

## Systems Theory and Systems Approach to Leadership

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### Abstract

Systems theory is product of the efforts of many researchers to create an intermediate field of coexistence of all sciences. If not for anything else, because of the magnitude that the use of systemic thinking and systemic approach has taken, it has become undisputed among the theories. Systems theory not only provides a glossary of terms with which researchers from different fields can be understood, but provides a framework for the presentation and interpretation of phenomena and realities. This paper addresses a systematic approach to leadership, as an attempt to dredge leadership and systems theory literature to find the meeting point. Systems approach is not an approach to leadership in terms of a manner of leader's work, but it's the leader's determination to factorize in his leadership the external environment and relationships with and among elements. Leader without followers is unable to exercise his leadership and to ensure their conviction he should provide a system, a structure, a purpose, despite the alternative chaos. Systems approach clarifies the thought on the complexity and dynamism of the environment and provides a framework for building ideas. If the general system theory is the skeleton of science (Boulding: 1956), this article aims to replenish it with leadership muscles by prominent authors who have written on systems theory and leadership, as well as through original ideas.

In this work analytical methods were used (by analyzing approaches individually) as well as synthetic methods (by assaying individual approaches in context of entirety). The work is a critical review of literature as well as a deductive analysis mingled with models proposed by authors through inductive analysis. Meta-analysis has been used to dissect the interaction and interdependence between leadership approaches.

**Keywords:** General Systems Theory, Systems Approach, Management, Leadership, Situational Approach, Transformational Leadership, Transactional Leadership

### **1. From general system theory to systems approach**

General systems theory finds multidisciplinary use and has an attribute of universality. Ludwig von Bertalanffy and Kenneth Boulding have written articles that have created the modern basis for general systems theory (Johnson et al.: 1964). General systems theory is a name which has come into use to describe a level theoretical model-building which lies somewhere between the highly generalized constructions of pure mathematics and the specific theories of specialized disciplines (Boulding: 1956). Kenneth Boulding, one of the most cited authors (2203 citations in Google Scholar) on the topic of general systems theory gives this definition for systematic interdisciplinary approach:

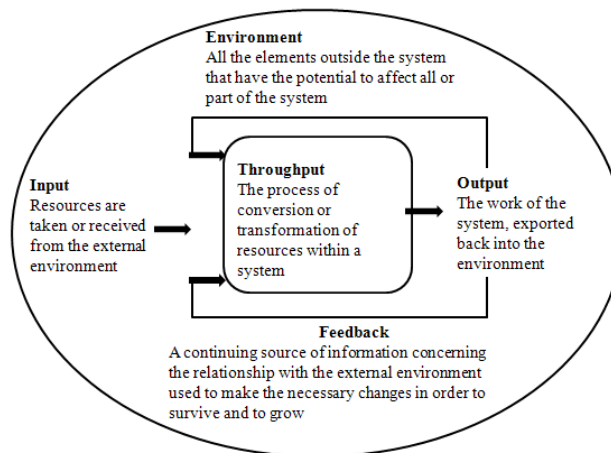
A phenomenon for almost universal significance for all disciplines is that of the interaction of an 'individual' of some kind with its environment. Each discipline studies some kind of "individual" - electron, atom, molecule, crystal, virus, cell, man, family, corporation, and so on. Each of these individuals exhibits "behavior", action or change, and this behavior is considered to be related in some way to the environment of the individual - that is, with other individuals with which it comes into contact or into some relationship (Boulding: 1956).

Traditional theory viewed organization as closed systems (Houghteling: 2006). With systems approach organizations take the feature of open systems. An open system, as are organizations, must change in order to maintain itself in a dynamic environment. Receiving input from the environment is essential if an organization is to be able to respond effectively to its ever-changing environment (Houghteling: 2006). Bertalanffy's idea that organizations are open systems quickly transferred

to other disciplines in the manner of general system theory (Jackson 1991). Building on the general theory of systems, different approaches have been developed such as open system theory, viable system model and viable system approach (Mele et al.: 2009). By the 1960s the concept of open systems had begun to get fully adopted by organizational theory (Jackson 1991).

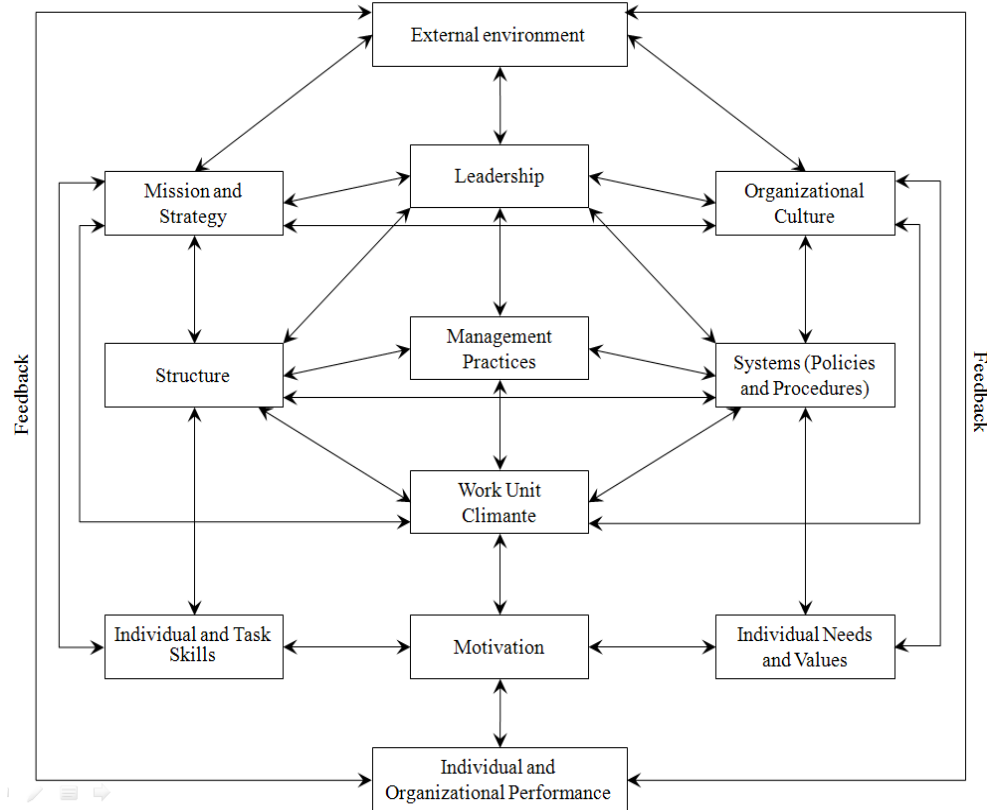
In their book of 1966 *The Social Psychology of Organizations*, Katz and Kahn integrate the notion of open systems in their studies (Jackson 1991). Katz and Kahn have developed a model (Figure 1) for the interpretation of organizational actions in terms of input, throughput and output (Hassard: 1993). Model factorizes the environment in functioning of the system and therefore it is the building block for open system theory.

**Figure 1:** Katz and Kahn Open System Model



**Source:** Katz and Kahn (1978).

Another description of the organization as a system is model-Burke Letwin (Tate 2009). The model departs from the mentality of the general systems theory, primarily with the Katz and Kahn input-throughput-output model. The external environment is the input, individual and organizational performance is the output, while the throughput or the process according to general systems theory contains other organizational variables (Burke and Litwin: 1992).

**Figure 2: Burke-Litwin Model**

**Source:** Burke and Litwin (1992).

Acceptance of the idea that the relations between elements and interaction with the environment are determining for the organization is the first step in the appropriation of systems approach. This model puts the organization in a model that puts into surface the contribution of systems theory to the theory of management, as well as the applicability of the principles of systems in organizational practices.

Benefits that systems approach or systems view brings to the organizations are:

1. it forces managers to view their organizations as part of and subject to the competitive, economic, social, technological, and legal/regulatory forces in their environments;

2. it forces managers to be aware of how the environment affects specific parts of the organization;
3. because of the complexity and difficulty of trying to achieve synergies between different parts of the organization, the systems view encourages managers to focus on better communication and cooperation within the organization;
4. it makes managers acutely aware that good internal management of the organization may not be enough to ensure survival. (Williams: 2010).

Although in original these four systems approach advantages were attributed to the manager, they can easily be translated into the work of the leader. The leader in various situations cannot isolate himself from events and factors in the workplace, in the organizational environment, or even external factors. Communication and cooperation are two of the tools that are used by the leader in embedding of vision to followers and motivate them to implement the goals of the organization. The leader is successful if he, with the team, achieves the aim for which he was entrusted the leadership for, or has taken the initiative himself. Parameters of success in most cases are not defined by the leader himself, but other people within and outside the organization, whether the board of directors, top management or external agents with interests in the organization. The aim of systems theory for business is to develop an objective, understandable environment for decision making; that is, if the system within which managers make the decisions can be provided as an explicit framework, then such decision making should be easier to handle. (Johnson et al.: 1964).

Five reasons or benefits of using systems theory are:

- systems theory is approached when one wants to study in a complex, open ended setting, where there are many unpredictable variables at work;
- systems theory is useful in providing a framework in which one studies complex variables influencing one another;
- systems theory has the ability to show the complex web of relationships in operation as a system moves toward its goals;
- systems theory is not limited historically as it can be used to help make meaningful predictions about what can be reasonably expected in the future;

- systems theory has survived the test of time and remains a viable theory used by a cross section of academe (Covington and Covington Jr.: 1998).

There is a stream of thought that neutralizes the importance of systems theory even removing its label of theory. The most prominent voice of this idea is Harold Koontz. In an article entitled *The Management Theory Jungle Revisited* he writes: "When systems theory was introduced into the management field some two decades ago, it was hailed as being a new way of analyzing and classifying management knowledge. But in recent years, as people have come to understand systems theory and the job of managing better, it has become increasingly clear that, in its essentials, there is little new about systems theory and that practicing managers as well as operational theorists had been using its basics (although not always the jargon) for a number of years" (Koontz: 1980). Koontz goes further by defining it as a tendency towards "convergence of theories" the recognition that systems theory is not a particular approach.

## **2. Systems approach in management and leadership**

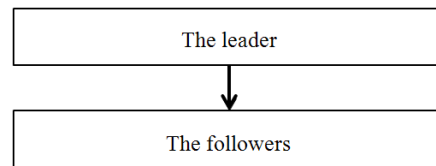
System approach in management is based on general systems theory (Certo and Certo: 2012). System approach is in harmony with the management theory; moreover it is indispensable for an author in the field of management to disregard the system thinking. Likewise, systems approach is discussed in leadership studies. Harvard Business School Professor John Kotter sees management and leadership as complementary systems of action. The difference is that management is about coping with complexity, leadership is about coping with change (Kotter: 2001).

Systems approach helps the leader manager to translate his awareness of the complexity of the organization and intensity of its interaction with the environment into a guide for successful leadership in terms of permanent requirements for change versus resistance to them and trying to influence the environment which exercises influence on the organization itself. For Williams (2010) systems approach is a way to deal with organizational and environmental complexity within and outside organizations. The systems approach tends to view the corporation in information flow terms and the leader in technical, procedural terms (Fairholm and Fairholm: 2009). A pragmatic definition of the system used in the field of management, states

that the system is an organized collection of people, machines and material required to achieve a specific goal and tied together by communication links (Skyttner: 2005). Business organization is a system of interrelated parts that work in conjunction with each other in order to accomplish a number of goals, such as those of the organization as well as those of individual participants (Johnson et al.: 1964).

One of the reasons why systems approach "dwells" better onto management other than leadership is hierarchy. The position of a leader in the formal hierarchy is seen as a context element since it serves as a structural source of power and influence (Winkler: 2010). Leadership does not necessarily take place within the hierarchical structure of the organization (Mullins: 2010). Hierarchy is at the foundation of systems theory. Systems theory regards the concept of hierarchy as a universal principle existing in inorganic nature, in organic and social life and in cosmos (Skyttner: 2005). Although leadership is not necessarily linked with the formal hierarchy of the organization, as a relationship it represents a hierarchy (Figure 3). Leadership itself connotes hierarchy between the leader and the led, a differential of authority (Marturano and Gosling: 2008).

**Figure 3:** Leadership hierarchy



**Source:** Marturano and Gosling (2008).

Johnson et al. in an article titled *Theory and Management Systems* published in *Management Science* journal find an analogy for systems theory "by comparing the organization to the human body, with the skeletal and muscle systems representing the operating line elements and the circulatory system as a necessary staff function. The nervous system is the communication system. The brain symbolizes top-level management, or the executive committee. In this sense an organization is represented as a self maintaining structure, one which can reproduce. Such an analysis hints at the type of framework which would be useful as a systems theory for

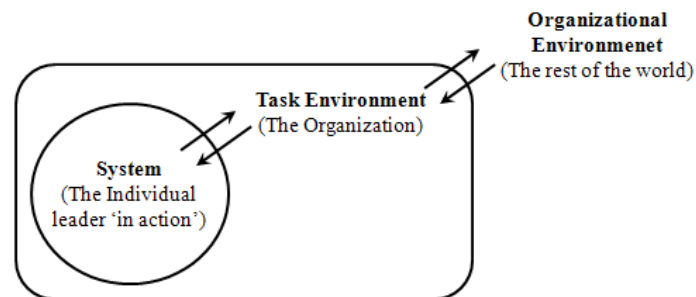
business—one which is developed as a system of systems and that can focus attention at the proper points in the organization for rational decision making, both from the standpoint of the individual and the organization"(Johnson et al: 1964).

### 2.1. Systems approach in leadership

Leadership is a relationship between those who aspire to lead and those who choose to follow (Kouzes and Posner: 2012). Leadership is an interpersonal connection between the leader and the constituents based on mutual needs and interests (Fairholm and Fairholm: 2009). If any of the system definitions is analyzed a likeness is to be noted between system and leadership, superficially at definition level. The system is a collection of interrelated parts that function as a whole to achieve a common goal (Kast and Rosenzweig: 1972). This, perhaps is one of the simplest definitions of system which contains the leadership resemblance in all its length. Leadership as the system has to do with the team, with elements related and interrelated, whose work is oriented towards the goal.

Systems approach to leadership is a holistic approach to leadership and organization development which can be used by any leader at any organizational level to optimize the organization (or part of it ) to create sustainable high performance in conditions of high complexity and uncertainty (Coffey: 2010). Coffey proposes a system model of the leader as a system in relationship with the environment.

**Figure 4:** Leader and organization as system within system

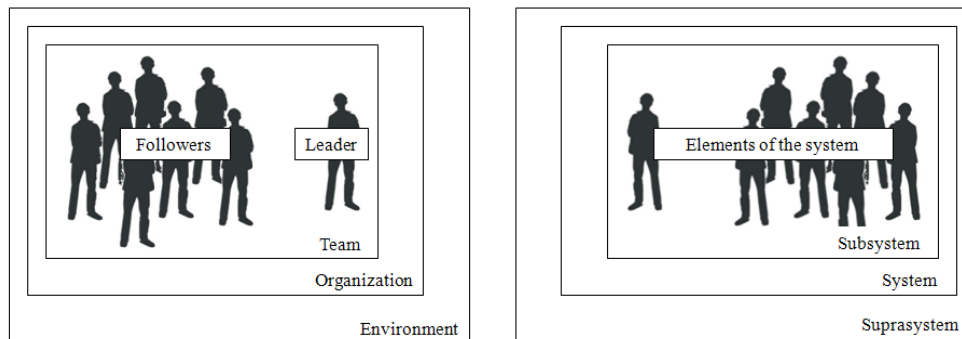


**Source:** Coffey (2010).



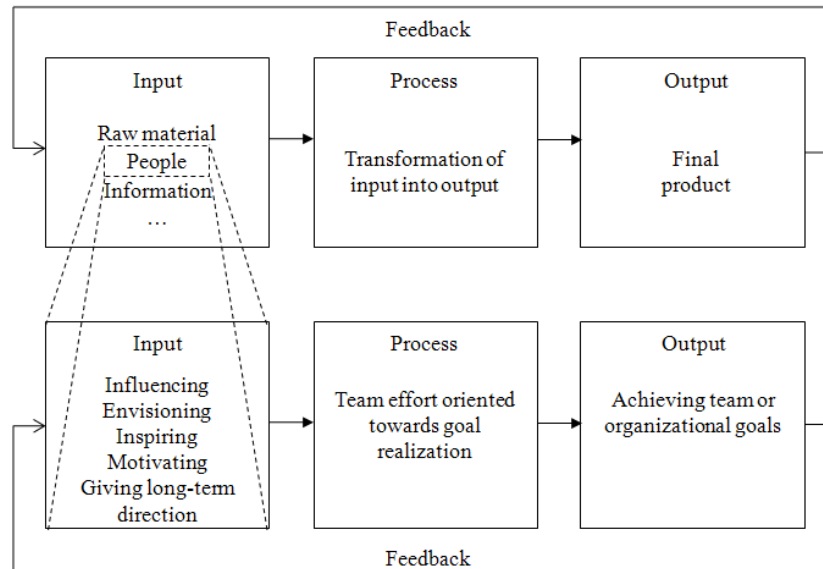
This model does not take into account the followers that give reason of existence to the leader and treats the organization as suprasystem when all serious authors portray the organization as a system and its surroundings as suprasystem. For this critique a new model is proposed. Systems approach to leadership can be inferred from the basic systems language. If the environment in which the organization operates is to be referred to as suprasystem; organization in which the leader works is seen as the system, the team in which leader exercises the leadership is treated as subsystem and leader with followers are known as elements of system, we can say that there's common sense between systems theory and leadership (Figure 5).

**Figure 5:** System and leadership



**Source:** author's model

Open system model (Figure 1) is a starting point for efforts to develop new theoretical models in function of the systems approach. Precisely a product of this is the following model that aims to present open systems approach in leadership, which is the argument of this paper.

**Figure 6:** Open System Model in Leadership

**Source:** author's model

Leaders input is his power of influence in followers, who are responsible for the transformation process to implement long-term plans and guidelines in the form of organizational or team goals. Leadership has probably been written about, formally researched, and informally discussed more than any other single topic (Luthans: 2011). Two of the most prominent contemporary theorists on systems theory and leadership are Peter Senge and Margaret Wheatley (Houghteling: 2006).

Stowing systems approach to leadership is an unusual contrast for researchers. A mechanistic paradigm has to be translated meaningfully to the human side of the organization, behavior, psychology, motivations, incentives and similar aspects of leadership. An approach that has a universal connotation is required to be integrated into the study of the individual contrariwise to the integration of the individual into the universal.

When placed in the same system, people, however different, tend to produce similar results. The systems perspective tells us that we must look beyond individual mistakes or bad luck to understand important problems. We must look beyond personalities and events. We must look into the

underlying structures which shape individual actions and create the conditions where types of events become likely (Senge: 1990).

The idea conveyed by Senge's preach is that systems view of leadership enables him to deliver the "big word" - organization's fundamental determination, through forces beyond individual potential, but through a unifying force that enforces people with skills and their potential to help each other and to shrink the range of weaknesses in order to show performance, which in the last instance enables the implementation of the goals for which the leader has inspired followers.

Our traditional views of leaders - as special people who set the direction, make the key decisions and energize the troops - are deeply rooted in an individualistic and nonsystemic worldview ... leaders are heroes, who "rise to the fore" in times of crises. So long as such myths prevail, they reinforce a focus on short-term events and charismatic heroes, rather than on systemic forces..... Unfortunately, much more common are leaders who have a sense of purpose and genuine vision but little ability to foster systemic understanding. Many great "charismatic" leaders, despite having a deep sense of purpose and vision, manage almost exclusively at the level of events..... They create tremendous energy and enthusiasm. But, under their leadership, an organization caroms from crisis to crisis (Excerpts from: *The Leader's New Work: What does it take to Lead a learning Organization?* - Senge: 1990).

A leader who considers relationships with followers, leadership situations and external environment in a systematical way will tend to be successful, precisely because of the emphasis on the importance of relations between members as system elements and the influence of external environmental in internal situations at the organization. For Wheatley (2010) "real power and energy is generated through relationships. Relation systems and the ability to form them are more important than tasks, functions, roles and positions."

### **3. Unconventional view of systems theory and leadership**

Systems theory is offspring of awareness that "independently of each other, similar problems and conceptions have evolved in widely different fields" (von Bertalanffy: 1968). Therefore general theory of systems is postulated that reproaches a set of universal principles applicable to systems in general. The need for leadership is ubiquitous in all kinds of

organizations in all aspects of situations, as the need for a set of features, behaviors, values and skills that make a leader able to exercise his leadership everywhere in any organization, in any place, in any situation becomes inalienable. So, creating a type of people who can be labeled as leaders from the majority and be followed by a handful in the realization of common goals. This view of systems and leadership, if not taken in context may seem unclear, but if the development of systems theory and leadership is examined in the context of creating a frame that can fit structure, it may be acknowledged. Leadership which is already admitted to be teachable, as leadership schools develop leaders who are prepared to exercise their leadership anywhere, can be analogical with systemic thinking, which was developed with the idea of being universally applicable.

Ludwig Von Bertalanffy (1968: page 105), stating that the general theory of systems has been applied in the narrower sense in human behavior theory or in personality theory, is pleaded by Hall's and Lindzey's (Theories of Personality: 1957) statement that "All theories of behavior are pretty poor theories and all of them leave much to be desired in the way of scientific proof." Further, Bertalanffy states that the theory of systems "will have demonstrated its value in opening new perspectives and viewpoints that may have experimental and practical application ... There is quite a group of psychologists who are committed to an organismic theory of personality, Goldstein and Maslow being well known representatives. "Even one of the founders of systems theory has been aware of the spread of his ideas and has concluded that systems approach would have found place in theories of personality, human behavior theories, organizational theories and thus in leadership. Systems theory has enriched the gallery of leaders' work tools the game theory, decision theory (Bertalanffy: 1968), PERT and CPM tools (Fairholm and Fairholm: 2009).

Most people fall between two groups of thought, those who are with von Bertalanffy that general systems theory is a discipline with principles applicable to systems in general and is a step towards the integration of science (von Bertalanffy: 1968) and Boulding that general systems theory is the skeleton of science in the sense that it aims to provide a structure of systems on which to hand the flesh and blood if particular disciplines (Boulding: 1956), and those who think that general systems theory has failed to establish applicable principles (Dubrovsky: 2004) and does not fulfill the claim of generality of principles if they are not applicable in conceptual systems (Ackoff: 1964). All these have proven the

indispensability of systems approach to management and leadership, as well as in other sciences in which the paradigm of systems theory constitutes the starting point in the creation of knowledge.

### **3.1. Systems approach, leadership approaches and styles**

If a leader has an innate set of traits by which he exercises leadership, he uses situational factor to adopt his leadership, he is charismatic, transactional or transformational, if does not mean that he isn't using systems approach. A leader may choose to be authentic (authentic leadership) or situational (situational leadership), while systems approach is not the third pole, but the complementary of the two approaches and any other approach to leadership. Furthermore systems approach ennoble leaders' approaches making them more informed in conditions of external and internal dynamism and complexity of the organization.

Systematic approach formally ranked in the chronology of management (and leadership) approaches, but systems approach is not comparable as a category with other approaches, scientific management, the behaviorist approach and similar, but it is their complementary. Scientific management movement has used the concept of man-machine system, but is concentrated primarily in the lower level (Johnson et al.: 1964). Systems approach is in the core of other approaches. Systems approach can not be put in a row with leadership approaches, situational, transactional, transformational and other, which after all are the styles of leadership. Systems approach is a fundamental determination that doesn't have to do as much with the way the leader behaves with followers or in situations, but is an unmatched determination to give answer to complexity and dynamism with creativity and foresight.

The starting point for contingency theory, the dominating management school during the 1970s, is that organizations are open systems (Skyttner: 2005). Essential for managers and leaders in defining their approach to work, processes and people is understanding of exchanges with the environment. External environmental factors, as well as internal factors determine all parameters of organizations development and consequently leader's situational approach. For Hassard contingency theory is the most influential of modern open systems perspectives on organizational analysis. In contrast to universalism, it emphasizes that management strategy is context-dependent: management principles must be concordant with the type of situation being encountered (Hassard: 1995). In addition to

providing a definition of what contingency represents, the author proves of an extension of contingency approach from systems approach as essential paradigm of thinking in organizational and management theories.

Feedback element that the systems approach contains is a close liaison with situational approach. Feedback contains process information, which enables a control and an eventual change of new cycles. New situations require new approaches and awareness for a new leadership situation can be done through feedback. The situational approach is built on leader's situational awareness of the leadership situation and on sensing what is more appropriate and acceptable by the followers.

Transformational leadership is particularly important in organizations that require significant alignment with the external environment (McShane and von Glinow: 2010). Systems approach is an empirical concept of understanding the way people interact with the world around them (Laszlo: 1972). Awareness about the impact strength of external factors consists a typical systems approach feature. A transformative leader, aware of the importance of external environment factors regards the organization as a system that receives inputs from the environment.

Two fundamental properties of complex living systems are that they are self-organizing and self-regulating (Houghteling: 2006). Self-organization is the ability of the system to generate capacity to organize and govern themselves, and by so doing produce inner forces of change that generate energy and other forms of structures and entities capable of self-organization; self-organization also means self-governance, self-control and self-regulation (Farazmand 2002). For Ashby (1962) self-organization indicates goal-oriented systems that are able to pursue their objectives without the need of external imposition or instruction. Self-organization encourages all members of the organization to take the initiative and be creative in their efforts to implement the goals of the organization. Self-organizing systems have what all leaders crave: the capacity to respond continuously to change (Wheatley: 2010).

Principle of equifinality is important to systems approach, for which there is no single way to achieve a goal, but there are different paths that can be followed. Thus idea is proclaimed also by contemporary leadership, especially transactional style of leadership. When applied to leadership, equifinality implies that different leaders can behave in their own quite idiosyncratic ways and still get key leadership tasks accomplished (Hackman and Wageman: 2007).

Bass (1990) defines transformational leadership as superior leadership performance which occurs when leaders broaden and elevate the interests of their employees, when they generate awareness and acceptance of the purposes and mission of the group and when they stir their employees to look beyond their own self-interest for the good of the group. All this points out that the principles of self-organization and equifinality proclaimed by systems theory are essential of transformational style. Transformational leader builds ground for followers so that they are no longer followers and exhibit more leadership behaviors. This new leadership fashion is facilitated by self-organizing and creating an environment of continuous learning. Equifinality is a principle claimed by situational approach, as the principle of equifinality osculates to the contingency-based Path-goal leadership theory (Morden: 2004)

The environmental context in which leadership is practiced influences which approach might be most effective, as well as what kinds of leaders are most admired by society (Daft and Marcic: 2009). Systems approach to leadership with environmental awareness in which leadership is exercised and the environment of the organization, enables the adjustments of approaches to environmental changes (situational approach) and consolidation or modification of some behaviors that are more appropriate (the behavioral approach).

#### **4. Conclusions**

Leadership is intensive in relationship and this is the first meeting point with systems theory. A leader who systematically tackles challenges in the organization tries to take informed and contextualized decisions from the environment in which the organization operates.

Systems approach is one of perspectives in management theory, a theory developed simultaneously with systems theory itself, not just for the ability of management to acquire changes, rather than for systems approach ability to enable thinking.

Modern organizations operate in diverse and complex environment, with intensive interactions and multilateral impacts of external environment factors, and to cope with them, managers and leaders are required to be able to make informed decisions and to keep the organization focused to purpose.

Leaders need systems approach to understand the organization as a whole in order to achieve goals. Systematic leader exercises his leadership by recognizing the external environment, system and system elements, and relationships between them; that ensures compliance of followers for organization's vision, soundness and integrity in a dynamic environment to achieve the objectives.

There could hardly be a management book disclosed that does not address the systems approach. Even though the same can not be said for leadership books, this does not make the systems approach practice less adherent in leadership.

Leadership consists of numerous properties and behaviors, styles and approaches, while system approach is not a substitute of any of them. Rather, systems approach does not replace them, but complements and focuses them through systems thinking, clarity of action and focus towards purpose. Systems approach to leadership goes beyond terminological enrichment offering a valuable perspective on modeling and problem solving.

Management and leadership have adopted systems approach easily because of its universality and multidisciplinary, at a time when modern organizations require much more than knowledge of a special field, but the integration of a multi-faceted collection of knowledge, from natural, social, organizational, psychological sciences and definitely, economics, management and leadership.



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