CHAPTER TWO
THE THEORETICAL FRAMEWORK OF THE STUDY AND THE RELATIONSHIP WITH THE SYSTEMS THEORY

2.1   INTRODUCTION

In Chapter One the research and the research problems was stated against the broader background and complexities that influence the problem.

In this chapter the fundamentals of the systems theory and the relationship with environmental scanning will be investigated.

The importance of strategic planning as a major activity of organisational management is increasingly being accepted by both academics and professional managers. Many who have considered the future needs of organisations have argued that a lack of adequate long range and strategic planning would be disastrous for organisations and for the society.

One of the predominant theoretical lines of thinking underpinning much of public relations practice is the systems theory. The theory states that mechanical, organic and social systems (including organisations) can be defined by their interactions with their environment (Gregory 1999: 266).

As strategic planning moves towards maturity, the viewpoint that is increasingly being applied is that of the organisation as an "open system". Simplistically this notion holds that an organisation's growth and survival is dependent on the nature of the environment it faces and those which it may face in the future (Fahey, King & Narayanan 1981: 32).

The systems theory entails the interdependent relationship of the parts of an organisation. The *systems theory* and the *information theory* contribute to investigate the various characteristics of the physical, biological, social and behavioural phenomena. It is not only communication theories, but also have important implications on communication and other socio-cultural happenings (Littlejohn 1983: 34).

According to the originators of the *information theory*, Donohue, Olien & Tichenor, it is defined as follows: "As the infusion of mass media information into a social system increases, segments of the population with higher socioeconomic status tend to aquire this information at a faster rate than the lower status segments, so that the gap in knowledge between these segments tends to increase rather than decrease" (Tichenor et al. 1977: 159-160).

The roots of the information theory are intermingled with the basic transmission model, which conceives communication as essentially the intentional transfer of information from sender to receiver, by way of (physical) channels, which are subject to noise and interference. According to this model, communication is judged by the efficiency and effectiveness in achieving the planned "transfer" (McQuail 1994: 248).

The concept of information has proved difficult to define, because it can be viewed in different ways, but the central element is probably the capacity to "reduce uncertainty". Information is thus defined by its opposite (randomness or chaos).

The insight which led to the development of information theory was the realisation that all the processes which might be said to convey information are basically selection processes. The mathematical theory of communication provided an objective approach to the analysis of communication texts. The

basis for objectivity (quantification) is the binary (yes/no) coding system, which forms the basis for digital computing (McQuail 1994: 248).

The information theory is general enough that it can be applied to written languages, musical notes, spoken words, music, pictures and many other communication signals.

The systems approach is an abstract perceptual framework that is an exceptionally good aid to understanding and practising public relations. The approach identifies the principles common to all systems, the most important of which are wholeness, hierarchy, self-regulation, openness, and adaptability (Lubbe & Puth 1994:41)

The systems theory and the relationship with environmental scanning will now be investigated.

2.2   THE ORIGIN OF THE SYSTEMS THEORY

The development of the general systems theory is one manifestation of the fundamental changes in the nature of scientific analysis. Rather than investigating the universe in a cause and reaction frame of mind, researchers realised that any cause and reaction relationship take place in a more complex system of relationships. Nothing is analysed in isolation, but in terms of their relationship with a larger system (Turner 1991: 118).

These systems of inter influential happenings distinguish that the whole is larger than the sum of its parts. Amongst the modern scientists, Ludwig von Bertalanffy was the first to advocate a General Systems Approach. Various other scientists joined in and the groundwork was established for the General Systems Theory (Turner 1991: 118).

The systems theory grew exponentially in the 1960's. This theory originated as alternative to structural functionalism. It has its origin in the physical sciences, where both the organic and mechanical entities are viewed from the systems terminology. The systems theory regards the society as a big system, composed of a number of interdependent parts (Ritzer 1992: 220).

According to Bertalanffy (1968) a system comprises a complex interaction of elements. This description implies that knowledge of parts or elements of a system is not sufficient to understand the whole. It is exactly the interaction between elements that forms each system unique.   The sum can be said to be equal to the characteristics of the independent elements *as well as* the interaction between the elements (Marais 1979: 156).

The properties of the General Systems Theory underwent development and mutual reinforcement with adjacent disciplines such as cybernetics and mathematical information theory.   The theory found application in many disciplines. The eclectic nature of General Systems Theory has led to a wide disparity in the constructs that attribute to the theory. Further, General Systems Theory enjoys little empirical verification outside those disciplines that share their origins with the theory. The term "theory" is thus misleading when applied to General Systems Theory, as it is widely accepted as a perspective or approach, and not as a theory (Lubbe & Puth 1994: 42).

It is necessary to investigate the relationship between the parts as well as the relationship of the system with other systems. It is also necessary to look at the inputs in the social system, the way in which these inputs are processed by the society and the outputs that are produced (Ritzer 1992: 220).

A system is a set of objects or entities that work with each other to form a whole. From the most simplistic viewpoint, it can be said that a system consists of four things, the first being objects. The objects are parts, elements or members of the

system. In the second place, the system consists of attributes, or the qualities or characteristics of the system and its objects. In the third place, there are internal relationships between its objects. This characteristic is a fundamental quality of systems. In the fourth place, a system always has an environment. Systems do not exist in a vacuum, but are influenced by the environment (Littlejohn 1983: 35).

The systems theory is a product of a variety of scientific ideas, amongst other the information theory, operational research and the economic systems theory that moved from other fields into the sociological arena. These ideas were then adapted to be applicable to social life.

2.3   THE CHARACTERISTICS OF THE SYSTEMS THEORY

Bearing in mind that the systems theory has its origin in the sciences and can be applied on all behavioural and social sciences, it provides, in the first place a common way to form a unit. Secondly, the systems theory is multi dimensional and can, therefore, be applied on a large as well as small scale.

In the third place, the systems theory is interested in the variety of relationships between the various aspects of the social world and operates against the analysis of the social world. The argument of the systems theory is that the intrinsic relationship of the parts can not be dealt with outside of the context of the whole (Ritzer 1992: 518).

In the fourth place, the systems theory regards all aspects of the socio-cultural system in process terms, to be precise, as networks of information and communication.

In the fifth place, and maybe most important, it is inherently integrative. It entails the integration of big structures, symbolic systems, action and interaction and

consciousness. The idea of the integration of the various levels was also accepted. In the final instance, the systems theory regards the social world in dynamic terms, with consciousness of socio-cultural existence and dynamics in general (Ritzer 1992: 519).

The systems theory focuses upon the principles of all systems' organisations, regardless of type. All systems are seen to possess six qualities: wholeness, hierarchy, self-regulation, openness, adaptability and stability and flexibility.

2.3.1 Wholeness

Systems have properties that are different from those of their individual parts because of the relationship and interdependence that exist between the parts. The mutual effects of the parts upon each other result in a whole system that is more than the sum of its parts (Lubbe & Puth 1994: 43).

2.3.2 Hierarchy

Each system is seen as a part of some hierarchy. Systems are all seen as subsystems of greater systems, and in turn as systems which comprise subsystems. Lower-level systems are comparatively simple and mechanistic, while increasing complexity is displayed by systems at the upper levels of the hierarchy (Lubbe & Puth 1994: 43).

2.3.3 Self-regulation

Each system is believed to display a measure of self-regulation. This self-regulation guides the operations of the system towards a goal state by "steering" towards it. The "goals" or final states of systems can be extremely limited, predictable and simple at lower hierarchical levels, and extremely complex at higher levels (Lubbe & Puth 1994: 44).

2.3.4 Openness

The systems theory distinguishes between open and closed systems. A closed system is separated from its environment. It is, therefore, subject to the second law of thermodynamics, thus entropic, tending towards maximum disorder. An open system has permeable boundaries that permit the exchange of information, material, or energy with its environment. It therefore has the potential to evolve into greater complexity (Lubbe & Puth 1994: 44)

2.3.5 Adaptability

The systems theory emphasises the dynamic nature of systems, concentrating upon emerging processes rather than static structures. Open systems change and adapt because of their interaction with their environments. These systems respond to environmental conditions, but they also engage actively with the environment (Lubbe & Puth 1994: 44).

2.3.6 Stability and Flexibility

Koestler (1978) believes that the most important properties of systems stem from their hierarchic nature, by being a whole and a part at once. He states that every system possesses two tendencies: an integrative tendency to function as part of the larger whole, and a self-assertive tendency to preserve its individual autonomy.

2.4   OPEN AND CLOSED SYSTEMS

The systems theory distinguishes between open and closed systems. A closed system is isolated and can only react on change within the system. There is no possible influence on the environment. In contrast, the open system is receptive

of inputs of the environment and as a result, conditions within the system are also influenced by influences from outside (Marais 1979: 156).

2.4.1 Open systems

2.4.1.1   Open systems: the organismic model

In open systems, units within an organisation affect and are affected by other units and the organisation as a whole is responsive to environmental change. According to Katz and Khan (1978: 32), organisations are open social systems with emphasis on two aspects (a) system character where movement in one part leads to movement in other parts in predictable fashion and (b) openness to environmental inputs, so that they are constantly in a state of flux.

Organisations are open systems that are formed by the relatively stable interaction patterns of their members. The interaction patterns are the products of communication, which is an essential component of organisational functioning and not an independent variable.

An open system is one that receives content and energy from its environment and also send content and energy to its environment. The open system is focussed on life and growth. Biological, psychological and social systems follow an open model (Littlejohn 1983: 35).

The key elements of open systems according to Katz and Khan (1978: 32) are:
- Input: without which a system runs down (entropy). These inputs can be the system's own output (for example money) or from the wider environment outside the system.
- Throughput (or transformation): the process of transforming inputs into outputs (for example making a product).

- Output: whatever the system eventually produces (for example the end product).
- Interrelationship or interdependence: "the interlocking relationship between the parts of a system and the whole system".
- Transactional relationship with the environment: the environment is not constant and must be under continual investigation.
- Boundaries: both connect and separate the organisation from it's environment (Gregory 1999 (a): 267).

An open system receives input from the environment that impacts on its ideal or desired goal states (or objectives). In response feedback from within the system causes adjustments in the system's structure (what it is) and its processes (what it does). Externally, outputs may maintain or change the environment. In organismic systems the objective is survival, but to achieve this they have to adjust to maintain balance within themselves and with their environments (Gregory 1999 (a): 268).

Homeostasis is the term that refers to relatively stable goal states that nevertheless can change as a result of system input. Organismic systems exert some impact on their environment by monitoring it to predict and influence change. This theory has its origins in biological advances and reflects aspects of Darwinian thinking (Gregory 1999 (a): 268).

2.4.1.2   Open systems: the adaptive model

This system drew heavily on the field of cybernetic research and lay particular emphasis on the role of adaptive feedback being actively sought in order to initiate purposeful change. The focus is on exploring how the system itself changes. An adaptive organisation is not static but "emerges from a network of interactions among individuals in which information is selectively perceived and

interpreted in accordance with the meaning it holds for the actors involved"
(Gregory 1999: 268).

2.4.2 Mechanistic or closed systems

Early in the development of management theory mechanistic or closed systems
concepts were used to understand effective management.   These theories
focused on how to manage a unit in an organisation itself without considering
relationships with other units or with organisations' environment (Gregory 1999:
267).

These systems were concerned more with the internal workings of the
organisation and paid little attention to external environmental matters.   In a
closed system there are no interaction. It moves to progressive internal chaos.
The clos ed system -model is often applicable to a physical system.

Angelopulo (in Lubbe & Puth 1994) uses the terms "introverted" and
"extroverted".   Introversion is the perception of a system as one which is
predisposed to operate as a static whole which remains unchanged through time,
as a fixed structure, and with an emphasis upon the importance of internal
phenomena in the relationship of the system with its environment. Extroversion
is perception of a system as one that is predisposed to operate as an adaptable
part of a larger system, with an emphasis upon the importance of the
environment in the system-environment relationship.

According to Ritzer (1992: 519), the three types of systems also differ in the
extent that they are open or closed, that is, the degree of interaction with aspects
of the larger environment. An open system tends to be better to selectively react
to a larger variety and detail of variety of the environment. Mechanical systems
tend towards being closed, organic systems more open and socio-cultural
systems the most open of the three.

Closed systems do not exchange energy, content or information with the environment. Open systems, on the other hand, move outside of its borders to the surrounding environment (Turner 1991: 120).

The comprehension of equal finality is of importance here. It refers to the fact that the condition of a system on a given moment is rather independent of the organisation of the elements at the start. Equal finality is more typical of an open system than a closed system (Marais 1979: 156).

2.5   COMMUNICATION AS A PROCESS

Most definitions of communication explicitly or implicitly state that communication is a *process*. Process implies movement, change and the interaction between parts of the whole. These meanings cannot be related to the fixed description of communication as transmitter, message, medium and receiver.   Systems approach can be said to be an attempt to clear the idea of communication as a process (Marais 1979: 155).

Recent trends indicate a clear shift in preference in using the term corporate communication rather than the traditional public relations. The latter term suffers from negative associations with the way in which the function was practised in the past.   Modern definitions of the function indicate that three key terms represent the essence of corporate communication as a management function. It applies to all kinds of organisations; it entails the management of communication between an organisation and its internal and external stakeholders; and being a management function, it is far more that a mere collection of communication techniques (Steyn & Puth 2000: 6).

In this research the term communication and public relations are used inter-changeably, although the preference is for the term communication.

The systems approach is one of the most fruitful approaches to public relations management. It offers a framework that places the public relations processes and tasks logically within the ambit of the organisation's operations. The approach illuminates the part which public relations plays in the effective operation of the organisation (Lubbe & Puth 1994).

In applying the systems approach to public relations, the public relations practitioner and management accept certain systemic properties of organisations and their operations.

The relatively stable interaction patterns of organisations, their overt manifestations and underlying determinants, are the products of communication, of the sharing of certain meanings. It is by communication that co-ordinate behaviour, control, the definition of tasks and goals, the measurement of their attainment, and informal operations are made possible. Communication is not an independent variable, but rather the essential component of organisational functioning (Lubbe & Puth 1994).

The organisation is a group of individuals who share meaning regarding specific objectives. The variance of their interpretation of certain organisation-related symbols is minimal; constraint exists in the intention; behaviour and goals associated with those symbols.

The nature of each organisation is determined by its culture, which comprises the values, beliefs, perceptions, and behavioural norms which exists within the organisation, and not by its formal rules, authority and rational structures. Manifest behaviour and the organisation's artifacts are distinguished from the assumptions which precedes them (Lubbe & Puth 1994).

2.6   THE SYSTEMS APPROACH AND ENVIRONMENTAL SCANNING

According to Gould (1977: 90) "Extinction is the fate of most species, usually because they fail to adapt rapidly enough to changing conditions of climate and competition."

Gould's (1977) essay on evolution repeatedly conveys the same message. Organisms that cannot change fast enough to cope with rapid environmental change or competition will become extinct.

Social organisations often behave in ways similar to biological organisms. As the changes occurring around us seemingly accelerate, it is imperative that we carefully monitor the major trends that may affect us and evaluate appropriate strategies of adaptation. If we do not heed the futurists and attempt to adapt, we are destined, like the dinosaur, to become extinct (Gould 1977: 91).

Organisations should know that they are heeding for a crises if the speed of change inside the organisation is slower than the speed of change outside the organisation.

It has been noted that the organisation which has the greatest potential for ongoing success in the exchange of values with the environment is one that interacts actively with its environment for the mutual benefit of both organization and environment. Such organisations can be described as actively outward orientated. Because this condition is a state of being, it is possible that it could exist without the active intervention of a facilitating agent. Without such an agent, however, it is possible that management and staff would pursue objectives closely aligned to their specific organisational functions, and ignore those related to a holistic organisational policy (Lubbe & Puth 1994).

The degree to which the organisation is actively outward orientated depends largely on the extent to which management and the public relations personnel perceive their organisation to be a whole comprising parts which are hierarchically ordered, which works towards certain ends, is relatively open to its environment, and is adaptable (Lubbe & Puth 1994).

A systems approach implies an understanding of the "glue" which holds organisational systems together – the communication process and the underlying culture that exists within the organisation. Because public relations from this perspective incorporates aspects such as assimilation and dissemination of information, change and involvement with extremely complex phenomena such as attributes and values, some understanding of these processes is called for. The public relations practitioner must know the ends towards which the organisation strives – especially those aimed at the attainment of environmentally sources values. This implies a close understanding of and interaction with management (Lubbe & Puth 1994).

According to Morrison & Renfro (1984: 49) given the accelerating pace of change, planners and the organisations they serve found that, increasingly, emerging issues in the outside world had a **greater** impact on the organisation's future than internal issues.

The four systems concepts of input, throughput, output and feedback are also relevant to understanding the relationship between systems theory and environmental scanning. The contribution of corporate communication mostly focused on the throughput and output phase. Input (research, including environmental scanning) on strategic level was missing in the past.

In relating these concepts to corporate communication, information (**input**) can be obtained by doing research (such as environmental scanning) in order to

identify problems or issues that can create consequences for the organisation. This information is mostly obtained from the external environment.

This is the role of the communication strategist and enables the communication department to make a contribution on organisational level (strategically) and not only on departmental level.

In the **throughput phase** the corporate communication strategist becomes more involved in strategic intelligence. This includes analysis and interpretation of information; the dissemination of strategic information to relevant players and thereby participating in the strategic management process. The information is then analysed and solutions to problems are formulated by setting corporate communication goals and deciding upon communication activities.

In the **output phase,** practitioners behave by doing something, e.g. write a press release.

In conceptualising a strategic role for the communication professional and department, it is suggested that the systems approach to corporate communication is broadened in order that corporate communication become more deeply involved in the organisation's information acquisition phase (input) through environmental scanning. Furthermore that throughput is extended to include analysis and interpretation of information, and dissemination of strategic intelligence to relevant players, thereby participating in the strategic management process.

The environment of an organisation is composed of all the forces external to the firm that directly or indirectly influence its operation and which, in turn, may be influenced by the organisation. Organisations as open systems collect and process information about the external environment on which to base organisational actions (Daft & Weick 1984: 284).

The correct use and application of environmental scanning can be used as an answer to organisations to deal with change and the impact thereof on the company. Environmental scanning is a process by which an organisation learns about events and trends in the internal and external environment.   It helps establishes relationships between these trends and considers the main applications for problem identification and decision making.

2.7   CONCLUSION

In Chapter Two the theories used as framework for this study were discussed. The systems theory and the information gap theory provide the theoretical base for this research.

The systems theory states that organisations are effective when they survive in their environment and successfully bring in resources necessary for their survival. The systems theory, therefore, adds the environment to the equation of organisational effectiveness, but it is limited because survival is a weak goal. The systems theory also defines the environment in vague terms. It does not answer the question of how an organisation determines what elements of the environment are important for its success (Grunig & Huang 2000: 31).

It is clear that the fundamentals of environmental scanning link very closely with the idea of the systems theory. Future, financial and technological trend analysis forms part of environmental scanning. These future trends must be incorporated in the planning et cetera of the company or organisation.

In Chapter Three, the development and importance of communication research receives attention. The communication professional and research are also addressed.   The importance and measurement of relationships in communication, reputation management and knowledge management are also discussed.