collect information about stakeholders and encourage *their employees* to be interested in discussing the future of organizations. For organizations with strong intrusion, the possible metric should include the volume of observation and research, particularly the frequency and extent of the use of external sources, or the volume of the budget for the collection of external information (signals, information on market studies, access to the database, etc.) and build the architecture of strategic information.

The contingency model of observation of the surrounding environment presented offers plausible interpretations for different levels and observation patterns that are observed in practice. We elaborated the observation of the environment such as information research and the processing of organizational knowledge, discussed the implications for the management of strategic information and emphasized what much more can be learned by testing the model in the field of research. As much as we can make practical use of our analytical references, we must not forget that our goal is to help understand the importance and value of strategic information in the definition of strategy. As understanding comes from practical progress, the most important results are as follows:

- An obvious benefit of our study is that we expose the complexities of information imperfections, its importance in defining strategy and creating competitive advantages, through the maintenance or alteration of information imperfections.
- Organizations can realize and maintain an above-normal return, by maintaining or resolving the problems of information imperfections of the product and market actors and thereby achieving lasting competitive advantages.
- Strategic information is a resource that can provide organizations with a higher-than-normal return and can therefore provide them with competitive advantages.

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- The observation / surveillance of strategic information is an open and non-oriented attitude, that is, seeks to identify opportunities. Systematic strategic information research (weak and strong signals) actively seeks business opportunities. Both consume time; this is a function of the knowledge of strategists (observers, vigilantes, "analysts" and decision-makers) ; knowledge is more complex than information, but there is no knowledge without information.
- The time available from managers for strategic decision-making is inversely proportional to the information available and to knowledge; the use of the process of observation and surveillance of strategic information allows them to increase the time available for strategic decision-making.
- The concept of strategic information establishes the bridge between the theory of transaction costs and the theory of The Base Resources of Organizations, in the process of formulating the strategy, since the information is used as a base resource, in the definition of the strategy. (Barney, 1986, 1991; Penrose, 1959; Wernerfelt, 1984; Williamson, 1999; Amit *et al*,1993).

The aspects of strategic information to be considered in the formulation of the strategy are:

- The profitability of information.
- Information that creates value for customers and shareholders.
- The information that allows innovation and differentiation.

Strategic information can provide competitive advantages through the active exploitation of information imperfections of the product and market actors (Simmons and Lynch, 1991; Ross and Creyer, 1992; Truijens, 2001). Strategic information can increase the available time of managers in strategic decision-making through a process of strategic information surveillance in the permanent research of business opportunities. "He who occupies the battlefield first and awaits his enemy is at ease; who then arrives at the scene and rushes to fight is tired" (Sun Tzu, 1971); (Porter, 1980).

Clues to New Investigations

Strategic information management plays an especially important role in defining and implementing the organizations' strategy, as today they live days of uncertainty, frequent changes and fierce competition that contribute to the competitive and complex environment being a puzzle to be unveiled every day. The right information, at the right time and at the right time, both avoids unimaginable losses to the business and provides considerable opportunities, as well as allows to improve the performance of companies and maintain a prominent position in the industry and or sector.

To achieve the goal of strategically managing information, it is necessary to make some changes in the way organizations manage information and how they relate to their employees. In this world where communication and information technologies are increasingly present in the world of organizations, the human mind presents itself as the best "tool" for dealing with information, since the day has not yet come when the human mind can be replaced, since those who create knowledge and make decisions are managers and not technologies.

It is important that managers understand the difference between what "is good to know" and what "you need to know" to make decisions. In many situations' managers fall into the temptation to collect more information than they really need and end up with a huge amount of information that does not actually do much good to define and implement the strategy, on the contrary they are a factor of disturbance. Managers need to understand and reflect on what strategic information is relevant to the definition of the strategy and its implementation.

Throughout the article we tried to show the importance of strategic information in the process of formulating, implementing and evaluating the strategy to achieve sustained competitive advantages. There are, however, some aspects to be considered when using this concept, such as:

- Constancy in strategic information management is an extremely important aspect for results to happen. The monitoring of the environment has to be daily and uninterrupted so that the "small" important and pertinent information is not lost. The analysis of this information cannot be done only at special times because there will probably not be more time to make the most appropriate strategic decision. The changes have no time and date set to happen; they do not appear immediately but give signs (weak and or strong) that they are to come and if managers have not prepared for these changes, there is no time to turn back.
- Learning takes time to achieve maximum effectiveness in achieving the desired results. Managers do not expect immediate results. It takes time for the people of organizations to acquire the culture of strategic information management to be assimilated.

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- The involvement of all employees is important. The work of strategic information management cannot be done only by one person, but rather be a collective effort to compromise and convince the objective of strategic information.

As much as managers can make practical use of the different models of strategy formulation allow me to remove that the fundamental objective of this book is to help understand strategic information. With understanding come always practical progress (it is said with reasonable justification, that there is nothing as practical as a good theory). An obvious benefit of our study is that it exposed some of the complexities inherent in the identification, interpretation and use of strategic information. The book also highlighted the relationship between information and knowledge. In fact, there is no knowledge without information. That is why you can't understand knowledge without first understanding information.

In any study we must choose what is intended to be stressed and what will be ignored or at least keep in the background. To make these choices, there is a need for appropriate criteria which, even to ensure a reasonable margin of success, must have a justifiable rational basis. But from the moment we have it, we have the basis of a theory or at least the beginning of one when we use a justifiable rational basis to make choices of the characteristics that will form the basis of our work and subsequent descriptions and those that should be ignored. In this sense I believe I can claim that the previous pages present at least the preambles of a theory of strategic information.

Is this the beginning of a theory? I'd say so. However, the reader may disagree. In any case, another question arises: is it useful? Despite the applications of strategic information theory, I leave the question to the reader. But to some extent, the answer will probably depend on what is meant to be "useful." In business it is often enough to find the five percent strategy that can make the difference between success and failure. The theory of strategic information described in this study may be able to provide managers with this five percent solution.

As our understanding of strategic information progresses and more people use the new theory of strategic information under development, we can expect to see more clearly new results. Despite the similarity between the development of the theory of strategic information and that of other new scientific theories, it should not be forgotten that the practical applications of that information will not develop in another "precise" science.

The theory of strategic information will not provide us with what we want, nor will it achieve anything else. There's no magic ball. But if we are in a business where at least the five percent strategy is significant, which any manager aspires to, you may find that the ideas presented in this book can be of real use.

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