

Research Article

Strategic Application of Intellectual Capital Research for Transformational Change in Complex Organizational Environments

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Abstract: The primary purpose of this research study is to develop a framework to implement the transformational change by using the insights of intellectual capital. This study employed 'structuring' as a strategy for research in which phenomenon of interest is organized and documented in the form of models. Intellectual capital and its applications in various fields have been debated considerably during the last few years. But its application in the field of change management is still unexplored. Therefore, identifying and implementing the strategies of intellectual capital is a new technique that would help to reduce the rate of failure in change management. This is an initial form of the application of intellectual capital in the field of change management. There is still a greater need to conduct separate studies to understand the applications and impacts of the three components of intellectual capital upon transformational change. This study consists of clear roadmap to transform the organization by using the elements of intellectual capital. This study concentrates on the application of intellectual capital research in organizational transformation. Not much work has been done in this emerging context. By this way, this study not fills the gap in existing literature *per se*, but also generates new paradigms for organizational research in the field of change management.

Keywords: Change management, complexity, environment, intellectual capital, transformation

INTRODUCTION

Intellectual capital is a contemporary issue discussed by various authors in their respective research works (Stewart, 1997; Sveiby, 1997; Edvinsson and Malone, 1997). But there is still no consensus on its basic definition and components. Most of the research scholars have the view that there are three components of intellectual capital: human capital; structural capital and relational capital (Saint-Onge, 1996; Petty and Guthrie, 2000; Habersam and Piber, 2003; Choong, 2008; Asonitis and Kostagiolas, 2010). Human capital includes knowledge, creativity and experiences of the organizational workforce (Bontis, 1999; Seetharaman *et al.*, 2004), whereas, structural capital include assets from the organizational structure (Mouritsen, 2009), while, relational capital include relationship of the organization with stakeholders of the external environment (Howcroft, 1993; Stewart, 1998). Besides a huge consensus on the three components model, there are some other views on its classification, e.g., Organization for Economic Co-operation and Development (1999) classified intellectual capital into two parts: organizational capital and human capital. In relation with the change management, there is marginal literature available on various aspects of intellectual capital.

Transformation is considered as the highest form of organizational change (Ackerman, 1986) which could be considered as a paradigm shift (Nutt and Backoff, 1993). Paradigm shift was initially discussed by Kuhn (1962) as a fundamental way of perceiving, understanding and valuing the world. Transformational change focuses on the corporation-wide change: change in systems, structures, authority, power sharing, over and above corporate values and culture (Nadler, 1982). As far as the basic definition of transformation is concerned, Golembiewski (1979) defined it in the following words "transformation is a redefinition of relevant psychological space" (p. 413). But the transformation process should be methodical and formalized rather than randomized. That systematic process would hopefully help the organization for its renewal by implementing modern and appropriate structures, systems as well as cultures; and eliminating the organizational components that do not work (Head, 1997). The transformation process also concentrates on behavioral change, employee's perception and lifelong learning and to create innovation out of the transformation process (Cumming and Worley, 2001). Simply, transformation can be defined as the basic shift in attitude, belief and cultural values. Ackoff (1981) defined transformation more comprehensively by considering it as the process of creation of a completely

new state of organization with modified functions, structures and mindsets. This new form, according to him, never existed before; and continuous learning, actions with knowledge and courage are important constituents of transformational change.

There are several approaches of organizational transformation discussed by various authors like Chapman (2002), Lancourt and Savage's (1995) and Kotter (1995) etc. But the implementation of transformational change in a complex organizational environment is relatively more challenging and still under explored. This study concentrates on intellectual capital as an essential element to understand the complexities of organizational environment and implement the transformational change in an efficient and productive manner.

LITERATURE REVIEW

Understanding of intellectual capital: With the advent of knowledge economy, the market dynamics are changing so rapidly that it seems practically impossible for any business organization to survive without an appropriate knowledge of the external environment. This knowledge is considered as the intangible asset of the organization which does not appear in the assets side of the balance sheet or we can term it as an intellectual capital of the organization as discussed by Organization for Economic Co-operation and Development (1999). As far as the basic definition of the intellectual capital is concerned various researchers during the last two decades have attempted to define it in numerous ways. Some of the earlier researchers in the last decade of 20th Century considered intellectual capital as an intangible asset. Itami and Roehl (1991) considered technology, brand image, consumer trust, managerial skills and organizational culture etc as intangible assets. Hall (1992), Smith and Parr (1993) and Gu and Lev (2001) also consider intellectual capital as an intangible asset of the enterprise. Hall (1992) who is considered as one of the pioneers to introduce the concept of intangible assets argues that intangible assets are those assets whose nature and essence can be defined in some way. He also categorized intangible assets into two types: intellectual property and knowledge assets. Whereas, Smith and Parr (1993) in his book on the calculation of intangible assets mostly focuses on the intellectual property (e.g., patents etc.) and its valuation through cost approach, income approach and market approach. Gu and Lev (2001) developed a new model to evaluate the unreported intangible assets by using 20 Major Market Index stock (MMI). In their model, they simply calculate the overall value of intangible assets by subtracting from the earning the average contributions of physical and financial resources. The view point of Stewart (1998) is different from these researchers. He

considers intellectual capital as intellectual material like knowledge, information, experience and collective brain power etc.

Sveiby (1997) categorized intellectual capital into three types: employee competence, internal structure and external structure. Employee's competences include the competences of experts, professionals, technical staff, R&D people as well as marketing and sales force. Internal structure according to Sveiby (1997) consists of concept models, computer and administrative systems, informal organizations, internal networks, culture, as well as patents. The external structure, on the other hand, consists of relationship with suppliers, customers, image, legal property, trademarks, brand name and reputation of the company. There are various researchers like Edvinsson and Malone (1997) and Gu and Lev (2001) who are in the favor of the arguments of Sveiby that there are three sub-categories of intellectual capital.

In another classification, Petty and Guthrie (2000) divide intellectual capital into two types which are organizational (Structural) and human capital. Structural capital includes proprietary software systems, supply chain as well as distribution networks, while human capital refers to all the human resource in the organization. They also include customers and suppliers within the scope of human capital of the organization. Marr *et al.* (2004) categories IC into three different categories: strategy, influencing behavior and external validation. It is true that the researchers have various views and arguments regarding the basic definition, status and categories of IC, but the majority of the researchers are agreed that intellectual capital consists of three major categories: human, structure and relational capital.

Organizational transformation: Implementation of change in organizational setting is a complex phenomenon that is hard to implement. The three basic types of change including incremental (Ackerman, 1986), transitional (Jick, 1993) and transformational change (Kotter, 1995) require different procedures and protocols for successful implementation. The discussion on incremental and transitional change is beyond the scope of this research, hence, this part of the literature review specifically focus on the transformational change and the role of intellectual capital in the successful implementation of transformation change process.

Literature in the field of change management presents various definitions given by different schools of thought, for understanding the concept of transformational change. Tushman and Romanelli (1985) defined transformational change as a shift in business strategy and structure and modifying the dynamics of human resources like power and control etc. Subsequent studies conducted by these researchers

(Romanelli and Tushman, 1986, 1994), also provide valuable insights in the field of transformation. Anderson and Anderson (2001) give a similar definition of transformational change stating that “transformation is the radical shift from one state of being to another, so significant it requires a shift of culture, behavior and mindset” (p. 39). Robinson and Griffiths (2005) defined transformational change as a corporate-wide change in which change agent focused on the renewal of business strategy, reformation of the business structures, modification of the corporate cultures as well as modification of power distribution across the organization. There are various other concepts used interchangeably for transformational change. Strachen (1996) in his research on the theme of management of transformational change presented a reasonable amount of literature on various concepts that could be used interchangeably for transformational change, as for example, fundamental change, gamma change, strategic change, quantum change etc. There are a number of approaches for the implementation of transformational change available in the relevant literature. In the following paragraphs, four important approaches will be discussed to understand the process of transformation change. These four approaches are presented by Poutiatine (2009), Chapman (2002), Lancourt and Savage (1995) and Kotter (1995).

Poutiatine (2009) suggested nine fundamental points for transformational change. His nine points are as follows:

- Transformation is not synonymous with ordinary change. It has very distinguishing characteristics than development, incremental or continuous change as discussed by Levy and Mary (1986), Cranton (1994), Quinn (1996) and Mezriow *et al.* (2009).
- Transformation change requires consent of the workforce for their readiness for change. This consent will reduce the resistance for transformational change. The workforce has to learn a lot of things that they have never experienced before. Therefore, it is necessary to make the employees ready for change. Same arguments are available in the studies of Cranton (1994) and Dirx (2006).
- Transformation will modify the core values of system. It would be a multi-dimensional, radical and multi-level change and considered as a paradigm shift as discussed by Kuhn (1962). Same arguments are available in the works of Levy and Mary (1986), Strickland (1998) and Kegan (2000).
- All the aspects of an individual's life (e.g., mission, identity, beliefs, competencies, behavior and environment) should be involved during the transformation process. Same arguments are available in the analyses of Tolliver and Tisdell (2006) and Taylor (2007).

- Transformation is irreversible process. Once the organization has changed through the process of paradigm shift it is normally impossible to return to the pre-transformational state. Same arguments are available in the study of Cranton (1994) and Quinn (1996).
- Transformational change involves uncertainty and ambiguity during the whole process. During uncertainty and ambiguity past experience and knowledge will be used to understand the situation and rational decision making. Same arguments are available in the studies of Senge (1990) Anderson and Anderson (2001), Quinn (2004) and Michel and Wortham (2009).
- Dimensions of risks and losses should also be studied in the process of transformational change. For this purpose, one can use previous knowledge, experience as well as emotional and artificial intelligence for making the right decision. The argument is supported in the studies of Scott (1997) and Scharmer (2007)
- Transformational leadership is required for the implementation of the transformational change process. Transformational leader would be a person who could broaden and expand the conception of self-transformation and environment. He would also increase the awareness and skills of the workforce and realign the organization with its external environment. Same arguments are available in the studies of Kegan (2000) Anderson and Anderson (2001), King (2005) and Tolliver and Tisdell (2006).
- Transformation leads persons to self-actualization by motivating them towards growth. By this way a person can achieve his/her desired state. Poutiatine (2009) considered transformation as a movement towards a greater integrity of identity and a movement toward wholeness. Similar arguments are available in the studies of Erikson (1980) and Palmer (2004).

Chapman (2002) discussed transformation change by dividing it into three core elements: firstly, defining the scope, nature and objectives of the organizational change; secondly, formulating a strategy to manage the process of transformational change; and lastly, deciding the role and responsibilities of the change managers/agent.

On the other hand, Lancourt and Savage (1995) presented relatively a new methodology for successful implementation of transformational change by dividing it into two parts: redefining the business and focusing on customer and identifying new roles for human resource. In the first part Lancourt and Savage (1995) focused on the shift in organizational culture, basic structure, core beliefs and attitude. They also focused on team work, job specialization and providing more attention to the customer. In the second part they

revisited the role of human resources and provided more attention to the development of informal teams and joining of the workforce depends upon their interest. Lancourt and Savage (1995) also focused on the empowerment of informal teams by giving them the authority to make decision in their own areas of activity. Consensus of decision making and equivalent and justified reward system are also the important constituents of their approach.

Kotter (1995) presented the most important approach to understand the complicated process of transformational change. His approach consists of eight important steps for successful transformation of organization. These steps are considered as the fundamental points for successful transformation. Kotter's approach includes the following eight steps:

- Creating the environment of change and bringing the employees out of their comfort zone for the purpose of breaking the grip of inertia. Appropriate leadership and search of change agent are also the important components of this step
- Development of working groups/teams to implement the strategy of change
- Development of organizational vision
- Effectively communicate the organizational vision
- Identifying and removing the barriers by adopting modified structures, systems and practices which will help to successfully achieve the newly developed vision
- Along with strategic planning, it is essential to develop short term plans that bring an early success. An early success will motivate the employees as they would receive rewards for their short term wins
- Outdated structures must be replaced with new structures, policies and processes. New hiring if necessary would be carried out for this purpose
- Anchoring/Institutionalizing new approaches in organizational culture. It is necessary to create the consensus amongst the workers that the change implemented in the organization was necessary and beneficial for the organization. It is also important to ensure that successor of top management will continue the change process

Environmental complexity and change:

Transformation is a multifaceted phenomenon, difficult to implement in a complex organizational environment in which there are number of confronting variables. As Milliken (1987) states that the dynamics of organizational environment creates problems for management. Researchers e.g., Harrington and Kendall (2006) are in the favor of the argument that dynamism in organizational environment consists of unpredictable changes taking place in it. Due to these unpredictable changes, environmental complexity has remained the major concerns for researchers and theorists for over three decades (Gerloff *et al.*, 1991). Environmental

complexity could be defined as the number and dissimilarity of factors in the decision environment (Duncan, 1972). Cilliers (1998) in his book 'Complexity and Postmodernism' enlist ten characteristics of complex system. These points are equally important and applicable to understand the complex system of organizational environment.

In a complex environment, the major problem for most of the managers is their inability to understand the behavior and patterns of change that create difficulties in various organizational processes like strategic planning, risk analysis and project evaluation etc (Lawrence and Lorsch, 1967). Therefore, most of the researchers like George *et al.* (2007) and Miller (2009) suggest a detailed environmental analysis before preparing an organizational plan. Alongside the analysis of organizational environment, majority of the researcher (Zajac and Kraatz, 1993; Hall and Beck, 2005) strongly supported the argument that organization must adapt to environmental changes to minimize the complexities and regain the equilibrium. The continuous need for adopting external environment is one of the major reasons behind the transformational change. Therefore complex environment is more positively related to change and innovation than static and mechanistic environment (Damanpour, 1996).

RESEARCH METHODOLOGY

This study employed 'structuring' as a strategy for research as developed by Reisman (1988) and Reisman and Kirschnick (1995). Structuring is the process in which phenomenon of interest is organized and documented in the form of model framework or conceptualization (Reisman, 1988). In this research, relevant literature has been used for two purposes: to understand the key elements characterizing the constructs of intellectual capital and organizational transformation; and to develop an appropriate model for successful transformation that could present the intellectual capital as one of its principal characteristics. Camarinha-Matos and Afsarmanesh (2007) also advocate the development of model or framework for better understanding of any organizational phenomenon. The strategy is particularly helpful in obtaining an insight into the areas that require more rigorous qualitative research leading to advanced organizational theory and practice.

The research started with the search of key concepts of intellectual capital, organizational transformation and environmental complexities in the major databases of organizational studies. To explore and understand the dynamics of intellectual capital, more than 100 articles have been reviewed that specifically focused on the theoretical or empirical investigation of the concept or its sub-components i.e., human, structural and relational capital. For the analysis of organizational transformation and its key processes, a more than 150 articles were reviewed. As far as the

environmental complexity in concerned, only reasonable amount of literature has been reviewed that provided an understanding of the basic notion of complexity.

DISCUSSION

In previous sections, basic literature on the concepts of intellectual capital, organizational transformation and complexity has been discussed. Four approaches of organizational transformation have also been studied to develop some understanding about the concept. In this section, logical and methodical link would be developed to understand how the intellectual capital could be used to transform the organization especially in a complex environment. Three components of intellectual capital are conceptually interlinked with prerequisites of successful transformation. It is important to note here that the use of intellectual capital for organizational transformation is not a three step process but all the three segments of intellectual capital are equally important and work holistically for the improvement of all the dimensions of transformational change.

It is widely accepted phenomenon that the changes taking place in external environment are major causes of organizational transformation (Hall and Beck, 2005). The first and the most important task in organizational transformation is the analysis of organizational environment and creating the atmosphere for change. To analyze the complex organizational environment, all the components of intellectual capital contributed in one way or other. This task would be performed with the help of change agents, strategic managers, research and development teams, consultants, top level executives as well as the intellectuals of other organization. In the complex environment the number of variables and their interactions are more than static or mechanistic environment as discussed by Duncan (1972). Therefore, there is a need to monitor the environmental variables continuously, not only to analyze it, but also for the understanding of unpredictable changes taking place in it. Environmental analysis in transformational change process is important for two purposes i.e., identification of environmental risk and for developing a roadmap for different transitions of transformation.

After analyzing the organizational environment the next important task is to develop new organizational vision and develop small working group or teams that can implement the newly developed vision. Intellectual capital contributed by the change agent or transformational leader will provide a new vision (in close collaboration with all stakeholders) and develop a work team based on the employees' competencies, interests and requirements of the transformational change. Whitlock (2008) state that, "effective organizational change begins with the common vision,

inspired by transformational leadership capable of championing and communicating their vision to all the stake holders" (p. 301). Whitlock (2008) considered transformational leader as self-perceived change agent and prudent risk taker. The change agent not only performs the traditional functions of manager like directing and controlling but regularly performs new roles of facilitator, motivator and most importantly innovator (Caldwell, 2003). Leader also provides movement in the organization (Burns, 1978). He also desires to influence the thinking of people by emphasizing the need for understanding the change as a process and developing the work team for participative management (Heckscher *et al.*, 1994). The importance of the work teams have been supported by a number of research works available in the literature on motivational theory. They argued that development of work teams and participative management are the primary tools to reduce the employees' resistance (Darcy and Kleiner, 1993). By developing the work teams the employees contribute in a number of ways like expressing their ideas, understanding the clear objectives of change and developing a sense of responsibility. All these dimensions lead to the satisfaction of the employees. Similar arguments are available in the study of Peters (1987). In the literature on leadership, diverse types of arguments are available on the role of leadership in transformational change. However, if we summarize the duties of a leader during transformational change process, the following functions appear to have a significant value:

- Firstly, the transformational leader must focus on his personal transformation before going to transform other people or organization (Herrington *et al.*, 2000). The personal-level transformation will produce self-confidence, integrity and personal values (Dixon, 1998). These characteristics serve as the source of motivation for employees (Keller, 1995) and have a positive effect on goals achievement in organization (Avolio, 1994; Finkelstein and Hambrick, 1996).
- Secondly, transformational leader should assess the priorities for people and try to modify these with the new ways of thinking (Keller, 1995). This modification would generate a new culture in the organization.
- Thirdly, transformational leader should provide a new vision to the organization and motivate the employees to achieve it Bennis and Nanus (1997).
- Fourthly, transformational leader should concentrate on continuous learning process for individuals as well as for the organization (Mink, 1993). Continuous learning could implement the transformational change successfully (Dess *et al.*, 1998).
- Fifthly, transformational leader should align internal structure with organizational vision to achieve long-term goals (Covey, 1991).

Subsequent to the development of organizational vision and establishment of work teams to achieve that vision, it is necessary to communicate the newly developed vision and attempt to bring the fundamental changes in basic structure and management processes. Components of the intellectual capital e.g., change agent, leader, knowledge, existing management practices, inter and intra-organizational coordination, outsourcing, informal organization etc., would facilitate the communication of the newly developed vision and identification of areas in organizational structure and management practices that need fundamental changes.

Transformation change consists of many transitional phases and successful transformation depends upon institutionalizing the successfully implemented transitions and planning for the coming transitions to keep align with the environmental changes in external environment. Scott (1994) defines institutionalism as the process in which actions are repeated again and again and given same meanings by self and others. Institutionalizing the transformational change and alignment with environmental changes is not a simple task. To achieve this target, organizations need support of various types from stakeholders and other organizations as well. Therefore, various organizations adopt new structure like virtual organization, holonic organization and inter-organizational networks. In these new structures, organizations not only share their knowledge and expertise but also facilitate each other by different financial and operational means. Institutionalizing the newly developed structures, management practices procedures and policies are the last step of successful transformational change as discussed by Kotter (1995). All these new dimensions including new forms, alliances, coordination as well as knowledge sharing come under the scope of intellectual capital. The argument is presented and explained in the other works like Marr *et al.* (2004), Seetharaman *et al.* (2004) and Asonitis and Kostagiolas (2010).

CONCLUSION

Intellectual capital and its applications in various fields have been debated considerably during the last few years. But its application in the field of change management is still under explored. The most important element of change in business organization is the human resource irrespective of his/her status as a worker, manager, leader, or change agent, all the activities comes under the scope of intellectual capital. So, identifying and implementing the strategies of intellectual capital is a new technique that would help to reduce the rate of failure in change management. This is a conceptual study that focuses on exploring new framework for successful transformation. This is an initial form of the application of intellectual capital in the field of change management. There is still a

greater need to conduct separate studies to understand the applications and impacts of the three components of intellectual capital i.e., human, structural and relational capital upon organizational transformation. The significance of the elements of intellectual capital for different types of changes in different industries, sectors and contexts could also be explored in the future research endeavors.

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