



3rd International Conference on New Challenges in Management and Organization: Organization and Leadership, 2 May 2016, Dubai, UAE

Management and Organizational Complexity

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Abstract

Complexity, whether exists or we use this term to refer to a specific position or situation? In other words, whether it is a fact or our interpretation of a particular situation? Anyway, for successful and effective management in organization theories and management knowledge, nowadays there are many discussions of the Existence of complex organizations and the necessity to revise their ideas, thoughts and understanding re-engineering. Where, chaos theory also confirms the existence of complex organizations. Accordingly, the nature of complexity, why and how it occurs and ultimately effective strategies to manage complex organizations have been explored and emphasized increasingly. In this paper, complexity and organizational complexity have been discussed in terms of incidence and existence. After that, complex organizations' management process is defined and outlined. Finally, for better management of complex organization, effective guidelines have been discussed with a particular emphasis on and approach to the use of dialogue technique.

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Peer-review under responsibility of the Ardabil Industrial Management Institute

Keywords: complexity; organizational complexity; complex organization management; chaos theory; dialogue

1. Introduction

Nowadays, where lots of organizations operate in the globalized world and open market, the focus on competitiveness, flexibility, and dexterity has expanded and this required more adaptive structures. In this context, con-temporary complexity theories which motivate managers with objectives related to self-organization and neural network-like organizations necessary both in academic journals and in consultancy (Mitleton-kelly, 2011).

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The specialized literature addressing complexity in management have sometimes took motivation in notions rising in other disciplines such as chemistry, physics, biology, mathematics, and computing. Metaphors have often been recommended because lots of these concepts are not easy to translate to the field of management (McMillan, 2008).

Although there is a growing interest in research in organizations taking advantage of complexity theories, complex adaptive systems, and organizational cybernetics, there is not sufficient explanation about the differences which exist between each of these theoretical approaches and the results that taking one or the other has for a certain research project or even academic consultancy.

In this paper, complexity and organizational complexity have been discussed in terms of its incidence and existence. Then complex organization's management process is outlined and defined. Finally, with a particular emphasis on and approach to the use of dialogue technique, effective guidelines have been discussed on the management of complex organization.

2. Conceptualizing complexity

'Complexity' can be defined as a feature of a system that arises as a result of the interactions of the individual components of the system (Dekker et al., 2011; Mcdaniel and Driebe, 2001). This implies that the behavior of the system cannot be lowered to the total of the behavior of its constituent elements (Dekker et al., 2011).

In simple language, in the management knowledge where experts are trying to the complexity in system and organization be depicted, this term is referred to a situation that we see the rising trend of components and thus the relationship between them.

Formation of a term called complexity and introduction of a new theory in management entitled complexity paradigm has been affected by various increasing changes and transformations of environmental factors of organizations. In the age of modern, continuous and innovative unsustainable developments, cognitive-perceptual aspects of the organization's processes and procedures do not seem easy. Accordingly, it is necessary for experts, managers and leaders of organizations to further equip with mental- cognitive capabilities of the nature and causes of complexity and achieve effective strategies in managing them. What is complexity? In other words, how the nature of it is defined and described? How complexity explanation can be done? Successfully responding to the questions, how to manage a complex organization?

According to Kauffman, "the complex whole may show belongings that are not easily described by comprehending its parts. The complex whole, in a completely non-statistical sense can often exhibit collective properties 'emergent' features that are lawful in their own right" (Kauffman, 1993; Broche, 2008; Bratian, 2014).

Complexity has been studied and analyzed from different perspectives. In some management contexts, complexity is considered synonymous with chaos theory and in some contexts; chaos theory is introduced as a manifestation of complexity.

'Complexity science' refers to the study of complex systems. Mckelvey (2004) recognizes two schools of complexity science, namely the European and the American school (Mckelvey, 2004). While the European school refers largely to the natural (physical) sciences, the American school refers to life sciences, social sciences, and chaos theory. Therefore, complexity science should not be noticed as a single unified theory, nor as two complementary theories, but it can be considered as a grouping of theories and models of adaptive, complex systems. Following this, it is worth mentioning that complexity science identifies organizations as "complex adaptive systems".

The sciences of complexity, complex adaptive systems, and organizational cybernetics are related to the study of complex systems that are distinguished by nonlinearity. The primary characteristic of complex systems tends to be self-organization (Arevalo and Espinosa, 2015).

2.1. Some definitions and interpretations of complexity

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