

# The Systems Theory of Management in Modern Day Organizations - A Study of Aldgate Congress Resort Limited Port Harcourt

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**Abstract-** This paper examines the systems theory of management in modern day organizations with an highlight on an indigenous company based in Port Harcourt. In this work, an introductory perspective was captured to show an understanding of what the systems theory is all about, revealing the input-output model. The paper categorizes the systems theory into two thought areas: the cybernetic and closed systems on one side and the biology and open systems on the other side, and differentiations made. Systems theory focuses on the relations between the parts, rather than reducing an entity into its parts or elements. The organization is considered as a system having integrated parts that must be coordinated for efficiency and effectiveness. The null hypothesis of no relationship between application of system theory of management and organizational success was rejected. The study found that the organization under study adopts systems approach. The study recommends that modern organizations should adapt systems approach to enhance corporate growth and profitability.

**Index Terms-** system, management, organization, technology and firms.

## I. INTRODUCTION

Scientists and philosophers have long wrestled with the problem of how they understand and make sense of our world. There are both descriptive and prescriptive approaches to understanding our world. On the descriptive side, theories of cognition, perception and thinking describe how we humans organize stimuli and make sense out of them. On the prescriptive side, there are two approaches to making sense of the world. The first is reductionism and the other is a systems approach. Reductionism asserts that the best way to understand new phenomena is to study the functioning or properties of its individual parts. For example, the best way to understand the working of the human body would be to break it into its components, (organs, muscles, tissues, bones, and cells) and to study the properties of each element (Miller and Rice, 1967).

Systems theory focuses on the relations between the parts. Rather than reducing an entity such as the human body into its parts or elements (e.g. organs or cells), systems theory focuses on the arrangement of and relations between the parts and how they work together as a whole. The way the parts are organized and how they interact with each other, determines the properties of that system. The behaviour of the system is independent of the

properties of the elements. This often referred to as a holistic approach to understanding phenomena.

Flood and Jackson (1991) define a system as a complex and highly interlinked network of parts exhibiting synergistic properties-the whole is greater than the sum of its parts. It is a collection of interrelated parts acting together to achieve some goal which exists in the environment. Also, system is defined as a set of objects together with relationships between the objects and between their attributes related to each other and to the environment so as to create or form a whole (Schoderbek et al, 1985). Further, Checkland (1981) defines a system as a model of a whole entity, which may be applied to human activity.

With respect to management, system simply refers to a set of different independent parts working together in interrelated manner to accomplish a whole. It is with this essence that synergism appears. For instance, an organisation is formed by different departments, sections, and units composed of individuals and groups which are independent, but working together to achieve a common goal with the aim of turning organizational vision into reality.

This paper is aimed at showcasing the systems theory of management in modern day organizations in Nigeria. This is to be achieved with the study of a key player in the hospitality industry in the city of Port Harcourt – Aldgate Congress Resort Limited.

This paper aims at studying the systems theory of managing organizations. Emphasis has been made on the application of this theory in the management of modern day organizations. For this purpose, a modern day organization based in Port Harcourt was chosen as a case study.

The present day organization is faced with the challenges of adoption of a specific style of management in its day to day operational decision making. These could be seen manifesting in a variation of several management philosophies that has evolved over the years. Theories exist that are drawn from the scientific management school, the classical organization theory school, the behavioural school and the relations theories. Others are the management science school and some recent developments in management theory; the systems approach and the contingency approach respectively.

Over the years transcending down history, organizations have either adopted a particular management model or a combination of models. Whichever model that is adopted, the survivability and maximisation of profit is often a key objective for operations. This paper is out to uncover the level of the application of systems theory in the running of modern day

organizations. This is borne out of the reality that this theory is one amongst many models. Its numerous benefits when applied is factorial to any organization's growth and therefore has necessitated a study of this nature.

## II. STATEMENT OF THE PROBLEM

The management of organizations in Nigeria vary in approach, style and content from one organization to another. Each organization decides on a particular line of management to implement what it finds suitable to its objectives. Sometimes, management styles, not easily discernable and definable are seen operational in some organizations. This is mostly prevalent in organizations owned by individuals or family members.

However, the emphasis of this research is on the management of modern day organizations through the application of the systems theory of management. There is a general tendency for concepts and management approaches to change with time. Within a modern day organizational framework, contemporary management issues in the likes of the way to manage, is a key decision making factor. Is systems approach to management being applied in modern day organizations? Are there issues arising from the adoption of this systems theory to management? This and many more posers are what this research is out to provide answers to.

## III. OBJECTIVES OF THE STUDY

Indigenous organizations are subjects of a variety of management models which sometimes, are not premised on any professional and categorically established study. It is however observed that while some are moving the shore of the business world with growth and success, others are finding survivability, a huge mirage. The reasons for these differences are not farfetched. Wrong business decisions manifesting in the inability to forecast appropriately, adoption of an inappropriate management style, investing wrongly and the application of weak cost and internal control measures are some of the factors responsible for business stagnation and non survivability.

This paper is objectively geared at showing an understanding of what the systems theory is all about, its application in management, especially with modern day organizations. The import of organizational management with the systems theory and practises are examined. Its relevance in modern day organizations vis-a-vis other contemporary management theories are also discussed.

## IV. THEORETICAL FRAMEWORK

The work of Ludwing Von Bertalanffy (1973) recognized the need of any organization to interact with its external environment, unlike what was proposed by classical school theorists like Max Weber, F. Taylor and Fayol who viewed organization as closed system. To him, for survival of an organization like the way living organism survives, should operate in open system and not closed system. This is what made his work to make system concepts become recognized world-wide as approach to be adapted by organization for their

efficiency and effectiveness in the dynamic and changing environments.

He was against reductionism, arguing that, real system are open and do interact with external environment, where he emphasized on holism while solving organization problems.

Therefore, open system changed the way of thinking about organizational management from mechanical view of organization. It looks at management as an open-ended process. It emphasized detachment, objectivity and control. Today organizations are perceived as an open ended process of coordinating purposeful individuals whose actions stem from applying their unique interpretations to the particular situations confronting them. For instance, in current situation, an organization which will not be sensitive to its environment will hardly survive. Things like technology, social and economic phenomena are not static but are always changing, hence organizations are needed to adopt in order to survive.

It is also through interaction with its external environment the organization gets its inputs in term of raw material, labour and process them, and lastly emits as output to its environment for selling or capital investment. Take example of Aldgate Congress Resort Ltd., it gets its raw materials from environment and also sells its products to the same environment, and through feedback it adjusts itself in order to meet the requirement of its customers, and hence survival.

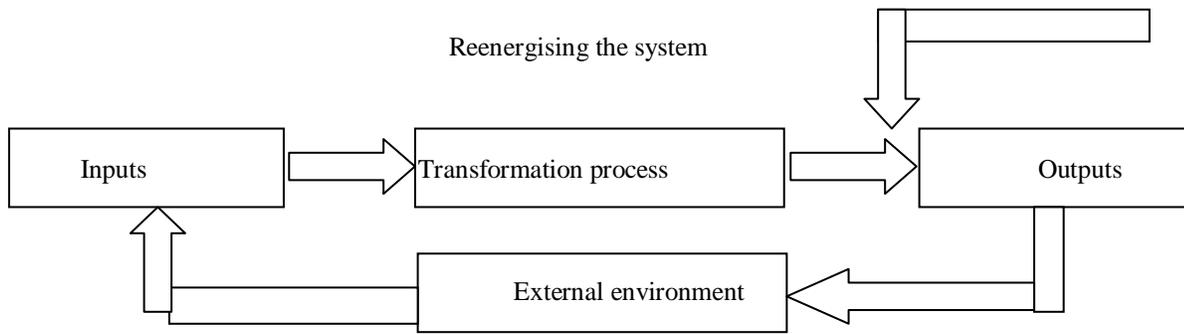
## V. LITERATURE REVIEW

A profuse body of knowledge exists in this field of systems theory. There have been several published studies on systems theory in management. This wealth of knowledge amassed through theoretical postulations and vigorous empirical investigations have helped in directing the attention of researchers towards conceptualizing how it has helped in boosting organizational growth through its application.

## VI. UNDERSTANDING SYSTEMS THEORY

Organizational management systems consist of many internal subsystems that need to be continually aligned with each other. As companies grow, they develop more and more complex subsystems that must coordinate with each other in the process of transforming inputs to outputs (McShane and Von Glinow, 2003). These interdependencies can easily become so complex that a minor event in one subsystem may amplify into serious unintended consequences elsewhere in the organization.

Every organized enterprise does not exist in a vacuum. It is rather known to depend on its external environment – which is a part of a larger system, such as the industry to which it belongs, the economic system and the society (Weihrich et al, 2008). According to them, the organization receives inputs, transforms them and exports the outputs to the environment as shown in the basic input-output model below.



**Fig.2.1: Input – output model**

Source: Wehrich, et al (2008).

In their own opinion, the above model requires expansion and development into a model of process, or operational management that indicates how the various inputs are formed through the managerial functions of planning, organizing, staffing, leading and controlling. However, the following sub topics are the basic components of a system.

**i) Inputs -**

The composition of inputs from the external environment may include people, capital, managerial skills as well as technical knowledge of skills. It also includes the various claimants – groups of people making demands on the organization; such as employees, consumers, suppliers, stockholders, federal, state and local governments.

**ii) Transformation process –**

In an organizational system, inputs are transformed in an effective and efficient manner into outputs. This can be viewed from different perspectives. Focus can be on such management functions as finance, production, personnel and marketing.

**iii) External variable –**

As a component of the systems model, the external environment plays a key role in the transformation of inputs into outputs. While it is true that organizations have little or no power to change the external environment, they have no alternative but to respond to it.

**iv) Outputs –**

Inputs are secured and utilized by transformation through the managerial functions – with due consideration for external variables into outputs. Outputs of different kinds vary with the organization. They usually include many of the following; products, services, profits, satisfaction and integration of the goals of various claimants to the organization.

**v) Reenergizing the system –**

It is worthy of note that in the systems model of management process, some of the outputs become inputs again. Apparently, the satisfaction and new knowledge or skills of employees become important human inputs. Similarly, profits are reinvested in cash and capital goods, such as machinery, equipment, buildings and inventory.

Buttressing what Wehrich et al had written, Amobi and Nnabuiife (1999), revealed that the systems theory has been likened by many management experts to the three – part production process of an organizational activity. They revealed

that Katz and Kahn in their analysis of the basic properties of an organization had also identified the input – throughout – output process.

## VII. TYPES OF SYSTEMS

### 1) Cybernetics and closed systems thinking:

The field of cybernetics exemplifies the modern version of closed systems thinking and it is attributed to the work of Norbert Wiener.

In 1949, Norbert Wiener, a distinguished mathematician and engineer at MIT (Massachusetts Institute of Technology) discovered this over lunch with a colleague who was a neurosurgeon. The development of the field of Cybernetics allowed diverse disciplines to communicate about their problems in the common language of systems theory. More importantly, it allowed a common set of principles to be applied to problems of control and regulation. It has been seen that the principles of system design that allowed ancient mariners to steer ships with “governors” were the same principles that allowed mechanical engineers to design thermostats for air-conditioning units, industrial engineers to control product quality, astronomers to describe the behaviour of planets, and accountants to design budgetary control systems. These systems can be seen as returning to equilibrium after being disturbed by regulating themselves through feedback information.

The cybernetic closed systems model is the intellectual base for traditional cost and quality management approaches. Another key idea in closed systems is the increase in entropy or the tendency to maximum disorder. This is because the system is closed to the environment and has no ability to import energy to counteract the growth in entropy. This view, exemplified by the second law of thermodynamics, means that closed systems will inevitably tend to breakdown from an increase in entropy.

### 2) Biology and open systems thinking:

Open systems theory has its foundations in biology, particularly Darwin's work on the evolution of the species. The popular version of open systems theory is attributed to Ludwig Von Bertalanffy who used the term ‘general systems theory’ to describe the main ideas and to distinguish them from closed systems thinking. Bertalanffy maintained that closed systems thinking was not appropriate to study biological phenomena

because biological systems interact with their environment, grow and survive. However, the environment of living organisms is less forgiving and often the luxury to learn from errors does not exist.

There are **four main differences** between closed and open systems theory. Each difference is discussed below.

**1. Relations with the external environment.** Open systems theory focuses on the interchange between a system and its environment. Biological organisms are open systems because they constantly evolve and adapt to the needs of their environment. Their behaviour is a response to the threats and resources available in the environment in which they exist.

**2. Variables considered.** A second area, which differentiates open and closed systems thinking, is the number of variables included. A closed system has a few variables. An open system typically deals with a more complex set of interrelationships. Cost and quality, viewed from a closed systems perspective, are internal variables that need to be managed within the boundaries of a firm. In an open system, cost and quality are viewed as externally driven variables that must be managed by understanding the environmental influences on these variables.

**3. Form of regulation or control.** As shown in Figure 1, closed systems use error-controlled regulation. This is control after-the-fact. Open systems use anticipatory control. They are regulated by anticipating errors before they occur and taking corrective measures before final output. Like a mouse, open systems anticipate a cat's next move. Waiting for feedback from errors is usually fatal. This form of regulation is called 'feed forward' control. If cost is to be managed as an open system, it should be controlled before a product is produced and not after.

**4. Purpose of Regulation.** Unlike closed systems, open systems are not interested in returning a system back to some predetermined stable state. They recognize that the purpose of regulation is to adjust and move the system on a dynamic path. Open systems seek continuous improvement and not just stability. They are said to achieve a dynamic equilibrium. Like living systems, most organizations operate in constant interchange with their environment. They have many complex interactions and interrelationships within their boundaries.

## VIII. SYSTEMS THEORY AND EFFECTIVENESS

In everyday conversation, the term system is used. A variety of meanings and interpretations are given to describe accounting systems, inventory control system, a car's ignition system, an ecological system and the Nigerian tax system. Each system consists of elements or characters that interacts (Gibson et al (1997)). According to them, system theorists propose that systems can be categorized in three ways:

### a. Conceptual systems (a language) -

Organizations use the notion of a system to view their internal and external world and how the parts relate and interact with each other. By viewing the individuals, groups, structure, and process of organizations in terms of a system, organizations are able to identify common and uncommon themes that help explain the behaviour and effectiveness of people. Identification of themes or patterns is important because it helps to explain how

effective an individual, group or entire organization is, in terms of goals (Peterson, 1994).

### b. Concrete systems (machines) –

Systems theory enables us describe an organizations' internal and external behaviour. Internally, it can be seen how and why people inside the organizations perform their individual and group tasks. Externally, an organization's transactions with other organizations and institutions can be assessed. All organizations acquire resources from a larger environment of which they are part of, and in turn, provide the goods and services demanded by the larger environment.

### c. Abstract systems (culture of an organization) -

The organization is one element of a number of elements interacting interdependently. The flow of inputs is the basic starting point in describing the organization. Every organization is part of an industry (a larger system), a society (a yet larger system), and increasingly, a global economy (perhaps the largest system of all).

Systems theory can also describe the behaviour of individuals and groups within an organization. An input (cause) can be processed by an individual mental and psychological process to produce a particular output (outcome).

## IX. SYSTEMS THEORY AND FEEDBACK

According to Gibson et al (1997), the concept of the organization as a system that is related to a larger system, introduces the importance of feedback. Organizations depend on the environment not only for its inputs, but for the acceptance of outputs. Consequently, they must develop means for adjusting to environmental demands. Simply put, feedback refers to information that reflects the outcomes of an act or series of acts by an individual, group or organization.

## X. ORGANIZATION AS A SYSTEM

The classical approach emphasized the technical requirements of the organization and its needs – organization without people; the human relations approaches emphasized the psychological and social aspects, and the consideration of human needs – people without organizations (Mullins L.J., 2005).

Mullins argued that the systems approach attempts to reconcile these two earlier approaches and the work of the formal and informal writers. According to him, attention is focussed on the total work organization and the interrelationships of structure and behaviour, and the range of variables within the organization. This approach can be contrasted with a view of the organization as separate parts. He further revealed that the systems approach encourages organizations to be viewed both as a whole and as part of a larger environment. This implies that any part of an organizational activity affects all other parts.

The business organization is an open system where there is continual interaction with the broader external environment of which it is a part. The systems approach sees the organization within its total environment and emphasizes the importance of multiple channels of interaction. The systems approach views the organization as a whole and involves the study of the organization in terms of the relationship between technical and

social variables within the system. Change in one part, technical or social will affect other parts and thus the whole system.

The organization is seen as being made up of interrelated parts known as subsystems. These subsystems work together to contribute to the survival and success of the entire organization.

The system concept and its application in modern day management is a key concept of systems science. According to Von Bertalanffy (1968), the term system implies a set of elements standing in interactions. He defined system as complexes of elements standing in interaction, expressed in different forms. It is a set of activities (functions) that are connected both in time and space by a set of decision-making and behaviour evaluation (that is control) practice (Hall & Fagen, 1956).

Waring (1996) defines a system at a simple level as a recognisable whole, which consists of a number of parts (called components) that are connected up in an organised way (the system's structure). These components interact, that is, there are processes going on. This basic description covers the popular idea of interconnected parts and processes as in the central heating system. It is further argued that, system approach to management implies the application of systems ideas such as emergence and hierarchy (layered structure), communication and control to address problem situations (Jackson, 1995).

#### QUALITIES OF AN IDEAL SYSTEM

According to Harry (1990) the following elements are indicators of a quality system:

**a) Components:** A system consists of more than one part called component elements of a system. A component refers to anything that is part of a system or sub-system. The term element implies the smaller components that one would wish to identify separately. Organization of a system is the specification of relations between its elements.

**b) Connection:** These components of a system are connected together.

**c) Structure:** The form of this connection is fixed in an organized way called structure. The concepts of structure and organization become more interesting in large systems, where more than just one or two possible structures or organizations may be considered.

**d) Interaction:** The components affect each other by their presence in or removal from the system which results from mutual interaction with the systems environment.

**e) Process:** the changes resulting from these interactions are called processes.

**f) Holism and emergent properties:** A system is a whole which exhibits properties which only have meaning in terms of the interactive processes of its components.

**g) Identity:** The properties of a system that enable it to be identified and separated from other things which are not part of the system.

**h) Environment:** There are things which are not part of the system, which significantly affect it, but which the system can only marginally influence, called the environment of the system.

**i) Conceptualization:** a system is a concept whose particular form reflects the aims and values of the individual or group whose concept it is (Harry, 1990).

Like living systems, most organizations if not all, operate in constant interchange with their environment. They have many complex interactions and interrelationships within their boundaries. To survive, organizations must grow and achieve a dynamic equilibrium rather than simply return to a steady state. It is for these reasons that general systems theory has come to be applied to the study of organizational phenomena such as design of management planning and control systems.

#### XI. HYPOTHESIS

In investigating the systems theory of management in modern day organizations, the following hypothesis is posited:

- 1) Ho – There is no relationship between application of systems theory of management and organizational success.
- 2) Ha – There is a significant relationship between application of systems theory of management and organizational success.

#### Research Methodology:

The study adopts the exploration and survey methods to carry out the research.

A preliminary survey of an organization in Port Harcourt that is seen to be composed of subsystems and interrelated parts is made. A survey involves the use of a representative sample of the population for the study and using the results to generalize for the population. It has been identified by Aaker and Day (1980) to have the advantage of being versatile and therefore amenable to virtually every setting and to research objectives whether a descriptive or casual design. It is also a veritable tool in collecting a great deal of data about an individual or organization at one time.

Matters arising from the systems theory of management in modern day organizations have been looked into to ascertain their degree of adoption and benefits to the organization, individual, group and society at large. Historical trends have been followed to show the level of systems theory application that have manifested over time.

#### Study Population and Sampling:

The study population was drawn from a list of three (3) variegated departments within the study organization in Port Harcourt. This would be extracted, and would serve as the study population.

Based on the responses obtained from the preliminary survey, only those respondents that consent to applying the systems theory of management would be selected as the sample size for the second stage of the research which is also the main study.

#### Respondents of the Study:

The analysis of the questionnaire and the interpretations that follow were simple, clear and logical. A total number of thirty (30) questionnaires were administered. Distribution on each of the three major departments was based on accessibility. The tabulated analysis of the total number of questionnaire administered and the percentage degree of responses is shown in table below.

**Table .Distribution / and collection of the questionnaire:**

| Departments      | Questionnaires Administered | Questionnaires Retrieved | % Respondents |
|------------------|-----------------------------|--------------------------|---------------|
| Administration   | 10                          | 8                        | 80            |
| Food & Beverages | 10                          | 9                        | 90            |
| Housekeeping     | 10                          | 9                        | 90            |
| <b>TOTAL</b>     | <b>30</b>                   | <b>26</b>                | <b>87</b>     |

From the table, it could be seen that the instrument administered recorded various degrees of success based on the concerned departments of the subject organization. While an 80% retrieval success was recorded from the administration department, a 90% respondent level was recorded for department of food and beverages. The recorded respondent levels for the housekeeping department were at 90%.

## XII. FINDINGS AND DISCUSSIONS

This section is aimed at presenting the findings of this paper work and also to relay discussions bothering on the subject matter – the system theory of management in modern day organization (A case study of Aldgate Congress Resort Limited, Port Harcourt).

### Findings:

Investigations reveal that the system theory of management is relatively in practice in Aldgate Congress Resort Limited. The organization as a system has a composition of subsystems that make up the whole system. These are seen in the departmentalization / sectionalisation of the system. Each subsystem is supervised by a head of department who controls and coordinates every activity of that department. He in turn reports to a manager who is in charge of the system as a whole. An observable relationship exists among the subsystems revealing that the components of the systems are connected together. For instance, the subsystems are seen in the likes of the following departments: front office, food and beverage, housekeeping, marketing and accounts.

At the organization of study, the connection among subsystems is fixed in an organized way and is structurally made explicit. The practise of the system theory in this organization is instrumental to the formal flow of communication by which the organization is operationally manned. It has been observed also that the success (surpluses) recorded in both monthly and annual statement of accounts can be partially attributed to the adoption of the systems theory in the management of the organization. This theory has been noted to strike a balance between the classical approach and the human relation approach of management in an organization.

Another veritable findings made at Aldgate Congress Resort is that the organization as a whole was seen as a subsystem of a larger system. It regularly made interactions with other subsystems (of its kind), complementing efforts of each other in the larger system context.

### Discussions:

This study has shown that even while the systems theory is of been practised in the organization of case study, certain issues, challenges and prospects have cropped up in the course of its application. These have contributed immensely to the recommendations that are made in section iv of this paper.

Bureaucratic applications on operations were observed to be fundamental elements of the systems theory in Aldgate Congress Resort. Because of its structured and systemized nature, issues relating to daily operations are subjected to bureaucratic functions. This sometimes leads to lost man hours which encourages losses if not strictly monitored.

There is also the issue of contingency or situational decision making bothering on the prevalent situation. Since the organization has a private ownership of 100%, it was discovered that decision making is most at times centralized. Strategic decisions and policy formulations are principally in the hands of the chief executive. Situational forces were seen to be responsible for the decisions that regulate the system without recourse to the essentials of policy formulation. This contingency approach co opted into the systems theory manifests in a dual feedback system. At one end of the pole, it tremendously salvages situations that would probably have represented the organization negatively in the larger system. However, at the other end of the pole, it could lead to operational drawbacks if wrongly presented and interpreted.

## XIII. SUMMARY, CONCLUSION AND RECOMMENDATIONS

### Summary

Like living systems, most organizations if not all, operate in constant interchange with their environment. They have many complex interactions and interrelationships within their boundaries. To survive, organizations must grow and achieve a dynamic equilibrium rather than simply return to a steady state. It is for these reasons that general systems theory has come to be applied to the study of organizational phenomena. However in this paper work, we have looked into its application in a modern day indigenous organization.

### Conclusion

In conclusion, Systems Theory is an abstract philosophical framework that nonetheless entails a highly empirical and investigative form of management science. Systems Theory suggests an evolutionary explanation for the dominance of management in contemporary society. It also clarifies the role of complex organisations in modern society; and predicts that the complexity of organisations, and therefore the role of management, will probably continue to increase – at least for so long as the efficiency-enhancing potential of complexity can continue to outweigh its inevitably increased transaction costs.

### Recommendations

The systems theory of management in modern day organizations is a veritable scholarly tool for the academic world. It fosters additional management knowledge to the business world thereby increasing the survivability and profitability ratios of these organizations.

In the light of the conceptual work done on this subject matter, the following recommendations are hereby made for modern day organizations in particular and the business world in general on issues bothering on the adoption of the systems theory in management.

1) For corporate growth and profitability, modern day indigenous organizations should manage their organizations applying the systems theory of management. This is because of its bridging ability and interfacing strength in the classical and human relations approaches to managing organizations.

2) The structured nature of the systems theory enables the organization to function effectively without much friction. Chains of command and lines of authority are clearly spelt out because of the inevitable subsisting relationships between subsystems. Recommendation is hereby made for organizations to adopt the systems approach to guarantee orderliness and constancy of operations.

3) Because of the element of contingency that crops up in daily organizational management and which is evident in the organization of study, it is recommended that modern day managers should apply a "systency approach" to the management of their outfits. This terminology of ours implies the management of an organization using the systems and contingency approaches simultaneously. Their ratio of effective application is a function of the manager's decision and situational forces surrounding the manager at that point in time.

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