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Managing international supply: The balance between total costs and customer service

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ABSTRACT

Many trading companies have taken a global approach to their supply markets, sourcing from low-cost foreign countries in order to achieve cost reductions. There remains, however, a lack of evidence that sourcing internationally actually leads to improved economic performance. This can be explained by two key challenges in terms of how to achieve a balance between: (1) purchasing and logistics costs, and (2) customer service. The purpose of this paper is to examine the organisation and management of international supply from a total cost perspective, taking into account both purchasing and logistics costs, as well as customer service and agility. Previous research into a number of Norwegian companies that have sourced from China has identified four configurations for managing international supply. This paper utilises the supply management literature and an example of a Norwegian retail and wholesale company to analyse and discuss these configurations and their effects on total costs and customer service. The paper's theoretical contribution is the conceptualisation of a total cost perspective on international supply management and the discussion of such costs in relation to customer service. This contribution may, in turn, aid companies that source from foreign, low-cost countries.

1. Introduction

The present business landscape is characterised by global competition and high cost pressures, both of which have motivated companies to take a global approach to their supply markets. The last few decades have seen a dramatic increase in foreign sourcing, which has been made possible by changes in global economic policy and technological revolutions in transport and telecommunication (Skjøtt-Larsen, Schary, Mikkola, and Kotzab, 2007; Trent and Monczka, 2003). Sourcing in low-cost countries such as China has created the opportunity for cost reductions due to fewer regulatory controls and significantly lower wages (Christopher, Peck, and Towill, 2006; Nassimbeni and Sartor, 2007). However, companies that source in such countries face several challenges relating to the organisation and management of supply. Despite lower purchasing prices, sourcing in these countries often implies that while logistics costs, such as inventory and transport costs, may increase the ability to react to changes in customer demands – that is, a company's agility – may decrease due to longer lead times and uncertainty in supply (Trent and Monczka, 2003).

The purpose of this paper is to examine different ways to organise and manage international supply. The basic assumption that underpins the paper is that obtaining the benefits from sourcing in low-cost countries presupposes an organisation of supply operations that considers the logistics costs and also ensures agility and quick response to changes in customer demands. The paper analyses and discusses four international supply management configurations, which have been identified in prior research on Norwegian companies that have purchased from China. As an example, the paper uses a Norwegian retail and wholesale company that uses all four configurations based on different considerations. The four configurations are distinguished according to how the supply operations are organised in terms of the structure and interdependencies between the logistics activities and resources involved, and how the different actors relate to each other. The configurations are discussed in terms of their subsequent results for logistics costs and customer service level.

The paper is structured as follows: Section 2 provides the theoretical basis for an understanding of international supply management, based on the literature of supply management and strategies; Section 3 uses the theoretical discussion to analyse and discuss the four different international supply configurations, using the retail and wholesale company as an example; Section 4 outlines the main theoretical and practical implications of the discussion and the paper concludes by identifying the limitations of the paper and proposing suggestions for future research.

2. Theoretical basis

2.1. International purchasing and global sourcing

The last two decades have seen a dramatic increase in the globalisation of supply markets. In their study of changes and trends in purchasing and sourcing in the United States, Trent and Monczka

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(1998) found that purchases from foreign sources increased from 9 percent of total purchases to 27 percent during the 1990s, with the increase expected to continue in the following years. The respondents (US executive managers from a broad range of industries and geographic locations) reported that the main reasons for this trend were cost reduction pressures and the need to gain exposure to worldwide processes and product technology.

Unit price reduction is the key driving force that leads Western companies to source from the emerging economies (Trent and Monczka, 2003). China in particular has become one of the most attractive sourcing basins since its entrance into the WTO in 2001 and its subsequent liberalisation of trade and opening up to foreign investment (Nassimbeni and Sartor, 2007). Wal-Mart, for example, sourced products worth 15 billion USD from China in 2003 (Skjøtt-Larsen et al., 2007). Cost reductions are possible in China and similar countries due to fewer regulatory controls and significantly lower wages (Christopher et al., 2006). In addition, technological and organisational advances facilitate sourcing in these countries. As Skjøtt-Larsen et al. (2007, p. 18) suggest, "The development of new information and telecommunication technologies combined with efficient, fast and relatively cheap global transportation systems opens new possibilities. This enables enterprises to reach beyond their own organisational and geographical boundaries to coordinate operations and management through the entire supply chain, without the investment and problems of direct ownership." Nevertheless, there is still a lack of evidence that global sourcing actually leads to better economic performance (Gelderman and Semeijn, 2006). Despite the recognised advances in technology, logistics still pose a significant barrier and companies underestimate the true costs of international purchasing when searching for the least expensive sources of supply. One-quarter of the unit cost savings from worldwide purchasing activities are lost when the total cost of purchase ownership is estimated (Trent and Monczka, 2003). This is due to the hidden costs associated with longer lead times and increased administrative and budget costs incurred in global strategy development and execution. Studies of the UK retail garment industry suggest that, in some cases, the move to offshore sourcing can quadruple the time from order to delivery (Christopher et al., 2006). Longer transport distances, increased lead times and uncertainty in supply, often accompanied by additional inventory across extended material pipelines, increase the total logistics costs and the supply risk (Trent and Monczka, 2003). As Christopher et al. (2006, p. 278) remarked, "The paradox is that supposedly low-cost off-shore sourcing strategies can end up as high-cost supply chain outcomes."

According to Stock and Lambert (2001), the key supply management function and competence is the ability to analyse the total costs of a particular supply chain. Supply managers must take the total costs of logistics into consideration and balance these costs in relation to marketing objectives and customer service. Fig. 1 illustrates the trade-offs between different costs in marketing and logistics.

The model illustrates that, at a given level of customer service, management should minimise the total costs of logistics rather than the individual costs, because a decrease in one is likely to lead to an increase in another. For example, reducing inventory costs by keeping little stock will often require more frequent deliveries and increased transportation costs. The total costs of logistics include inventory carrying costs, lot quantity costs, transportation costs, warehousing costs and order processing and information costs. Furthermore, these must be related to the marketing variables of price, product, place and promotion or, in other words, ensuring that customer service is maintained and the goods are delivered on time and are accessible when needed and that flexibility is inherent in the chosen solutions. According to Lee (2004), many companies tend to emphasise efficiency and cost reductions when building their supply chains at the expense of agility, which refers to a company's ability to react quickly to changes in customer demands. A typical example is a company that delivers only full container loads to customers in order to reduce transportation time and costs. When customer demands fluctuate, the company is unable to react, which results in stock-outs in store and lost sales. The question, therefore, is how to strategise so as to achieve the potential benefits of cost reductions while also ensuring adequate customer service.

2.2. Global sourcing strategies

A sourcing strategy on a global scale must overcome many barriers that prevent its successful execution. The ability to source globally is a critical competence (Gelderman and Semeijn, 2006; Kotabe and Murray, 2004) and "may well be one of the last untapped areas that offers the kinds of performance breakthroughs required to remain

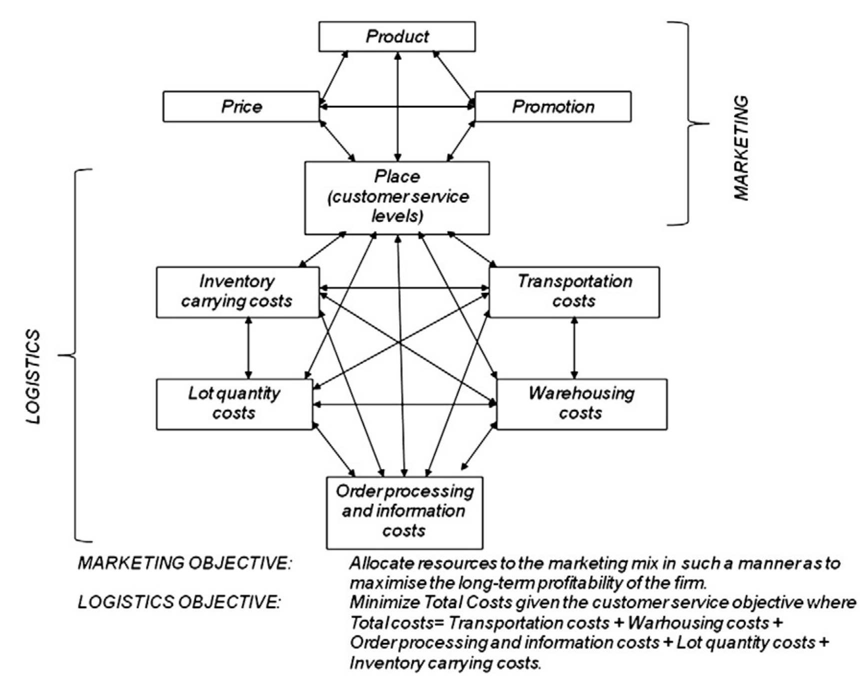

Fig. 1. Cost trade-offs required in marketing and logistics. Source: Stock and Lambert (2001, p. 86). *© Douglas M. Lambert. Used with permission, all rights reserved.*