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Impact of Innovation Climate on Technological capability Enhancement

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***Abstract*—** In spite of the increasing importance of Technological innovation and role played by technological capabilities in an organisational's growth trajectory, little is known how Technology Capability Building can be improved through Innovation Climate. In business organisations, the structure of the market (competition, concentration), Technological dynamism, and market growth are considered the prominent environmental factors influencing Technological product/service and process Innovations. The issue of improving Technology Capability Building through Innovation Climate has not been addressed yet and an effort has been made through this paper to through light on important aspects of technological growth from Innovation climate perspective.

***Keywords*—** Innovation climate, capacity building.

I. INTRODUCTION

Innovation Climate and Technological Capability of a firm are widely recognized as critical factors contributing to the firms performance, competitive advantage and sustained commercial success in the market and, therefore, they have been extensively investigated from different perspectives for a long time now. Technology Capability encompasses the organisation ability to identify its Technological needs and to select the technology to fulfill the needs; operate, maintain, modify and improve the selected technology; and promote learning. Given the current paradigm of a rapidly changing business environment in which success relies heavily on Innovation. It is of paramount importance that organisations create a workforce that can continually create and implement Innovation and enhance the Technology. Innovation Climate aids in directing employee attention toward Innovation. The pursuit of Innovation and Technology developments in products, services, systems and work processes has increasingly been recognised as a critical factor for long-term organisational survival and success (Amabile, 1988; Isaksen and Tidd, 2006). Innovation Climate and Technological Capability are widely recognised as critical factors contributing to the firms performance, competitive advantage and sustained commercial success in the market and therefore, they have been extensively investigated from different perspectives. Technology Capability encompasses the organisation ability to identify its technological needs and to select the technology to fulfil the needs; operate, maintain, modify and improve the selected technology; and promote learning (Tushman, M. L. and C. A. Reilly, 2002). The major mechanisms for building Technology Capability of a firm is Innovation Climate. Innovation climate offered by experts, a relatively enduring quality of an organisations internal environment which results from the (a) behaviour and policies of members of organisation especially top management; (b) is perceived by members of the organisation; (c) serves as a basis for interpreting the situation and (d) acts as a source of pressure for directing activity. It emerges from the above lines that Innovation climate is determined by certain attributes or characteristics of an organisation (Andrew, J. P., Manget, J., Michael, D. C., Taylor, A. and Zabit. H., 2010). It is of paramount importance that organisations create a workforce that can continually create and implement Innovation and build the Technology capability. One way for organisations to do this is through the establishment of a strong Climate for Innovation. Varjonen (2009) suggested that in order for Innovation to occur in organisations, employee attention needs to be directed toward creating new products, processes, and services crucial to the organisations survival.

II. INNOVATION CLIMATE

The study of Innovation Climate is well established and the existing knowledge-base is deeply rooted in the work of some of the greatest theorists such as Lewin (1951), Litwin and Stringer (1968), Moran and Volkwein (1992). Innovation Climate is more than just a description of the characteristics of an organisation; it is a complex construct that can be measured and analysed at an organisation wide level. Shared perceptions regarding the characteristics of the organisations must exist before an organisation can be seen to have an Innovation Climate. One of the initial difficulties in Innovation Climate research is defining exactly what Innovation is. Common to all definitions is that an Innovation is something new or novel. Beyond newness, definitions vary with academic perspective and application (Burgelman and Sayles 1986). An implied feature of Innovation is that it must be useful (Gronhaug and Kaufman 1988; Padmore, Schuetze, Gibson, 1997 and Cooper 1998). This distinguishes an Innovation from an invention, which may not have practical application. Especially in a business sense, it is desired that an Innovation contribute to the organisational performance in some way. Innovation Climate is a good tool for implementing organisational change and achieving a competitive advantage. The structural perspective suggests that Innovation Climate is a manifestation of the structures of the organisation. The perceptual perspective views Innovation Climate as a psychological process where employees respond to their

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working conditions in a way that is meaningful to them. According to the interactive perspective employees interact to share ideas and formulate similar meanings and opinions. Finally, the cultural perspective suggests that Innovation Climate is created by a group of individuals who interact and share a common frame of reference. This shifts the focus from the perception of the individual to the perceptions of the group. Most organisations need to create new products and find new, improved ways of doing business in order to remain solvent. Organisations are fighting a continuous battle to remain competitive due to intense international competition, rapid technological advances and maturing customer expectations (Montes, Moreno and Fernandez, 2004). Innovation Climate allows organisations to perform effectively and stay competitive. The strongest correlation was between organisational climate and the change-oriented leadership style and the weakest correlation was between organisational climate and the task-and-structured-oriented leadership style (Ekvall, 1996).

III. Importance Of Innovation Climate and Technology Capability

The pace of global, economic, and technological development makes change an inevitable feature of organisational life (Andriopoulos, Dawson 2009). The concepts of change, creativity and innovation have never been more topical, especially given the commercial context of fierce business competition, shorter product life cycles and more demanding customers. Increasingly, long-term commercial success is based on an ability to manage change, to nurture creativity and to promote innovation (Andriopoulos, Dawson 2009). Innovation climate study is needed for any organisation who wants to be dynamic and growth-oriented or to succeed in a fast-changing competent and competitive environment. Organisations can become dynamic and grow only through the efforts and competencies of their human resources. Personal policies can keep the morale and motivation of employees high, but these efforts are not enough to make the organisation dynamic and take it in new directions (Glisson, C. and James, L. R., 2002). Employee capabilities must continuously be acquired, sharpened and used.

When employees use their initiative, take risks, experiment, innovate, and make things happen, the organisation is found to have an Innovation Climate. Martins and Terblanche (2003), Climate for Innovation as an indicator of the capacity of organisations to become Innovative, i.e, the degree of support and encouragement an organisation provides its employees to take initiative and explore Innovative approaches is predicted to influence the degree of actual Innovation in that organisation. A supportive climate for Innovation effectively discriminates between best and worst performers (Isaksen and Ekvall, 2010).

IV. Technology Capability

The presence of technological capabilities is necessary for bringing about technological change. Technological capabilities are dynamic resources which encompass the skills, knowledge and routines (organisational arrangements) involved in generation and management of technological change; and indeed in all the stages of an innovation cycle. While good production capabilities may be sufficient for the survival of a firm in the short run, its long term survival depends crucially on its Technological Capabilities (Bell and Pavitt 1993).Technological capabilities can be described as knowledge and skills; technical, organisational and institutional, that allows productive enterprises to utilize equipment and information efficiently. Technological Capabilities can be thought of as bundles of complementary skills and knowledge which together with the organisational structures in which they are embedded, facilitate particular activities in the production system. They include knowledge which is embodied in people, codified in manuals and blue prints or embedded in organisational arrangements and procedural routines. Technological Capabilities are required not only for creation of new technological knowledge, but also for its acquisition, absorption and diffusion.

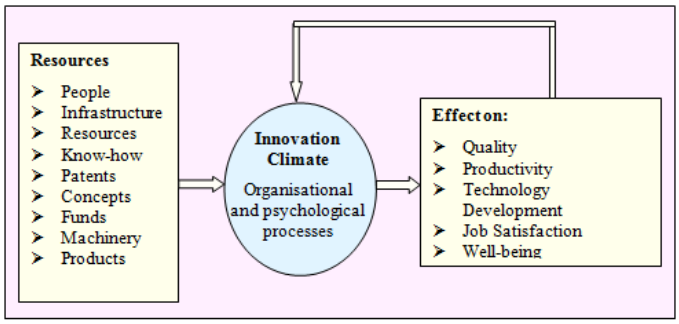

Fig. Innovation climate as an intervening variable (Source: Ekvall et al., 1996).

Incremental change and reverse engineering also require presence of certain level of technological capabilities. Technology markets being one of the most imperfect markets, these choices require some technological capabilities, as does the act of unbundling of technologies. Adaptation of acquired technology, to suit local conditions is also important. Adoption of existing technologies requires presence of certain technological capabilities (Bell and Pavitt 1993). Technological capability allows the firm to choose and to use technology for strategic purposes, to create new methods, processes and techniques (Afuah, 2002), and, primarily, to offer new products. The basic assumption is that Technological Capability results from the learning process through which firms internalise new knowledge to produce technological change and, consequently, new processes and products. It involves changing the production function rather than moving along the production function (Lall, 1992). This learning process can involve acquisition, imitation, adaptation, modification and/or the development of a new set of knowledge and technical systems for internal use. The result of this process should be goods and services with new technical standards for the firm. Once a firm has mastered a technology, they should put it to work.

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This has implications for the capability to efficiently operate the technology in order to produce tradable goods and services. Innovation Climate and Technological Capability of a firm are widely recognized as critical factors contributing to the firms performance, competitive advantage and sustained commercial success in the market and, therefore, they have been extensively investigated from different perspectives for a long time now. Technology Capability encompasses the organisation ability to identify its technological needs and to select the technology to fulfill the needs; operate, maintain, modify and improve the selected technology; and promote learning (Tushman, M. L. and C. A. O'Reilly; 2002). The major mechanisms of Building Technology Capability of a firm is Innovation Climate.

V. CONCLUSION

In the light of the above, it can be concluded that there exists a relation between Innovation climate and Technology capability building. The result of which, enhances the overall performance of the business organisations. The concept of Innovation gained attention, of number of researchers in the foreign countries but there are rare arguments from Indian context. The aim of this research is to study Innovation Climate and investigate the effect of Innovation climate on Technology capability building. The main focus of this research study is to suggest a model for enhancing Technology capability building in organisations.

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