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## Demand chain management: an integrative approach in automotive retailing

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#### Abstract

Recent reviews of the 'operations management' (OM) research literature have shown a surprising little shift towards empirical methodologies from traditional modelling solution methods. In addition, there is generally a lack of empirical testing and validation of manufacturing strategies. Coupled to this fact is that empirical work is rarely carried out in an inter-disciplinary manner, with the complete combination of OM, marketing, strategy, lean thinking and accounting approaches particularly poorly researched. Fully cross-functional integrative empirical research is required to help support the understanding of the applicability of OM practices within industry. This paper explores such an integration of approaches developed within the 'lean thinking, strategic cost management, marketing and policy deployment areas'. In order to investigate the approach a single automotive retailer is used as an instrumental case. The results of the study show that the new approach stands up well as an integrative approach that can prove highly beneficial results. However, the pilot work also identified a number of limitations that are the basis of further refinement and testing of the method.

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#### 1. Introduction

Ever since the pioneering work of Jay Forrester in the 1950s academics, consultants and practitioners have been searching for the 'holy grail' theory, method or solution that will cure all of their supply chain ills. Theories or approaches have come from systems dynamics, time compression, lean thinking, business process re-engineering, agility, mass customisation and the virtual organisation (respectively, Forrester, 1961; Stalk and Hout, 1990; Womack and Jones, 1996; Hammer, 1990; Kidd, 1994; The Economist, 2001, Davidow and Malone, 1992).

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Previous debate has often attempted to show that one approach is superior to another and that a new approach answers all previously unanswered questions. In doing this, such research has provided many insights into the improvement of both the internal operations of companies and the wider network of customers and suppliers. However, almost invariably work has been attempted from a functional rather than process basis (Schonberger, 1986; Ostrenga and Probst, 1992) and in most cases has concentrated on finding the most efficient or effective way to sell the products or services produced (Porter, 1985; Towill, 1996), often relying on modelling solution methods (Scudder and Hill, 1998; Pannirselvam et al., 1999). Attempts to integrate the real demand or customer perspective into supply chain thinking, although not unknown, are far

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too rare (Christopher, 1992; Womack and Jones, 1996; Archer and Wesolowsky, 1996).

In addition, in many previous approaches researchers have attempted to develop an appropriate solution to the improvement of the real case supply chain based on a specific methodological approach, which often leads to predictable solutions. For instance, advocates of 'systems dynamics control theory' invariable suggest the elimination of a distribution tier (Towill, 1996), whereas followers of the 'parallel interaction' school may be required to adopt a supplier development and co-ordination approach (Wilding, 1998). There appears to be a significant danger here that solutions are not being tailored to particular 'supply chain' requirement, but more to the prescriptive solutions of particular approaches. Thus, the key determinant of the solution may be the method chosen and not always the actual supply chain dynamics. What is called for is an integrative approach that seeks to gain a more holistic and contingent decision making approach.

#### 2. An integrative approach

Table 1

An integrative approach

In order to develop such an approach the authors have attempted to draw from four complimentary management areas, namely, 'process-based lean management, strategic cost management, marketing and policy deployment'. However, presently none of these approaches with their respective toolkits, on its own, is capable of a truly holistic approach. Each has its own strengths and weaknesses (Table 1).

The 'lean management' approach relies on five key principles: 'understanding customer value, identifying the value stream that adds this value, creating flow of product and information, using customer pull' and in so doing 'seeking a wasteless perfection state' (Womack and Jones, 1996). In order to implement such a 'lean system' a series of tools and approaches have been developed which primarily fall into two categories: diagnostic/analytical and implementation (Bicheno, 2000). Within the diagnostic/analytical area are the 'value stream mapping tools' (Hines and Rich, 1997; Rother and Shook, 1998; Hines and Taylor, 2000). The implementation toolkit includes a wide variety of tools drawn from the 'just in time and total quality/six sigma schools' (Shingo, 1989; Ishiwata, 1991). Although the 'lean' paradigm is widely accepted in manufacturing industry, it has yet to make a major impact away from the shop floor and particularly outside manufacturing firms. In addition, it does not presently have a widely accepted, rigorous customer focus approach, nor a good way of measuring financial benefits, although research is ongoing in both these areas (Hines et al., 1998; Brunt et al., 1998). Indeed, there is a general lack of material in the operations management (OM) literature

Process-based lean management	Strategic cost management	Marketing	Policy development
Strengths			
Effective non financial measures	Able to develop effective financial measures	Effective tools to understand customers	Holistic business approach
Analytical fact-based approach	Not overly bureaucratic	Effective at integrating with business strategy	Links financial and non financial measures
Practical approach	Can be linked to tangible benefits		Deploys strategy to operational areas
Addresses processes not functions	Addresses processes and/or functions		
Weakness			
Lack of financial measures	Lack of non financial measures	Lack of integration with internal processes	Lack of detailed operational tools
Lack of rigorous tools to understand customers	Lack of rigorous tools to understand customers	Lack of integration with financial performance	-
Often only employed in manufacturing shop floor environment	Lack of rigorous tools at the shop floor level		

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