

Chapter 18

Linkages in Advanced Manufacturing Strategy: A Literature Review

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ABSTRACT

Manufacturing is crucial for the robust growth of the economy, for exports and for generating substantial relevant employment. Manufacturing is a force multiplier; it means investment in manufacturing yields four times the effect on Gross Domestic Product (GDP) growth. The core manufacturing sector comprises engineering and construction, industrial manufacturing, materials and commodities, chemicals and plastics, and automotive. In today's era of globalization and competition, business excellence is important, which needs coordination between business and manufacturing strategy. Based on a systematic review of published articles from 1982 to 2012, the present paper proposes and discusses a framework which brings together a set of variables related to the manufacturing strategies and advanced manufacturing technologies and the internal contextual factors driving it. The purpose of this literature review is to investigate the adoption of manufacturing strategies and it is observed that strategic alignment of competitive priorities with business strategy improves the business performance of the manufacturing organizations.

1. INTRODUCTION

Over the years, manufacturing is evolved through the managerial decisions and practices. The structural decisions lay foundation for resource of the organization. The growth of Indian manufacturing depends on various such long term decisions. Manufacturing objectives cover cost, quality, delivery and flexibility and usually there are trade-offs between them. Flexibility and delivery are more important than quality and cost in the current manufacturing scenario. Customers want the delivery time as short as possible. To achieve this it is required to have a strategy. Basically there are four strategies: engineer-to-order, make-to-order, assemble-to-order, and make-to-stock. Customer involvement in the product design, delivery lead time, and inventory are influenced by each strategy (Arnold et.al, 2009). Today's world is extremely dynamic and fast changing. International competitors are continuously working on improv-

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ing manufacturing, bringing new products and making manufacturing more proactive and responsive (Chandra and Sastry, 1998). The new competition is in terms of reduced cost, improving quality, products with higher performance, a wider range of products and better services. Also it is required to understand the sequence of managerial decisions that need to be implemented to develop the competitive capability (Chandra, 2009). Mohanty (1995) elaborated on the corporate-manufacturing relationship in the contemporary context of global competition and outlined a need for improvements in corporate learning and development of effective methods for managing manufacturing functions from a strategic perspective.

The core idea with a literature review is to summarize the state of the art in the subject field, as a basis for identifying areas in which further research would be beneficial. The literature reviews are important in: (i) supporting the identification of a research topic, question or hypothesis; (ii) identifying the literature to which the research will make a contribution, and contextualizing the research within that literature; (iii) building an understanding of theoretical concepts and terminology; (iv) facilitating the building of a bibliography or list of the sources that have been consulted; (v) suggesting research methods that might be useful.

A comprehensive search of related research from 1982 to 2012 is applied to produce a synthesis of peer-reviewed literature. Based on this, 134 papers are collected (Table 1).

A survey of related literature shows that most studies on manufacturing strategies and Advanced Manufacturing Technology (AMT) adoption are confined to anecdotal studies of automation projects,

Table 1. Distribution of articles in journals

Journals	No. of papers	Percentage (% age)
International Journal of Production Economics	26	19.40299
Journal of Operations Management	16	11.9403
Decision Sciences	9	6.716418
Organization Science	7	5.223881
Production and Operations Management	6	4.477612
Strategic Management Journal	6	4.477612
Omega	2	1.492537
Journal of Management Studies	1	0.746269
Management	1	0.746269
Academy of Management Journal	3	2.238806
International Journal of Operations and Production Management	3	2.238806
Scandinavian Journal of Management	1	0.746269
Academy of Management Review	4	2.985075
Vikalpa	1	0.746269
International Journal of Production Research	2	1.492537
The Wallstreet Journal	1	0.746269
Harvard Business Review	2	1.492537
Sloan Management Review	4	2.985075
Academy of Management Executive	1	0.746269

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