

12. Organisational Change and Development
Competitive Session

**Examining Organisational Transformation (OT) through the Lens of Complex
Adaptive Systems (CASs)**

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ABSTRACT: *In this paper, the applied aspect of complexity theory envisions organisations as dynamic and adaptive systems. Through this application, the study examines the process of organisational transformation and outlines a research program. The proposed research has been designed to provide new tools and practical insights to make success more likely for organisations in the transformational process. The research outcomes are intended to inform organisational strategists, management consultants, change managers, and scholars in the field of management sciences, and more generally, improve understanding of organisational transformation process in large and complex organisations.*

Keywords: Organisational transformation, organisational change, complexity theory, complex adaptive systems, edge of chaos

INTRODUCTION

This paper presents a framework for the study of organisational transformation (OT) using complex adaptive systems (CASs) approach. The concept of complex adaptive systems (CASs), from the field of complexity theory, is used to explore and explain a specific sequence of activities which can underpin effective transformation. The introduction section highlights the fact that the turbulent environments demand rapid and continuous organisational transformation. The next section that is ‘organisational transformation (OT)’ defines and explains organisational transformation. The following section that is ‘complex adaptive systems (CASs)’ introduces the concept of CASs in the organisational context. The following section is derived from the discussion about CASs and introduces the concept of ‘edge of chaos’, it explains that adaptive strategies can be created when organisations are at the edge of chaos. The following section that is ‘conclusion’ concludes this paper by highlighting the fact that once managers consider organisations as instances of CASs, and if they want to transform the organisations, then they must adopt non-linear approaches to bring in the change and transformation in the organisations while organisations are the edge of chaos. This paper

proposes the need to explore the non-linear transformational strategies that should be adopted when organisations are at the edge of chaos.

In present times the business environment is changing faster than ever before (Achrol, 1991; Conner, 1998; Glass, 1996; Hamel & Prahalad, 1994; Kotter, 1996; Loewen, 1997; Michel, By, & Burnes, 2013; Nonaka, Kodama, Hirose, & Kohlbacher, 2014). Within last few decades, organisations have been exposed to many kinds of changes when responding to issues associated with globalisation, workforce diversity, technology advances, and an increasingly competitive external environment (Abdimomunova & Valerdi, 2010; Bartunek, Balogun, & Do, 2011; Colley & Price, 2010; Conner, 1998; David, 2011; Dunphy & Stace, 1994; Gotsis & Kortezi, 2013; Li & Lin, 2011; Michel et al., 2013; Rouse, 2005; Savery & Luks, 2000; Savolainen, 2013; Staber & Sharma, 1994; Wanberg & Banas, 2000). From an Australian perspective, the previously held notion of once-a-decade change by organisations has been replaced by a new management realisation that considers continuous and transformational change to be central to organisational success (Graetz & Smith, 2010; Smith, Oczkowski, Macklin, & Noble, 2003). Therefore, in light of increasingly unpredictable and dynamic environments, a common approach is to adopt a corporate transformation or organisational transformation (OT) (Hoyte & Greenwood, 2007; Rouse & Baba, 2006).

ORGANISATIONAL TRANSFORMATION (OT)

Waddell, Cummings, and Worley (2007, p. 319) define organisational transformation (OT) interventions as ‘the interventions those are directed at culture or dominant paradigm within the organization’.

Palmer, Dunford, and Akin (2009, p. 86) define organisational transformation as second order and discontinuous change. According to them, second order and discontinuous change ‘is transformational, radical, and fundamentally alters the organisation at its core. Second order change entails not developing but transforming the nature of the organisation’.

Based upon the above, with respect to the extent of change occurring within an organisation, organisational transformation (OT) is considered to be at the extreme. It is a revolutionary process suitably applied when the organisation's strategy is radically misaligned with its environment and competitive realities. OT goes beyond improving the organization incrementally but it focuses on changing the way the organization views itself and its environment. It entails significant shifts in corporate philosophy and values and in numerous structures and organizational arrangements that shape members' behaviors. (Bartunek & Moch, 1987; Fiol & Lyles, 1985; Ford & Backoff, 1988; Gary, 2000; Golembiewski, 1979; Golembiewski, Billingsley, & Yeager, 1976; Greenwood & Hinings, 2006; Meyer, 1982; Viljoen & Rothmann, 2002; Waddell et al., 2007).

COMPLEX ADAPTIVE SYSTEMS (CASs)

Complexity science is a broad term encompassing specialised doctrines; one being complex adaptive systems (CASs). Following this doctrine, organisations may be considered as instances of *adaptive systems* (Holland, 1975, 1995; Paina & Peters, 2012; Palmberg, 2009). That is, systems that have developed to match, in a nontrivial fashion, the complexity and turbulence of their environments (Ashby, 1954; Choi, Dooley, & Rungtusanatham, 2001; Schneider & Somers, 2006; Uhl-Bien & Marion, 2009; Varela, Thompson, & Rosch, 1991; Wiener, 1961).

Complex adaptive systems (CASs) have been described as 'complex systems' (Cilliers, 1998), 'complex responsive processes' (Stacey, 2001), 'complex evolving systems' (Mitleton-Kelly, 2003), or 'intelligent complex adaptive systems—ICAS' (Bennet & Bennet, 2004).

Complex adaptive systems' (CASs') theory involves several *agents*. In an organisation these agents can be individual employees, departments or groups of people. These individuals, departments and groups are connected to each other through their work. These agents have their informal rules of performing the different tasks, also they interact with each other based upon their own informal rules of interaction (Stacey, 1995). These rules define the behaviour of the agents in certain situations. And the behaviour of one agent can affect the behaviour of other agent(s) and so on (Porter, 2006).

Therefore, the overall behaviour of the organisation is the result of the interactions of employees and departments in the organisation (Holland & Miller, 1991; Palmberg, 2009; Sawyer, 2005).

The above explains that the informal structures can emerge in the organisations when there is turbulence in the external environment. In other words, the organisations self-organise to deal with the turbulence in the external environment. This self-organisation happens due to the informal interactions and actions of the agents in the organisations to deal with the turbulence in the environment. Each agent in the organisation adapts to the environment, thus all the agents co-evolve (Holland & Miller, 1991). The adaptation level of each agent depends upon the behaviour by other agents, therefore each agent's adaptive landscape is constantly shifting (Levinthal, 1997). Every agent plays its role in adaptation and subsequent self-organisation, for example, those with influence and/or authority recruit new sources of energy (for example, members, suppliers, partners, and customers), by motivating stakeholders, by shaking up the organisation, and by providing new sets of challenges that cannot be mastered by hewing to existing procedures (Drazin & Sandelands, 1992; Wulun, 2007).

Complex adaptive systems' (CASs') theory argues that the abovementioned properties enable organisations to move far from equilibrium and that far from equilibrium zone is called edge of chaos. The inclination of CASs towards self-organisation, as mentioned above, can move the system toward the edge of chaos, a space where freedom and direction combine to produce creative outputs, from the interactions of many agents at multiple levels (Anderson, 1999).

EDGE OF CHAOS AND ADAPTIVE STRATEGIES

Complex adaptive systems may be vital and creative when they are at the edge of chaos (Anderson, 1999). Moreover, some of the most effective coping strategies can evolve during this time (Brown & Eisenhardt, 1998; Herbig, 1990). While at the edge of chaos, CASs can even generate new, more appropriate order-generating rules when the old ones can no longer cope with turbulence in the environment (Macintosh & Maclean, 1999; Wheatley, 1994). Therefore, while organisations are at the edge of chaos they can pursue the path of innovation (Frederick, 1998).

By operating at the edge of chaos, organisations have a variety of distinct alternative responses with which they can explore new opportunities. The implication is that to cope with change the system should be kept at the edge-of-chaos and once at the edge of chaos they can cope with the environmental turbulence and transform easily (Herbig, 1990; Lewin, 1993).

CONCLUSION

The need to quickly implement far-reaching and often complex strategic change has led managers and change agents to search for simple solutions and ‘the one right way’. Undeniably, the world is complex and full of uncertainties, randomness, crises, surprises and confusions. These factors may make readymade business plans obsolete and may even result in catastrophic breakdown of the organisations. Therefore, in order to assist the organisations in their adaptive process, organisational strategists should bring the organisations to the edge of chaos (if they are not there naturally) by turning up the heat and then let the transformation happen by employing strategy(ies) that best suits at that specific time. They should be prepared to manage the organisations with tailored plans designed to address complexity rather than employing ‘off the shelf’ strategies that prove inadequate in many cases. Organisations should adopt the management practices those address the need for active adaptation. Logically, managers should take an eclectic approach to melding together models of change rather than slavishly adopting the readymade models of change, especially for large organisations (Doz & Kosonen, 2010).

While organisations are at the edge of chaos, the complexity requires managers to rethink the nature of hierarchy and control, learn the art of managing and changing contexts, promote self-organizing processes, and learn how to use small changes to create large effects (Morgan, 1997; Tetenbaum, 1998).

Based upon the above discussion a model of organisational transformation has been developed (see Fig 1). It depicts that the organisations as complex adaptive systems move to the edge of chaos due to the turbulence in their environments, once they are at the edge of chaos the managers must adopt appropriate strategies to transform them. Since the organisations are already innovative and far from equilibrium while they are at the edge of chaos, therefore, it might be easy to transform

them if right techniques are adopted. A further investigation is needed to explore the appropriate strategies that can work to transform the organisations successfully when the organisations are at the edge of the chaos.

Insert Figure 1 about here

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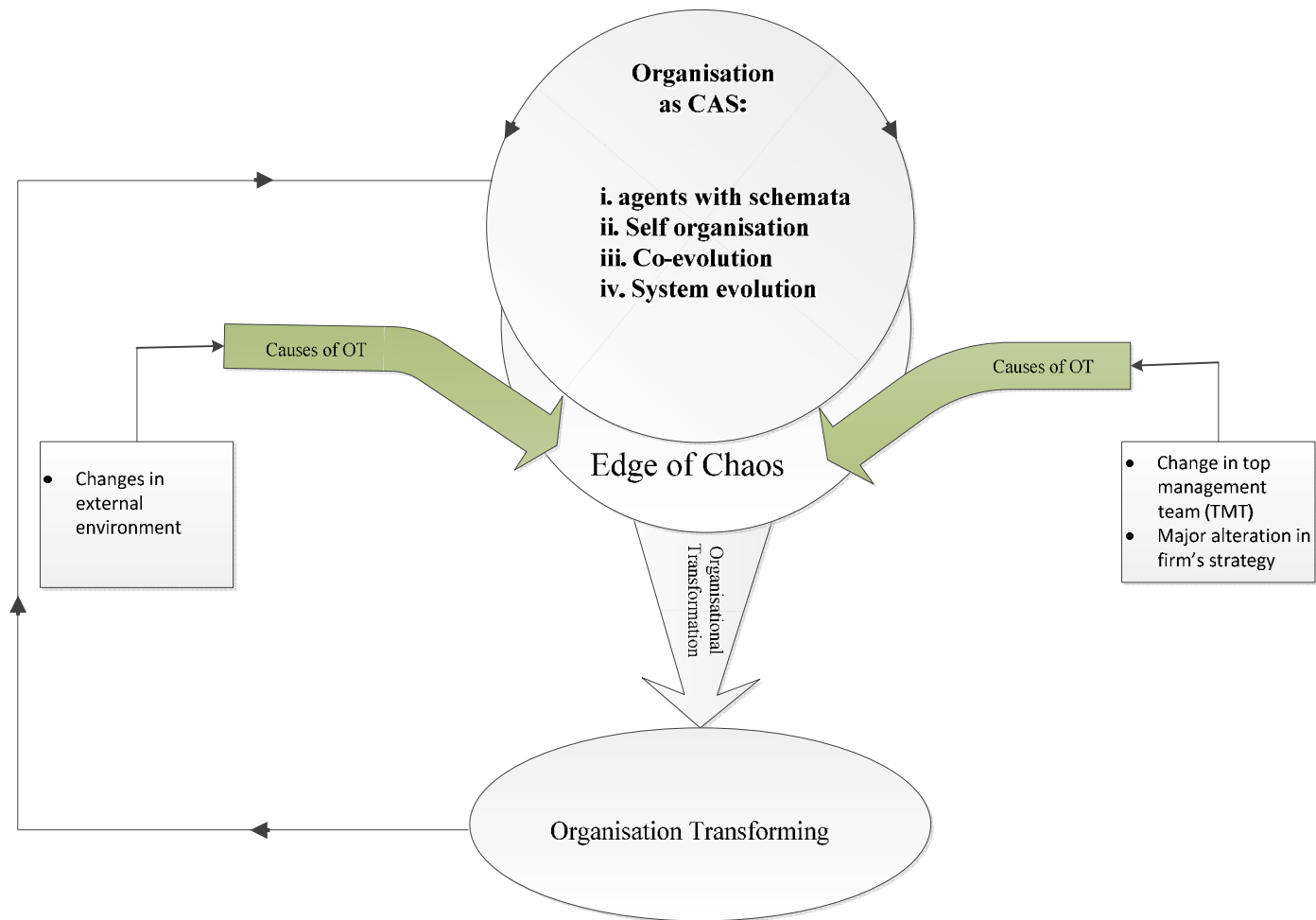


Figure 1: Conceptual Framework