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Demand chain alignment competence — delivering value through product life cycle management

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Abstract

This paper endorses demand chain alignment as a competence that supports effective product life cycle (PLC) management. Demand chain alignment integrates the demand creation (historic domain of marketing) and demand fulfilment processes (domain of supply chain management), to develop and to deliver products that convey superior customer value while deploying resources efficiently. So far, the relationship between demand chain alignment and PLC management has only been addressed from an operations and demand/supply chain perspective, but not from a marketing perspective. Three research propositions, on the relationship between both concepts, are derived from a literature review and applied to a case study from a global player in the tobacco industry. The findings do not support the current view that the product life cycle is a market-oriented classification variable for demand chain strategies. Instead, demand chain alignment needs to link customer needs-based segments with the supply chain. Moreover, PLC management and demand chain alignment have a mutually reinforcing relationship, in which PLC management can facilitate the competence development, ensures a dynamic perspective and, at the same time, benefits from aligned demand creation and fulfilment processes. Based on the findings, a model integrating demand chain alignment and PLC management is proposed.

Keywords: Product life cycle; Supply chain and marketing integration; Process alignment

1. Introduction

Product life cycle (PLC) management as the integrated, information-driven approach to all aspects of a product's life, from concept to design, manufacturing, maintenance and removal from the market, has become a strategic priority in many company's boardrooms (Teresko, 2004). For example, in the pharmaceutical industry, the development time for new drugs has almost doubled over the last 30 years and the average drug development costs exceed US $ 800 million. Reshaping the life cycle curve so that profitability starts earlier and maturity ends later is seen as a matter of survival (Daly & Kolassa, 2004). The automotive industry is another vivid example of where success or failure is strongly influenced by the company's ability to proactively manage product life cycles (Korth, 2003). Increased product complexity, greater reliance on outsourcing and a growing need for collaboration with a rapidly expanding list of business partners are the specific PLC management challenges the industry faces (Teresko, 2004). Furthermore, in high-tech or fashion industries, accelerated technological and design changes explain why PLC management is at the forefront (Supply Chain Manager Europe, 2005). PLC management confronts the need to balance fast response to changing consumer demands with competitive pressure to seek cost reductions in sourcing, manufacturing and distribution. It needs to be based on a close alignment between customer-facing functions (e.g. marketing, sales, customer service) and supply functions (e.g. purchasing, manufacturing, logistics) (Combs, 2004; Conner, 2004; Hughes, 1990; O'Marah, 2003).

A new, emerging business model, which builds on a close alignment between marketing and supply chain competencies and which has been related to product life cycles, is demand chain

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management (e.g. Aitken, Childerhouse, Christopher, & Towill, 2005). Demand chain management links demand creation (historic domain of marketing) and fulfilment (domain of supply chain) processes by starting with the specific customer needs, and designing the supply chain to satisfy these needs (Heikkilä, 2002). While most demand chain management contributions stem from supply chain management and operations (e.g. Childerhouse, Aitken, & Towill, 2002; Lee, 2001; Lee & Whang, 2001; Rainbird, 2004; Vollmann, Cordon, & Raabe, 1995), selected citations among marketing academics can also be traced (Baker, 2003; Jüttner, Christopher, & Baker, in press). More importantly, the link between product life cycles and demand chain management has not yet been addressed from a marketing perspective, but only from an operations and supply chain perspective. Here, product life cycles are primarily understood as a classification variable supporting the design of different demand chain strategies. Finally, to date, no contributions have investigated the development of demand chain strategies within organisations and this has been suggested as an important area for research (Aitken et al., 2005). This paper aims to fill the research gaps identified in the emerging demand chain management approach. It investigates the development of the demand chain alignment competence and the role of PLC management for the competence building process. The objectives of the paper are first, to define the role of PLC management within demand chain alignment; second, to demonstrate the advantages of a close linkage between PLC management and demand chain alignment and third, to explore the organisational consequences of such an alignment. The paper is structured into three parts. In the first part, the demand chain alignment competence is defined and three research propositions related to the proposed linkage with PLC management are derived from a literature review. Next, a case study from a global tobacco company is analysed to explore the research propositions in practice. Finally, in the third part, we incorporate our revised theoretical propositions in a proposed model and discuss the implications of the research.

2. An overview of the literature

Literature relating to our research focus arises in two contexts: first, perspectives on marketing, supply chain and integrated demand chain competencies and secondly, literature linking the product life cycle with demand or supply chain strategies.

2.1. Demand chain alignment competence

Ever since the emergence of the competence-based perspective of the firm in the 1980s and early 1990s (e.g. Barney, 1991; Grant, 1991; Prahalad & Hamel, 1990), different disciplines have aimed at identifying the specific functional competencies which contribute to a company's performance and competitive advantage. In the literature, not only have marketing (e.g. Conant, Modwa, & Varadarajan, 1990) and supply chain (e.g. Spekman, Spear, & Kamauff, 2002) competencies been related to competitive advantage, separately, but a number of studies can be cited which support the argument that the integration of both marketing and supply chain competencies can leverage a combined effect (e.g. Ellinger, 2000; Martin & Grbac, 2003; Piercy, 2002; Srivastava, Shervani, & Fahey, 1999; Waller, Dabholkar, & Gentry, 2000).

These works are characterised by a broadened view looking more comprehensively at demand creation competencies (marketing, product management, customer relationship management) and demand fulfilment competencies (supply chain management, logistics, operations, manufacturing). For example, Day (1994) suggests a classification of outside-in capabilities, inside-out capabilities and spanning capabilities. Outside-in capabilities such as market sensing, customer linking and channel bonding are needed to sense external opportunities and to decide how to best use inside-out capabilities such as integrated logistics, manufacturing processes or cost control. Finally, spanning capabilities like customer order fulfilment or new product/service development integrate the inside-out and outside-in capabilities. Waller et al. (2000) build on this classification and propose that the concept of market-oriented supply chain strategies captures the mutually reinforcing relationship between these three different capability types. Srivastava et al. (1999) develop a framework with three core processes, supply chain management, product development management and customer relationship management that generate value for customers as well as shareholders. The execution of these processes will come alive as organisational capability. The authors emphasise that exploiting the interdependencies between these core business processes is more likely to lead to marketplace success.

The integration of marketing and supply chain processes, the main tenet of these earlier works, is also captured in the emerging demand chain management concept. Demand chain management has been defined as "an understanding of current and future customer expectations, market characteristics, and of the available response alternatives to meet these through deployment of operational processes" (Rainbird, 2004, p. 242). The origins of this approach are in supply chain management, and its proponents claim that in today's market environment a shift in the focus of supply chain management is needed (e.g. Holmström, Hoover, Louhilouto, & Vasara, 2000). Many conventional supply chains are designed from the 'factory outwards' rather than from the 'customer backwards'. Underlining traditional thinking on supply chain design has been the implicit objective of enabling the achievement of purchasing, manufacturing and distribution efficiencies. Still, as Piercy (2002) argues, a supply chain strength that is not linked to marketing differentiation usually limits the company to competing on price and availability; a strategy followed, for example, by cheap generics providers. Moreover, Lee (2001) emphasises the problems of supply chain management acting independently of marketing management. Differentiated demand for products and services is a key input to supply chain management. If consistent and timely customer and demand information does not flow, the company will not be able to respond to differentiated needs of individual customers and customer segments. Companies which effectively link their customer and supply chain operations gain competitive advantage by differentiating not only customer-needs based products and services, but also the underlying delivery processes (Jüttner et al., in press). By closely linking the supply chain with demand processes, these companies can more proactively address emerging and changing