Journal of Purchasing & Supply Management 17 (2011) 158–166

Contents lists available at ScienceDirect

Journal of Purchasing & Supply Management

journal homepage: www.elsevier.com/locate/pursup

Trade-offs in make-buy decisions

Mandar Dabhilkar [a,b,*]

[a] School of Industrial Engineering and Management, Department of Industrial Economics and Management, KTH—Royal Institute of Technology, 100 44 Stockholm, Sweden
[b] KITE Research Group, Linköping University, 581 83 Linköping, Sweden

ARTICLE INFO

Available online 21 April 2011

Keywords:
Operations strategy
Make-buy decision
Trade-offs

ABSTRACT

While the previous literature uses transaction cost economics and the resource-based view to theoretically derive the benefits of outsourcing, it has so far overlooked how these theoretical underpinnings must be used to assess trade-offs involved in make-buy decisions as well. This study investigates trade-offs in make-buy decisions for the buying firm. It takes an operations strategy perspective and links manufacturing firms' competitive priorities to outsourcing motives and resulting capabilities. Survey data from a representative sample of 136 manufacturing plants in Sweden is subjected to regressions analysis. In contrast to earlier empirical research, this study shows that resulting capabilities of strategic outsourcing initiatives are distinct, and, furthermore, do not emerge cumulatively. This has important implications for the ongoing debate over trade-offs in the operations strategy literature. Findings are clearly in support of the trade-off model and extend current research into the theoretical domain of make-buy decisions.

1. Introduction

While current theory is able to explain the underlying rationales behind different motives to outsource manufacturing, it fails to consider that these motives often conflict. As an example, studies single out lower costs and greater flexibility as among the main motives to outsource manufacturing (e.g., Ulrich and Ellison, 2005). Ulrich and Ellison (2005) argue that the rationale behind the lower costs is that suppliers with several customers can achieve greater economies of scale than individual customers could on their own. Furthermore, they propose that the rationale behind suppliers' greater flexibility is their ability to pool demand from several customers, since the variability in demand at the supplier stage will be less than that of their individual customers. Yet although each of these rationales is true, it is wrong to assume that lower costs and greater flexibility are achieved simultaneously when outsourcing manufacturing. Rather, the present study argues that these motives are in conflict, implying that improvements in their corresponding performance indicators have to be traded off when outsourcing manufacturing.

The purpose of this study is to add to the debate over trade-offs in operations strategy by extending the literature into the theoretical domain of make-buy decisions. So far, this debate has focused on whether or not there is a need for trade-offs within the factory walls of the focal firm (Boyer and Lewis, 2002; Rosenzweig and Roth, 2004). However, as firms become less vertically integrated, the scope of analysis must be broadened to a greater share of the supply chain (Gupta et al., 2006; Hayes, 2002). Therefore, the present study includes make-buy decisions.

2. Theoretical frame of reference and hypothesis development

2.1. Trade-offs in operations strategy

Wickham Skinner introduced the idea of trade-offs in operations strategy in his seminal *Harvard Business Review* articles in 1969 and 1974 (Skinner, 1969; Skinner, 1974). The US manufacturing sector was in crisis; in order to prevail, he argued, companies had to prioritise among a set of competitive priorities, namely cost, quality, speed and flexibility. Firms neglecting to do so, sacrificing performance in some objectives in order to excel in others, would simply end up second best in all. The underlying logic here is that manufacturing firms are viewed as technologically constrained systems, with inherent limitations in equipment, space, process technology and other resources such as labour and capital. All of these limitations make trade-offs in the decision-making process inevitable. Therefore, to be competitive, a company has to focus its efforts and resources on one specific mission. This type of manufacturing strategy, well known as the *focused factory*, advocates ranking strategic objectives and then targeting one objective at a time. The effectiveness of an operations strategy is determined by the degree of consistency among competitive priorities and corresponding decisions regarding operational structure and infrastructure. The make-buy decision is such a decision.

* Correspondence address: School of Industrial Engineering and Management, Department of Industrial Economics and Management, KTH—Royal Institute of Technology, 100 44 Stockholm, Sweden.
E-mail address: mandar.dabhilkar@indek.kth.se

1478-4092/$ - see front matter © 2011 Elsevier Ltd. All rights reserved.
doi:10.1016/j.pursup.2011.04.002

However, Skinner's idea of having to make trade-offs when implementing operations strategy has been challenged since the mid-1980s (e.g., Ferdows and De Meyer, 1990; Nakane, 1986). In sharp contrast to Skinner's trade-off model, these scholars suggest an alternative, namely the *sand cone model*. They were mainly inspired by the experiences of successful Japanese firms such as Toyota, also known as world-class manufacturing (Schonberger, 1986). Their main reason for proposing the sand cone model was that world-class manufacturers could improve several performance objectives simultaneously without having to make trade-offs such as that between cost and flexibility.

In retrospect, the main merit of advocating the sand cone model is that it has spurred a debate over trade-offs that has sharpened the understanding of fundamentals in operations strategy. In particular, a special issue of *Production and Operations Management* (Benningson, 1996; Clark, 1996; Hayes and Pisano, 1996; Skinner, 1996) and two notes in the *Journal of Operations Management* (Schmenner and Swink, 1998; Vastag, 2000) have been instrumental in clarifying the issues involved. In summary, the main thrust is that although trade-offs in operations strategy remain on an overall level, certain advanced manufacturing practices can help to resolve often conflicting priorities, such as cost and flexibility, simultaneously. The logic here is that a firm can indeed move from one performance frontier to another, more efficient frontier by world-class manufacturing practices without trade-offs. But in the process the firm has to differentiate its offering to the marketplace by finding a unique position on the new frontier, and any move on the new frontier will create a trade-off. Schmenner and Swink (1998) and Vastag (2000) explain the theoretical underpinnings for this: A firm's proximity to its frontier indicates whether it may acquire cumulative capabilities or if it is subject to trade-offs among capabilities. Factories may achieve multiple capabilities simultaneously when they are operating far away from their performance frontiers. However, as a factory approaches its performance frontier (i.e., becomes fully utilised), building capabilities require more resources and intensify the need for focus. Thus, the trade-off model is most applicable to firms operating near their performance frontier.

So why is there a need to further understand trade-offs in operations strategy? The above discussion shows that the cumulative and trade-off models coexist in industrial practice and theory. The cumulative model works for firms far away from their performance frontiers. As firms approach these frontiers, the trade-off model is more applicable, as has been empirically validated by Lapre and Scudder (2004).

Yet there are two motivations for additional trade-off studies. First, despite the deeper understanding of the issues involved, the debate continues. As an example in favour of the sand cone model of cumulative capability development, Rosenzweig and Roth (2004, p. 366) maintain that the development of one generic manufacturing capability need not necessarily be at the expense of another.

Secondly and more importantly, the debate over trade-offs has so far only had an internal focus, while simultaneously there has been a tremendous increase in outsourced manufacturing. The trend toward increased outsourcing drives a need to expand the scope of analysis in operations strategy research to a larger share of the supply chain (Gupta et al., 2006; Hayes, 2002). Researchers must study not only focused factories, that is, focused internal manufacturing operations, but also focused sourcing decisions.

2.2. Make-buy decisions as a key strategic decision area in operations strategy

The present research idea, to extend the debate over trade-offs in operations strategy into the theoretical domain of make-buy decisions, fits well with the four key decision areas in operations strategy today. In the work of Slack and Lewis (2008), for example, these decision areas are: (1) capacity, (2) supply networks, (3) process technology and (4) development and organisation. Make-buy decisions are a fundamental part of the supply networks decision area, but, as mentioned earlier, previous studies have so far overlooked the trade-offs in outsourcing. Rather, most of the outsourcing literature is concerned with the advantages or motives for outsourcing, that is, to reduce costs, increase product quality, increase speed, increase flexibility and take advantage of suppliers' greater innovation capability. The risks involved are clarified in these works but not addressed and articulated in terms of trade-offs (Beaumont and Sohal, 2004; Harland et al., 2005; Quélin and Duhamel, 2003).

In this study outsourcing manufacturing is defined as a factory arranging to have parts that formerly were manufactured internally provided by an external supplier (Cánez et al., 2000). The decision whether and what to outsource is viewed as a distinct strategic choice in devising an operations strategy (Voss, 2005). Furthermore, the term *outsourcing manufacturing* is used to denote that only manufacturing operations are under investigation in this study, not other kinds of operations such as IT or HR functions. Finally, the term should not be confused with complete outsourcing or contract manufacturing, though this definition includes these types of outsourcing.

The theoretical underpinnings for make-buy decisions can be traced back to both transaction cost economies (TCE) (Williamson, 1975, 1985) and the resource based view (RBV) (Barney, 1991; Peteraf, 1993). The former specifies under which economic conditions an organisation should manage an exchange internally within its boundaries and which are suitable for managing an exchange externally, i.e., outsourcing. The latter views the firm as a bundle of resources that, if employed in distinct capabilities, can create competitive advantage. Such distinct capabilities are viewed as core business (Prahalad and Hamel, 1990) and should consequently be internalised, whereas non-core business is outsourced.

TCE and RBV help to identify a number of critical factors that inform the make-buy decision. Starting with transaction costs, these are defined as the costs of planning, adapting, coordinating and safeguarding exchange (Cousins et al., 2008). The level of transaction cost is determined by two behavioural factors and two transaction factors (Williamson, 1975, 1985).

The behavioural factors are opportunism and bounded rationality. Opportunism refers to seeking self-interest with guile. Not all suppliers will behave opportunistically, but it is impossible for the buying firm to distinguish those who will cooperate and those who will behave opportunistically. Such difficulties and associated costs increase as transactions are characterised by asset specificity. Where there is high potential for opportunism, TCE predicts a greater likelihood the activity will be performed internally (McIvor, 2009). Bounded rationality refers to the cognitive limitations of the human mind, which increase the difficulties of fully understanding the complexities of all possible decisions. In uncertain environments, TCE predicts due to bounded rationality that the activity will be performed internally (McIvor, 2009).

The transaction factors are asset specificity and uncertainty. Asset specificity refers to how specialised a particular asset is to a relationship. Highly specialised assets are risky, since the full production value of the asset cannot be transferred if the relationship is terminated ahead of time. A relationship with high asset specificity increases the possibility of opportunism and therefore favours hierarchy, as the specific assets are costly to re-deploy in alternative uses (McIvor, 2009). Transaction-related uncertainty mainly refers to not being able to predict future states of technology, demand or supply (Cousins et al., 2008; Holcomb and Hitt, 2007). TCE predicts