RESEARCH NOTE
Scanning the business environment: some conceptual issues

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Abstract *The process of scanning the business environment is reconceptualized on the basis of a critical analysis of Aguilar's pioneering work on scanning, as well as that of Lawrence and Lorsch's contingency theory. Concepts of general systems theory, entropy and communication theory are utilized in order to prove the hypothesis: the level of complexity of the environment, "imposes" on the organization a specific or analogous scanning process, and in turn an analogous communication system which is in effect the structure of the organization itself.*

Introduction

To be involved with the issue of the scanning of the external business environment is of great importance, and beyond any specific time and place, mainly for the following practical and theoretical issues:

- The great need that managers have to predict and understand the changes that take place within the external business environment, which, as time goes by, is getting more complex and is expanding.

- The inadequate knowledge of managers, in relation to the scanning process and the lack of research data and evidence on this issue, complicates far more the study of the whole problem.

- The fact that the literature on management, in relation to the theoretical and empirical approach of the scanning process, has not devoted proper attention to this issue.

Contingency theory and scanning: some conceptual pitfalls

The scanning process of the external business environment should be examined on the basis of systems theory (Churchman, 1968), the phenomenon of human communication (Thayer, 1968), and, finally, the classic research of Aguilar (1967) on the scanning of the external business environment, as well as Lawrence and Lorsch's (1967, 1969, 1970) contingency theory. Through this approach, it is possible to arrive at a new organizational model, which can possibly clarify some conceptual issues in relation to scanning.

The so-called contingency theory has its roots in systems theory (Hall and Fagen, 1956). Its primary conceptual issue is based on the assumption that all organizations are open systems and survive through the continuous and

successful interaction with the external environment. As a result, contingency theory attempts to explain the way organizations function under different conditions of the external environment. In other words, this approach arrives at the conclusion that the external environment within which an organization chooses to function, determines the internal structure, and the overall procedures of this specific organization. Therefore, different organizational structures are needed in order to successfully face different organizational functions within different external environments. It becomes obvious that contingency theory, along with the empirical research of Lawrence and Lorsch, is based on the central question: What are the organizational characteristics which are needed in order to effectively face the different external environments, such as the different markets, technological conditions, etc.?

The decisive and catalytic role that external environment plays in the formulation of the structure of the organization has become a basic conviction to all researchers who preoccupy themselves with the contingency approach (Rice and Greenlaw, 1963). As a consequence, in the last few years, they have directed their attention and research towards the outmost linkage between the organization and its external environment, which is the scanning process. But, despite the fact that the issue of scanning is of vital importance to the viability of the organization, there are certain managers, who are trapped by the faulty assumption that somehow the external environment does not really matter so much since it cannot be controlled anyway.

On the other hand, managers who recognize the importance of the external environment and, as a result, try to collect as much data as possible, are faced with a strong contradiction, which is the uncertainty of the fast changing environment. This uncertainty relates to all those external events that affect the organization, and evolves from the dynamic and complex relations of all those variables which make up the environment.

This implies that the way the environment is interpreted by the managers unavoidably leads them to the creation of an organizational structure capable of responding to environmental demands and characteristics of which it is composed. Therefore, we can safely conclude that the different kinds of hierarchies, organizational practices, and strategies, which have been developed in the past, do not seem to fulfill the needs, the demands and the provocativeness of the present. The present is characterized by an intense world-wide market competition at a fast changing pace, therefore the majority of the organizational theories and practices of the past must gradually be faded out.

There is no doubt that managers who insist on scanning the environment through outdated organizational structures and practices sooner or later are led to the wrong conclusions about the state of affairs of the external environment. As a result, wrong conclusions lead to wrong decisions and overall strategic choices (Donaldson, 1982).

If somebody were to examine the technical and empirical approaches which have emerged as managerial tools, that person could easily conclude that they

lack the necessary theoretical basis which could help to explain the crucial transactual relationships between the organization and its environment (Drucker, 1988).

The recent developments in contingency theory (Daft, 1986) and organizational development (French and Bell, 1995), despite the fact that they are on the right track, do not seem to move towards a deeper theoretical or conceptual inquiry of the phenomenon of scanning and communication (Ardekani, 1986).

As we have already pointed out, the nucleus of contingency theory is the symbiotic relationship between the organization and its environment. That is, the transformation of the level of the environment from static to dynamic "imposes" the analogous transformation on the structure as it changes from bureaucratic to organic.

Obviously, this adaptive behavior of the organization is based on the assumption that the organization is a living system, which is characterized by the ability of morphogenesis (Buckley, 1968). That is, depending on the degree of dynamic change of the environment it can adapt its structure accordingly.

This is the very essence of contingency theory, which claims that there is no one best way to organize and direct an organization, but it all depends on the characteristics of the specific environment within which the organization operates. The basic weakness of this approach is the fact that contingency theory disregards almost totally the role of communication in the existence of human beings and the creation of their systems, which are the social and the sociotechnical systems such as business enterprises and other organizations.

In addition, contingency theory overlooks the role of communication in relation to the existence and evolution of the environment and, most important, it disregards the impact of communication upon the relationship between the organization and its environment (Arrington and Sawaya, 1984).

It is for this reason that we could argue that contingency theory examines the structure of the organization in a mechanistic way. In other words, it denotes, more or less, that the successful organizations restructure or move their parts depending on the peculiarities of the external environment.

As a consequence, the phenomenon of communication, as far as the followers of contingency theory (Lawrence, Lorsch *et al.*) are concerned, is not a conceptual or an empirical issue.

Our second point of interest is the empirical research of Aguilar (1967) whose basic interest is in the process of scanning the external environment of the organization.

The basic aim of Aguilar's research is threefold:

(1) How do managers gain relevant information about business opportunities and threats?

(2) What kinds of information do managers seek and where?

(3) How can managers improve their scanning of the environment for the kinds of information needed to design major strategies and corporate long range plans?

Many management scientists have considered Aguilar's research as a pioneering effort, which, incidentally, in recent years has been revived due to the importance of the rapidly developing management information systems (Saleh and Wang, 1993).

The research effort of Aguilar embodies certain basic conceptual and empirical weaknesses. That is, Aguilar did not relate the scanning process with the level of the dynamic characteristics of the external environment. In other words, he did not examine, theoretically and empirically, to what extent the different kinds of environments "impose" upon the organization different or analogous ways and processes of scanning the environment. This weakness is due to the fact that Aguilar is not concerned with the basic phenomenon of human communication, which should have been the catalyst of the conceptual and empirical issue of the scanning process (Fulk and Boyd, 1991).

As a result, Aguilar's scanning process amounts to a mechanistic process, since he implies that the scanning process can improve provided that we seek better sources, kinds of information and ways of scanning. He follows the same mechanistic conception as that of Lawrence and Lorsch.

Towards a reconceptualization of scanning
The conceptual and empirical pitfalls that we presented above, in relation to Lawrence, Lorsch and Aguilar, lead to the need of reconceptualizing the issue of the triadic relationship: organization – scanning – environment.

This can be done by borrowing concepts from general systems theory (Bertalanffy, 1969), Ashby's law of requisite variety (Ashby, 1956), the concept of entropy from the second law of thermodynamics (Brillouin, 1950) and the concept of "organizationess" (Miller, 1988), which, paradoxically, has been overlooked by the theorists of management.

The concept of "organizationess", can be examined through the concept of entropy which the theory of general systems borrowed from the second law of thermodynamics.

On the basis of the above mentioned concepts we can begin our reconceptualization, by stating that the organization is, after all, an open living system which absorbs negative entropy from the environment. This negative entropy is the "information energy" which is absorbed by the communication system, which links different parts of the system, that is, the organization.

The absorption of negative entropy aims at creating a state of order and equilibrium between the system and its environment (Prigoggine and Stengers, 1984). Therefore, the structure of the system is nothing but its communication system which, despite the fact that it continuously evolves, also presents, at times, a certain state of stability.

The law of requisite variety, as stated by Ashby, applies to open living systems such as organizations. It states that the complexity of the environment can be comprehended, and confronted, as long as the system (the organization) can develop the analogous or indispensable complexity. Therefore, we can safely conclude that the complexity that the system must possess is nothing but the complexity of the communication system which the system has developed in order to maintain its relationship with its environment.

In other words, in order for the organization to succeed in developing the necessary complexity, in relation to this environment, it creates a communication system capable of processing the necessary quantity and complexity of data, which it absorbs from its environments (Boyd, 1989).

The environment, directly or indirectly, impels the organization, provided that the organization as a morphogenetic system recognizes the need to create a complex communication system, which is characterized by the strategic mission of scanning the environment.

Consequently, we can logically conclude that depending upon the level of dynamism or the characteristics and peculiarities of the environment the scanning process changes accordingly, and in turn, "imposes" different characteristics on the communication system, which in a sense is nothing more than the structure of the organization itself. The structure of the organization is nothing more than the communicational patterns and practices (Horti, 1958). These communicational patterns and practices are established and stabilized up to the point that change takes place in the complexity of the environment. This change triggers the analogous change to the scanning process and consequently to the subsystems or total communication system, or, in other words, to the structure of the organization.

Perhaps we should define or describe the structure of the organization in accordance with James Miller's (1988) approach. He states that the structure of the organization should be viewed as a system of coding and decoding of data which flows into and out of the organization.

Summarizing, we may arrive at the following statement, which we tried to conceptually prove although it still remains to be empirically proven. That is:

> The level of complexity of the environment "imposes" on the organization specific or analogous scanning process, and in turn, an analogous communication system, which is in effect the structure of the organization itself.

Scanning: some practical implications

The above-mentioned hypothesis, which has been conceptually analyzed, is presently under the stage of empirical investigation, which has not yet been concluded.

Despite that, there are certain suggestions which can be made towards the practical implications of the scanning process, as it has been presently reconceptualized.

Obviously, because of the conceptual issues which have been raised, the scanning process should not be viewed by contemporary organizations,

through the usual traditional approach, as an incidental activity, which they can trigger accordingly.

Scanning, as a communication process, should be a continuous process for the survival of the organization, as breathing is for the biological survival of a human being. Consequently, it is of the utmost importance for the contemporary managers to reconceptualize the interrelationship between environment – scanning process – communication system – organizational structure, as they undertake the design and management of their organizations.

Failure to do so creates many serious problems, such as the fractionalization of the scanning activity, which seems to arise from the primary feature of all complex organizations – namely the division of labor. This, in turn, is an outcome of the misconnection between organizational structure and communication system. As a result, some of the most common practical problems which arise are:

- The failure of managers to utilize relevant information, which the organization has acquired but which is scattered around.

- The inability of most managers to gather information useful to others.

- The failure to marshal the external environmental information, especially in relation to information with long-range strategic implications.

Some large organizations attempt to solve this problem by forming control groups for monitoring the operations plans and strategies of different divisions in relation to the environment.

In addition, for the purpose of bringing together the flow of the many scanning activities which result from the "plugging" into different environmental information networks (Internet etc.), these organizations use the following practice: they establish a central information collection and a display point, which is sometimes referred to as the "corporate information presentation room". In this area, through computer-aided means many charts, graphs, tables etc. are displayed for management's consideration.

In addition, several companies try to encourage the flow of environmental information by requiring extensive reporting, through memoranda and meetings. Such practices may undoubtedly increase the flow and coordination of data, but also necessarily the perception and understanding of it, as the essence of actual communication implies.

It is rather obvious that these, and perhaps many other scanning and internal communication practices, are imposed on existing organizational structures as something separate or additional rather than being incorporated communication as patterns and practices of a totally integrated communication system of the organizational structure.

Through a totally integrated communication system, new improved techniques of seeking, obtaining and handling external information can be incorporated, and new vistas might be opened up as more attention is given to

the challenge of creating a "scanning organization". However, we should always keep in mind that no practices or techniques can be more effective beyond understanding of the human communication process.

Concluding remarks

Organizations like business enterprises, as social creations of people, are dynamic and complex systems. In order for these systems to maintain a symbiotic relationship with their environments they must develop the appropriate sensitivity towards the changes and differentiations of their environments.

The identification of the environmental changes, which are "captured" by the scanning system of the organization, creates the appropriate transformations to the communication system with the outcome on the structure of organization itself. As a result, the role of the people within the organization is upgraded, since the interpretation of any interrelationships between the organization and its environment depend upon people's communicational abilities and susceptibilities along with the communicational technologies that they choose to use (Vickers, 1968).

Therefore, in this sense, the role of the human being is upgraded and it is of the utmost importance.

The way the environmental changes and different situations are interpreted cannot be based on an absolute truth or reality, but only on the communicational reality that human beings create (Thayer, 1968).

The theoretical statement that we presented above, which still remains to be empirically proven, must be analyzed through the phenomenon of human communication. Only through this approach can we enrich and strengthen our hypothesis, and at the same time prove that the very essence of our hypothesis is not whether it is "true" or "false", but whether it is most appropriate for our conceptual inquiry (Laszlo, 1972).

In other words, our approach does not have to do with the traditional conflict of objectivity vs subjectivity. The basic issue, is how we "make sense" of our world, and as a consequence, how we behave. It all depends on the specific communicational abilities and susceptibilities that we cultivate, in relation to us and to our communicational environment. Therefore, man and his systems (social, sociotechnical, environment) is not any different from his communication systems, and vice versa.

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