Chapter 14

A Conceptual Framework for Achieving Flexibility at Strategic Level in Large- and Medium-Scale Indian Manufacturing Organizations

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ABSTRACT

Manufacturing organizations have to cope with hypercompetitive, uncertain, and increasingly dynamic environments these days. This increased dynamism is created by the rapidly changing needs of the customer, the fast changes in technology and market, etc. Developing flexibility in manufacturing organizations better prepares them to respond to dynamic market conditions and rapidly shifting customer needs. Manufacturing organizations today tend to improve and implement manufacturing flexibility at a strategic level. In this chapter, different strategies to achieve flexibility at strategic level are identified. Further, the type of strategies to be adopted for a particular flexibility dimension at strategic level and under particular market environment are studied. In this chapter, Analytical Hierarchy Process (AHP) and Fuzzy Set Theory (FST) are applied to develop a framework for achieving strategic flexibility in manufacturing organizations.

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1. INTRODUCTION

In manufacturing organizations, the basic competitive priorities generally considered by academicians and professionals are quality, delivery, price and flexibility. However, The flexibility has been a major area of focuses in the past decade. Flexibility bestows on a firm the ability to respond quickly to market opportunities and changing technologies and most likely to continue with ever increasing changes in the marketplace. Therefore, flexibility has been considered as a major competitive priority in manufacturing systems, in the field of operations management.

Manufacturing organizations must develop strategic flexibility in order to cope with the external pressure posed by frequent changes in customer’s expectations, changing market trends and competitor’s action (Aaker and Macarenhas, 1984; Eppink, 1978; Harrigan, 1985; Shimizu and Hitt, 2004). Flexibility at strategic level has been heralded as a major competitive weapon for manufacturing organizations operating in increasingly uncertain environments and turbulent markets. It has been considered in the literature that flexibility has the capability to provide organizations with the ability to change levels of production rapidly, to develop new products more quickly and more frequently, and to respond more rapidly to competitive threats.

Strategic flexibility is a multidimensional concept. MacKinnon et al. (2008) suggested five constructs which comprise strategic flexibility. They are:

- **Operational Flexibility**: The flexibility of a firm’s production and / or business processes.
- **Human Capital Flexibility**: The “flatness” of a firm’s organizational structure, and commitment to a culture of flexibility including knowledge sharing / management, cross-functional training, outsourcing, and other nontraditional work arrangements (eg: telecommuting).
- **Information Flexibility**: The flexibility of a firm’s information system, particularly a firm’s ability to obtain required information from both its transactional and analytical systems. Information flexibility can be separated into two sub-constructs: Reporting flexibility, which is a firm’s ability to extract and view relevant data from its transactional systems, and analytical flexibility, which is a firm’s ability to extract and utilize historical data from its data archives for analysis and decision support.
- **Supply Chain Flexibility**: A firm’s ability to quickly and efficiently remove, add, and exchange information with its external supply chain partners.
- **Financial Flexibility**: A firm’s resource commitment to, and ability to absorb the cost of exercising flexibility until it begins to pay for itself.

Dixon et al. (1990) associates the flexibility with quality, product, service and cost. Upton (1995) argues that the flexibility of the plants depends much more on people than on any technical factor. Dangayach and Deshmukh (2001) identified various dimensions of flexibility. They classified it into structural flexibility and infrastructure flexibility.

Shimizu and Hitt (2004) concluded that maintaining strategic flexibility is one of the most important tasks of managers and organizations in a dynamic environment. The strategic flexibility involves the creation, maintenance and realization of options for firm’s future (Bowman and Hurry, 1993). From the review of literature, it can be concluded that strategic flexibility is not a unitary concept, but it is governed by a variety of flexibility types.In this study, following five