2005

Organizational Culture and the Management of Technological Change: A Theoretical Perspective

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ORGANISATIONAL CULTURE AND THE MANAGEMENT OF TECHNOLOGICAL CHANGE: A THEORETICAL PERSPECTIVE

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Abstract

The modern business environment is characterised by constant economic upheaval and incessant technological changes and the pace of change has accelerated with the emergence of the Internet. Consequently the management of technological change has become a major challenge for almost all organisations. Increasingly researchers have refocused their attention from planned models of change management to understanding the emergent nature of change. It is now widely acknowledged that one of the major obstacles to managing change is organisational culture. Since cultural concepts have their origins in anthropology, the purpose of this paper is to investigate the contribution which anthropology can make in the study of organisational culture and, by implication, the management of technological change. This paper recognises some of the inherent weaknesses with existing cultural models and approaches within the literature; most studies assume that culture is static over time; that culture is homogenous (disregarding cultural pluralism) and there is a tendency to represent culture in terms of conceptual dichotomies. In this paper, a theoretical framework originating from anthropology (grid and group cultural theory) is put forward as a more coherent and interpretive research framework for examining organisational culture and the management of technological change.

Keywords: Technological change, change management, organisational culture, cultural theory, anthropology

1. INTRODUCTION

Organisations throughout the world have more recently been faced with rapid, complex and traumatic technological changes. Metaphorically the process has been described as having to 'change an aircraft in mid flight'. As more and more technological systems are acquired and implemented by organisations, they are having an unsettling and far reaching impact on end users (Markus, 2004). As a consequence, organisational members must now continuously learn and experiment with these emerging technologies. However this is proving more challenging and difficult than initially expected, raising some fundamental questions regarding how to successfully manage this complex change process (Macredie and Sandom, 1999). In the field of change management various theoretical insights have been used with regards to how change should be managed. These include planned versus emergent approaches.

From research theoretical and case based, the general conclusion would seem to be that technological change should be approached from an emergent perspective (Orlikowski, 1996; 2000; Tsoukas and Chia, 2002). Emergent approaches recognise the importance of understanding the ongoing behavioural aspects of change. Increasingly researchers have focused their attention to understanding the cognitive and behavioural aspects of change, by turning their attention to organisational culture. Lack of attention to organisational culture is often cited as an important reason for change failure (Johnston,1987; 1990; Hackney and Mcbride, 1995). As Delisi (1990) notes 'given the changing nature of organisations today, organisational culture is more important than ever before'.

Despite the increased importance of organisational culture most studies can be criticised for two main reasons; firstly for taking a static approach to culture, suggesting that culture is something unchanged, bounded and fixed and secondly, for expressing culture in terms of conceptual dichotomies, merely discriminating between hierarchical and entrepreneurial modes of cultural thinking. A recurring theme arising within the literature is the need to move away from traditional/ hierarchical cultural modes of thinking to more organic/ entrepreneurial ways of thinking, involving an instant shift in attitudes and beliefs towards cultural conformity. However in practice the idea of instilling a new set of shared values within the organisation has become questionable, researchers have highlighted that within any organisational context there is likely to be a number of competing beliefs and values (Hendry, 1999). Increasingly numerous researchers have acknowledged the importance of understanding culture from a contemporary anthropological perspective, suggesting that culture is dynamic and ongoing, experienced by actors within specific organisational contexts; however few attempts have been made at introducing anthropological approaches to the study of managing technological change.

Regardless of the substantial literature emphasising both the importance and necessity of understanding the emergent and cultural aspects influencing the change process, few models have been devised. Most approaches can be criticised for having changed little in the last 15-20 years, with their planned, prescriptive and technological deterministic advancements (Ward and Elvin, 1999; Benjamin and Levinson, 1993). The recent failures in managing change suggests that a fresh theoretical perspective is needed for thinking about and perceiving change. This paper recognises three important intertwined issues relating to the study of technological change namely, understanding the ongoing emergent nature of technological change, organisational culture and a fresh theoretical framework for managing technological change (see figure 1).

2. MODELS OF TECHNOLOGICAL CHANGE

In the literature various theoretical insights have been used for understanding changes within organisations. These include planned and emergent models. Planned approaches are based on two fundamental assumptions. Firstly they assume that the major determinants of change can be planned in

advance and secondly, technology is seen as the main enabler for successful change management. Planned models postulate a top down approach, where senior management are seen as the prime drivers in managing the change process.
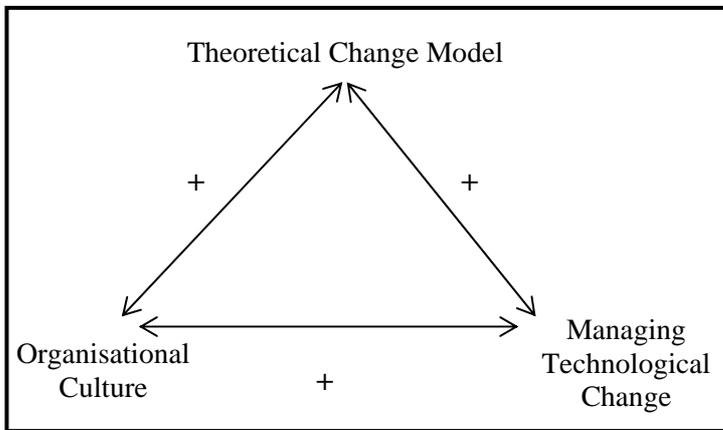

Figure 1. Aligning the key change dimensions, the + signifies the interrelation between the various concepts.

Despite the popularity of planned models over the past few decades, they are increasingly becoming obsolete, as reflected by the increased failure of many planned change interventions. A major reason for planning failure is the increasingly more turbulent, complex and uncertain organisational conditions of today (Orlikowski and Hofman, 1997). A major criticism, as frequently reported in the literature, is that they fail to look beyond technological issues and understand the social and cultural factors, influencing the change process. Recent researchers have highlighted the need to move beyond these simple technocratic accounts of organisational change and develop theoretical approaches that examine the complex interaction between social, technical and interpretative factors that continually influence change within specific organisational contexts. Most traditional planned approaches can be criticised for having ignored the human, social, political issues and processes involved in managing change.

Newer approaches have incorporated the notions of emergence, improvisation, learning and innovation. These approaches share the view that change cannot be viewed as a linear sequential process which can be planned within a given time period, by senior management. Instead actors enact change as they respond to change arising in an ad hoc fashion. Change from this view is something, which is ongoing or continuous. As well as recognising the importance of understanding change as ongoing, emergent approaches recognise the importance of moving away from a solely technological focus to understanding the social and cultural factors, influencing the change process and understanding different actor's expectations, norms and perceptions within specific organisational contexts.

Various researchers have recognised that actors deduce, create and establish a social construction of reality (Orlikowski and Baroudi, 1991; Orlikowski and Robey, 1991). Social constructivism acknowledges change as something which actors both actively and socially construct, characterised as an ongoing process of argumentation within specific organisational contexts. These approaches recognise that technologies have inscribed interests which embody cognitive patterns of perception and use (Akrich, 1992, Akrich and Latour, 1992). As Akrich (1992) notes 'actors may be categorised with specific tastes, competences, motives, aspirations, political prejudices in their attitudes towards an object'. Theoretical ideas that technologies contain both 'constraining and enabling' effects are increasingly becoming prevalent within the literature (Orlikowski, 2000).

However, these approaches are not without their criticism, increasingly numerous researchers have suggested the need to explain more explicitly how technology both constrains and enables actor's

perceptions in relationship to distinguishing deeply held beliefs and motives and the entwinement between organisational culture and organisational change (Avison and Myers, 1995). As Orlikowski et al (1995) notes 'it is necessary to push forward in some detail in distinguishing how and where IT restricts and enables action'. Existing models have been criticised for not exploring how actors perceptually merge and interface (Ford and Ford, 1996; Feldman, 2000; Tsoukas and Chio, 2002). Despite the call for a more interpretative and dynamic model for managing technological change the pursuit of more explanatory models for examining change management continues. As Brown and Eisenhardt (1997) suggest 'the body of knowledge in this area is still fragmented, with conceptual frameworks and empirical studies being scarce'.

3. MODELS OF ORGANISATIONAL CULTURE

Many researchers have discussed the importance of organisational culture within the technological change literature. Regardless of the contribution of many researchers in defining organisational culture, a common platform in conceptualising culture has not been reached. Culture by its very nature is complex and multifaceted. Perhaps the most influential author in applying the culture concept to the area of technological change has been organisational behaviourist Edgar Schein (1984). For example Delisi (1990) using Schein's (1984) definition of culture, to examine the relationship between culture and change, defined organisational culture as 'the pattern of basic assumptions that a given group have invented, discovered or developed in learning to cope with its problems of external adaptation and internal integration, and that has worked well enough in the past to be considered valid, and, therefore to be taught to new members as the correct way to perceive, think and feel in relation to those problems'. What is common with these definitions is that they share the view that culture is something which is bounded, fixed, unitary and static overtime.

Similarly a growing body of research has highlighted specific problems with existing cultural models and frameworks within the literature. Most models tend to differentiate between one dimensional (Hall, 1976, Lewis, 1992) and multi-dimensional frames of thinking (Harrison, 1991; Hampden-Turner and Trompenaars, 1994; Miles and Snow, 1978; Hofstede, 1980). Most studies have adopted Hofstede's multidimensional framework (Shore and Venktrachalam, 1996; Weber and Pliskin, 1996; Choe, 2004; Kanungo, 1998; Steinwachs, 1999). Hofstede (1980) suggested that cultures may be classified by the following four dimensions; *Power distance*, the extent to which power is dispersed across the organisation; *Uncertainty avoidance* is the extent to which the culture feels endangered by unfamiliar happenings; *Individualism* refers to the degree of importance of individual's requirements compared with the group's needs as a whole; *Masculinity* refers to the extent to which cultures show evidence of masculine or feministic qualities.

Despite the value of Hofstede's model for understanding culture, numerous researchers have highlighted various problems. For instance Ford et al (2003) recently suggested three major problems with Hofstede's framework. Firstly it assumes culture to be static over time, secondly culture is assumed to be homogenous and thirdly, it disregards cultural pluralism. Another problem with existing cultural models is the tendency to operate in terms of conceptual dichotomies and dualistic notions. However, such frames of thinking have the adverse effect of obscuring extensive interdependences between phenomena. Culture from this view is based on realistic accounts, made up of discrete entities which can be objectively measured regardless of context.

Contemporary anthropologists differ from this conventional view of culture, arguing that culture is not carried unchanged or hold the entire organisation as being static. Instead the study of culture is unique within organisational contexts. As Weisinger and Trait (2002) note organisational culture is 'locally situated, jointly negotiated by actors within specific contexts'. Organisational culture does not exist in ready-made structures to be classified in a superficial way. Instead culture is viewed, as an ongoing

process of argumentation, between different sub-cultures, holding contradictory values and assumptions.

4. A SOCIO-CULTURAL APPROACH TO MANAGING TECHNOLOGICAL CHANGE

In the previous section, the need for increased studies into examining the emergent aspects involved in managing technological change and a contemporary anthropological interpretation of organisational culture, was highlighted. In this section grid/group cultural theory is introduced, drawing on the related themes introduced previously (Figure 2).

Grid and group cultural theory has been an anthropological approach developed by anthropologist Mary Douglas. First introduced in a book entitled Natural Symbols (Douglas, 1972), the framework has since been modified over the last 30 years. In Douglas's early research and fieldwork, her thesis was concerned with providing a model for capturing religious diversity in primitive African tribes, by observing variations in religious practices, symbolism, witchcraft and drinking habits. Her thesis replaced Durkheim's dichotomies of mechanic and organic solidarity with new categories of classification, drawn from the work of Bernstein (1971) on speech systems. Douglas provided a framework for categorising types of individuals, referred to as the 'socio-cognitive context of an individual' (Douglas, 1973). Subsequently over the years the theory has been advanced from examining remote tribal villages to organisational studies (Hendry, 1999; Altman & Baruch, 1998).
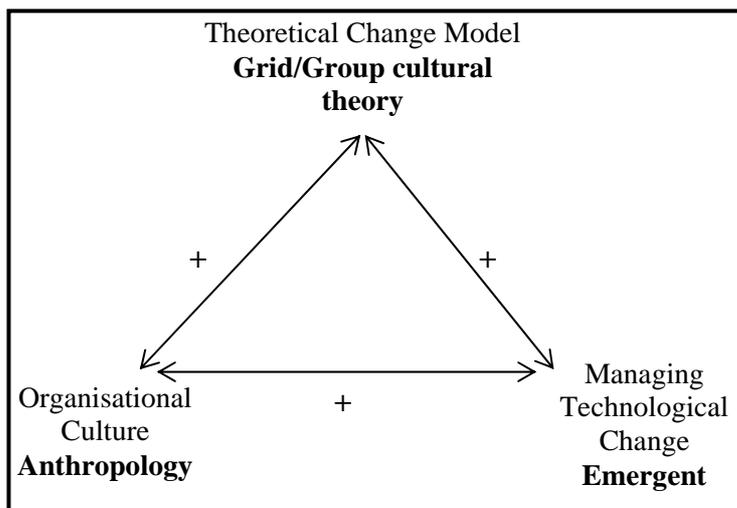

Figure 2. Theoretical perspective and assumptions

Douglas came up with a fundamental proposal identifying two basic dimensions, *grid and group*, subsequently, producing four cosmological types, each with a corresponding bias. Regardless of Douglas's contribution to providing a means of assessing and classifying cultures, Douglas's work has been criticised with concerns of holding each cultural type stable, rather than accounting for cultural pluralism and dynamics of change. Being concerned with Douglas's stability of each cultural type, numerous researchers have put forward a more dynamic cultural theory to account for cultural change and cultural pluralism (Thompson et al, 1990). The theory acknowledges that change is always in a state of constant disequilibrium, never in repetition, nor never settling down to some static state of equilibrium.

Cultural theory broadly describes people's values, beliefs, and preferences, which are not stable but ongoing and dynamic. The theory explores the dissimilar cognitive lenses through which people

interpret phenomena. The theory recognises the importance of social constructionism, and the possibility of distinguishing particular patterns of commonality that help in illuminating the human construction of meaning.

Cultural theory recognises three components of the term culture. Firstly cultural bias refers to values and beliefs. Secondly, social relations are defined as patterns of interpersonal relations. Finally when we wish to designate a viable combination of social relations and cultural bias we speak of a way of life (Thompson et al, 1990). Cultural theory is based on the notion that social relations and biases are reciprocal, interacting and mutually reinforcing, the so-called 'compatibility condition', where social relations and biases must compliment one another. The viability of a way of life depends upon a reciprocal supportive relationship between a particular cultural bias and a particular pattern of social relations. Cultural bias can have various distinguishing perspectives regarding attitudes, beliefs and resolutions to different efforts. According to the theory, one's social relations can be defined with the aid of two dimensions; group and grid.

Group refers to the degree to which an individual is predisposed by team-based values. For instance an individual with a high group orientation will favour group loyalty and team working. An individual with a low group orientation will favour to use their own initiative and not controlled to work in a group. Grid refers to the extent to which an individual is predisposed by the need for rules and control. An individual with a high grid orientation will favour control and power. In comparison, an individual with a low grid orientation will favour to use one's own initiative and experimentation.

Certain combinations of grid and group are supported by certain cultural biases. Cultural theory claims that there are four ways of life. These include egalitarianism, individualism, hierarchy and fatalism (Figure 3).
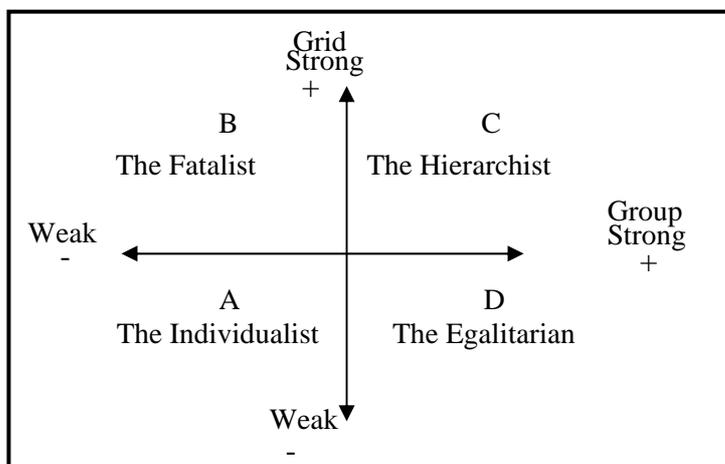

Figure 3. Grid/Group Cultural theory, Natural Symbols Douglas (1973)

The Individualist cultural bias (A) is best supported by both weak grid and weak group orientation. Individuals will emphasise autonomy, freedom and experimentation.

The Fatalist cultural bias (B) is comprised of strong grid and weak group, this type of culture reinforces insulation. Individuals will react to changes in unpredictable ways, they will display a cosmology towards frustration, despair and distrust.

The Hierarchical cultural bias (C) is found in positions with strong grid and group orientation. This cultural orientation will tend to manage by pragmatic means; this cosmology will favor a climate of rules and power domination.

The egalitarian cultural bias (D) thrives on weak grid and strong group orientations. This type of cultural cosmology will display an atmosphere towards reciprocity, with a commitment to other people, social harmony and enduring social bonds.

4.1 Grid and Group cultural theory and cultural pluralism

Cultural theory casts off the idea that culture can be classified in the form of conceptual dichotomies, instead it claims to offer a more holistic, symbolic and interpretative model in relation to examining the continuous evolving and dynamic nature between various cultural types, introducing the notions of pluralism and alliances between sub cultural types, the 'impossibility theorem' (Thompson et al, 1990). *Cultural theory predicts that each cultural cosmology is continuously in competition with each other and actively corrects each others weaknesses. The theory proclaims that each type of cultural cosmology has distinguishing constraining and enabling effects. Different cultural types therefore act as a corrective mechanism for the other cultural types by correcting others weaknesses by viewing the same matter from a different viewpoint.*

The theory predicts that having a number of cultural biases gives a society a wider perspective on life (Hendriks, 1994, 1999). A similar argument is made by Thompson et al (1990) who argued that 'ways of life which consists of several cultural biases (or at lest never entirely excluded) will be less prone to being surprised and will have a wider repertoire to draw from when responding to novel situations'. Cultural theory suggests that societies need a mix of three 'active' cultural types. These include hierarchy, individualism and egalitarian. The theory assumes that different institutions, organisations or societies will combine these three cultural types in different proportions (Hendriks, 1994, 1999; [Alder (2001) presented a similar argument]).

4.1.1. Grid/ Group cultural theory and managing technological change

Previously it was suggested that central to cultural theory was the idea that actors may be classified by reference to a limited number of socially viable cultural orientations. Similarly to structuration theory, different actors may have different perceptions towards how technological change should be managed. Each of the four cultural types will have differing biases with regards to ideas of who to blame when things go wrong, attitudes towards power and authority, risk taking, interpersonal trust, loyalty, commitment, motivation, coordination of knowledge, communication and participation (Figure 4).
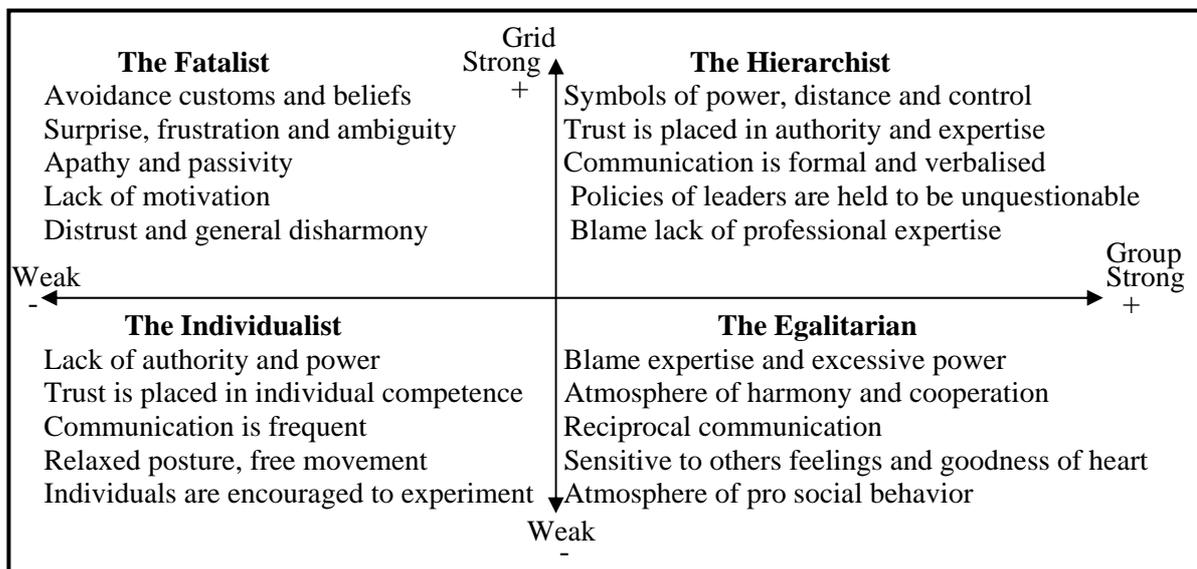
Figure 4. Grid and Group cultural theory and managing technological change

Just as cultural theory can predict that different individuals have different cultural biases towards the management of technological change, it also shows that each major way of responding to change or 'each way' of life is likely to have its own built in weaknesses. *Each cultural type have inbuilt strengths and weaknesses. Excess of one type will potentially lead to failure. Different cultural types (to different degrees) are likely to have strengths, which act as a remedial mechanism for the other cultural types.* Figure 5 and 6 highlights both constraining types of cultures (excess of one) and enabling forms of cultures (a pluralism of hierarchical, individualist and egalitarian beliefs).
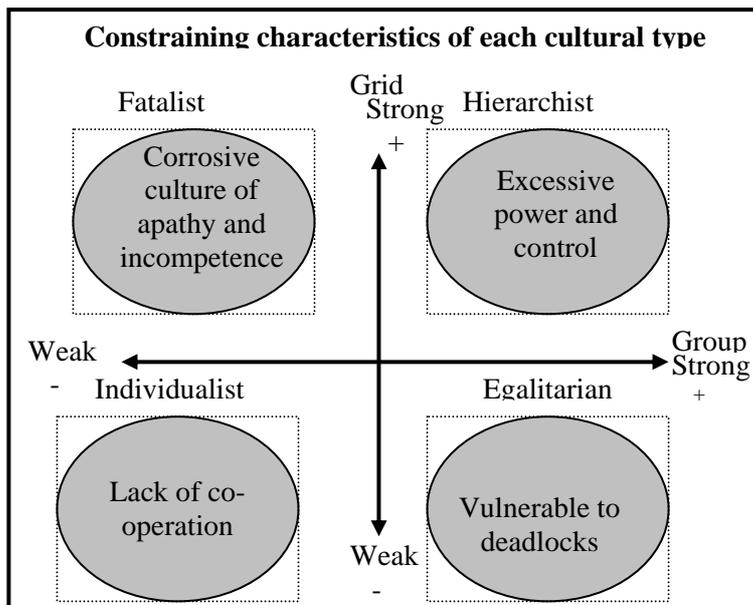

Figure 5- Constraining characteristics of each cultural type
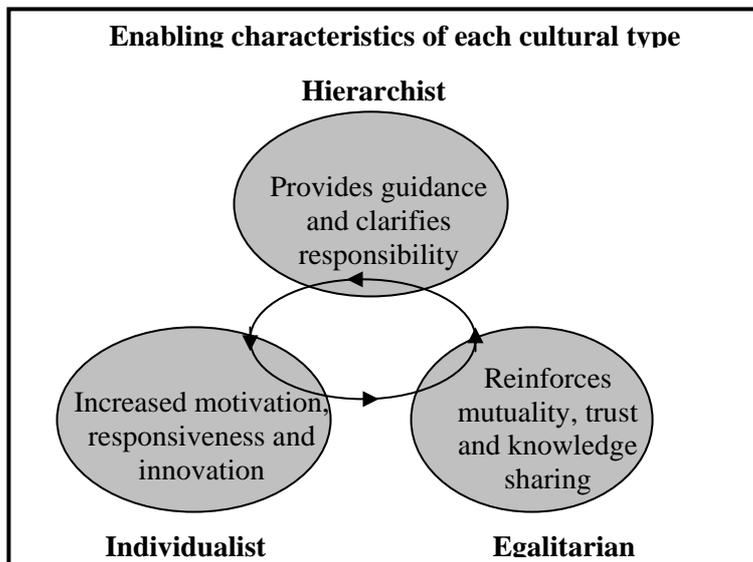

Figure 6- Enabling characteristics of each cultural type

In its enabling form hierarchical culture types can provide internal competence, synchronisation and appraisal. Hierarchist's can make organisational members notice new things and see new connections. Schein (1993) highlights that a hierarchical cultural cosmology provides steadiness, support and

physiological defenses to reduce stress and enable experimentation, vision and long-term change. Likewise Alder and Bory (1996) suggests that hierarchy provides needed direction, reducing role stress and helping people to feel more effective.

Excessive hierarchical cultural types will create an environment of power domination. Individuals will place excessive trust in authority and expertise, with an unwillingness to disregard traditional customs. Authority or expertise will not be questioned. Individuals will have over self-reliance in 'think big' solutions, particularly in 'technology fixes' (Hood, 1998). By placing extreme trust in top-level leadership, and expert wisdom they will suffer from the inability to learn from experience. This inability to learn from past occurrences will lead to a culture of massive errors in judgments and recurring failures. Alder (2001) noted that a domination of hierarchical values can smother vision, foster dissatisfaction and demotivate the workforce, leading to a sluggish, impassive and unresponsive culture. In managing technological change senior management tend to become cautious and unadventurous, and less willing to try new things and learn.

In its enabling form egalitarians can provide a high trust environment that reinforces mutuality, group norms and knowledge sharing (Alder, 2001). It also ensures that excessive power and authority are kept to a minimum. In managing change its ensures that there is continuous synergistic behaviour and skills transfer, enabling a platform of commonality and shared experiences, necessary to create an environment of belonging and collegial recognition. Due to their synergic behavior egalitarians can endow leaders with charisma. Trust is central to this cultural cosmology. Fukuyama (1999) suggests that a high trust culture can manage more effectively, lead to innovation and permits a wide range of social relations to emerge and congregate.

Excessive egalitarian cultural types due to their lack of leadership and authoritative values, however, can lead to unsettled disagreement and internal rivalry. This will lead to a lack of ability to resolve disputes and ineffective leadership. As the frame of mind is inclined to see mutuality, high trust and group values and the absence of power and authority, this cultural orientation may be vulnerable to 'deadlocks' or 'radical socialism'(Hood, 1998). Disagreements may become so heated that it can create internal splinter groups. As a result of their low grid position, relations can become confusing as no members are given ultimate power and authority to exercise control over members. Actors can express power only by speaking in the name of the group, which can resort to exclusion from various groups in remedying intragroup differences.

In its enabling form an individualist cultural cosmology provides an orientation towards creativity and the bubbling up of innovative ideas. It encourages the organisation and exploitation of good ideas, noticing new things, and making fresh distinctions. It enables a climate of stimulation, creativity in responding to, and managing technological change. Excessive individualist cultural type, on the other hand, can create a culture lacking in co-operation and individual corruption. Individuals, because of their newfound freedom, may abuse this opportunity to their own advantage. They may be unwilling to co-operate with others in relation to sharing vital information and tacit knowledge (Hood, 1998) with its schism proneness, combined with problems of participation and teamwork (Thompson et al, 1990).

Excessive fatalist type cultures can create a culture, which is unable to manage technological change, when extreme circumstances arise; this culture is represented as 'corrosive', displaying apathy and a lack of competence and enthusiasm towards managing technological change. This type of cultural orientation has no enabling qualities.

5. CONCLUSIONS

The management of technological change is proving an ever-ending competitive endeavor for most organisations. Key to success is an understanding of the ongoing emergent, behavioral and cultural aspects involved in managing the change process. This paper highlighted the various problems with some of the existing theoretical models of change management. In relation to organisational culture it was highlighted that most studies assume culture to be static, homogenous, and disregard the idea of cultural pluralism. Since grid and group cultural theory was aimed at examining organisational dynamics, it is a suitable framework for analysing and interpreting cultural pluralism within organisations. Rather than taking a dichotomous approach to deciphering organisations, the framework offers a more interpretative and holistic approach, acknowledging the possibility of cultural pluralism and the co-existence of cultural typologies within organisations. Each typology has a range of enabling and constraining effects. In managing technological change effectively, it was highlighted that organisations should have a mix of the *enabling* qualities of the three cosmologies namely hierarchical, individualist and egalitarian. The extent to which each cultural orientation is present can vary from one organisation to another.

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