

# Analysing the Fit Between Innovation Strategies and Supply Chain Strategies

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**Abstract** Drawing on the concept of strategic fit, this conceptual paper seeks to clarify the relationship between innovation strategies and supply chain management strategies. This work seeks to propose a conceptual framework to help advance research in this area. A literature review was conducted as a basis for developing a unified framework which best reflects the relationship and fit between the different strategies in each area, something which has been clearly under researched from the strategic fit perspective. The findings can be used to guide the decision making of managers in the areas of innovation and supply chain. Additionally, they can serve as a reference for helping coordinate with other areas of the business, in order to ensure the correct fit between activities and strategies.

**Keywords** Innovation strategies · Supply chain strategies · Fit · Alignment

## 1 Introduction

The introduction of corporate strategies and their application to the business are recognised as highly important factors in the search for competitive advantage. Strategy covers a wide range of areas within the business, and commonly, also includes concepts related to innovation and supply chain (SC) management, two areas of great importance to a company's competitiveness. At the same time, many

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of the problems and difficulties associated with the management of innovation (Anthony et al. 2006; Pisano 2015) and the supply chain (Fisher 1997; Qi et al. 2009) stem from the lack of clear strategies which define the objectives of these processes.

The importance of strategic fit, or just fit, is one of the oldest ideas in strategic management (Porter 1996; Venkatraman and Camillus 1984). Porter (1996) highlights the importance of fit for the success of a firm's strategies, stating that a lack of fit between activities leads to a failure to differentiate the strategy. As such, fit is seen as the adjustment of one variable in relation to another, in such a way that the combination gives rise to the best results (Donaldson 1987; Venkatraman 1989; Venkatraman and Camillus 1984; Wu et al. 2014).

Agreement has grown in the literature on innovation that the combination of internal and external sources of knowledge is a fundamental factor in the success of the chosen innovation strategy (Love et al. 2014; Veugelers and Cassiman 1999). At the same time, although the relationship between innovation and supply chains is relatively strict and it has been subject to considerable attention by researchers in recent years, the alignment between innovation and SC strategies is a relatively little studied area of the literature (Zimmermann et al. 2016).

Using the fit concept as a basis, this study seeks to clarify the relationship between innovation strategies and supply chain management strategies. Following from this, a conceptual framework is proposed, helping to contribute to the advancement of knowledge in this area and to the development of strategies for business.

## 2 Innovation Strategies and SC Strategies

Confronted with increasing competition in their target markets, firms from differing sectors and with differing styles typically include objectives linked to innovation in their strategic plans (Veugelers and Cassiman 1999). However, adopting innovation strategies is not yet a common practice among companies (Anthony et al. 2006; Guan et al. 2009; Pisano 2015) and receives relatively little attention in the academic world.

Some authors present classifications for innovation strategies based on characteristics that they consider important and differentiate them in this process. The model proposed by Clausen et al. (2012) considers five strategies: ad hoc; supplier based; market-driven innovation; R&D intensive; and science-based innovators.

Supply chain management, just like innovation management, is a common theme in corporate strategic plans for many organisations. However, while it is also recognised as a source of competitive advantage for organisations, firms do not always define their objectives with respect to the SC. Besides this, the topic has received little attention in the academic world (Qi et al. 2009; Qrunfleh and Tarafdar 2014; Sharifi et al. 2013).

The model proposed by Marshall Fisher in his important and influential article published in the *Harvard Business Review* in 1997 (Fischer 1997) led many authors to adopt two types of SC strategy: Lean—equivalent to the Efficient strategy of Fisher, and Agile—equivalent to the Market-responsive strategy of Fisher (Christopher and Towill 2002; Qi et al. 2009, 2011; Qrunfleh and Tarafdar 2014).

### 3 The Concept of Fit

For Venkatraman (1989), the concept of fit is a fundamental element for constructing theory in a wide range of different areas, including strategic management. Naman and Slevin (1993) state that understanding the concept of fit is fundamental for understanding the difference between the field of strategic management and other fields, such as finance, human resources and marketing.

Venkatraman and Camilus (1984) argue that, in accordance with the strategic theory that sees firms as open systems, strategy can be understood as the act of combining the different elements which make up the strategic mix of the company—internal, such as skills and resources, and external, such as opportunities and threats. In this scenario, this combination is known as fit.

In this study, fit is understood to be the adjustment of one or more variables—activities, strategies, business areas or organisations—relative to the others, such that the combination leads to improved results (Donaldson 1987; Venkatraman 1989; Venkatraman and Camillus 1984; Wu et al. 2014).

This concept is reflected in what Venkatraman (1989) defines as “fit as matching”; “This perspective is invoked for strategy concepts in which fit is a theoretically defined match between two related variables” (Venkatraman 1989, p. 431).

It is notable that while there are differences between the concepts of fit and alignment, many studies use the two concepts in a similar way. Alignment can be thought of as the effort made by organisations to ensure that their activities and strategies pull in the same direction in a synergistic way. At the same time, fit is understood as the result of the forces which align the variable involved.

The concept of fit has been studied over the years in different areas and contexts in the literature. Table 1 presents different approaches to the concept of fit in the literature.

### 4 Conceptual Framework

The way firms approach innovation and in their supply chains, as well as the strategies they embraced, impact on the performance of the processes and the organisation as a whole. According to the concept of fit, the fit between different variables in the firm—in this case, internally—can be a driver for optimising results.

**Table 1** Examples of the how the concept of fit is used in the literature

Author/Year	Journal	Approach to fit
Henderson and Venkatraman (1990)	MIT Sloan Management	Analysis of the fit between the IT strategies and the corporate strategies
		Analysis of the fit between the firm and its environment, its strategies, structure or processes
Stock et al. (2000)	Journal of Operations Management	The fit between two related functions
Gonzalez-Benito (2007)	Journal of Operations Management	An analysis of the fit between purchasing strategies and corporate strategies
		The fit of the strategies in a specific area to the capabilities in the same area—understood as the effectiveness of the area in question
Kodali (2011)	Measuring Business Excellence	A study of the fit between SCM strategies and corporate strategies
Acur et al. (2012)	Journal of Product Innovation Management	Analysis of the different types of internal and external alignment, the influencing factors and the effects of fit on the process of developing new products
Wu et al. (2014)	International Journal of Production Economics	Study of the fit between the supply chain management strategies and the corporate strategies
Ryu et al. (2015)	IEEE Transactions on Engineering Management	Alignment between the service innovation strategies and the business strategies and their effects on the performance of the firm
Prajogo (2016)	International Journal of Production Economics	Fit between the firm's strategies (or one area) and the business environment for the firm

As such, the analysis which follows is based on the principle that the different combinations of strategies—innovation and SC—will lead to different results.

According to Clausen et al. (2012), the firms which are part of the ad hoc group invest little in research and development activities and they have no solid commitments to others (knowledge sources). As such, these firms have slower learning paths and, given that this strategy produces relatively little innovation, the firms are less able to invest the profits from previous innovation in the next round of innovative activity (Clausen et al. 2012). Firms which depend mainly on their suppliers as a source of knowledge for innovation belong to the group of supplier-based strategy (Clausen et al. 2012). Adopting this strategy can be seen as an incremental approach to innovation where the firms do not invest a large amount of internal resources in innovation.

The Lean strategy seeks to create efficient supply chains, in terms of costs, focusing on a reduction in lead times and an elimination of the stock waste. This strategy fits well with stable and predictable demand and products that change little

(Christopher and Towill 2002; Qi et al. 2009, 2011; Qrunfleh and Tarafdar 2014). The main objective of an SC Lean strategy is to reduce costs and increase efficiency by eliminating waste, both in the internal processes and the external processes of the organisation (Qi et al. 2009). This, this can be seen to be most consistent with the ad hoc and supplier-based strategies.

On the other hand, firms which adopt a market-driven innovation strategy have their innovation focus centred on the customer and look for knowledge from industry sources, such as competitors and customers (Clausen et al. 2012). As such, firms seek out this type of relationship and they invest a high level of resources in the innovation process.

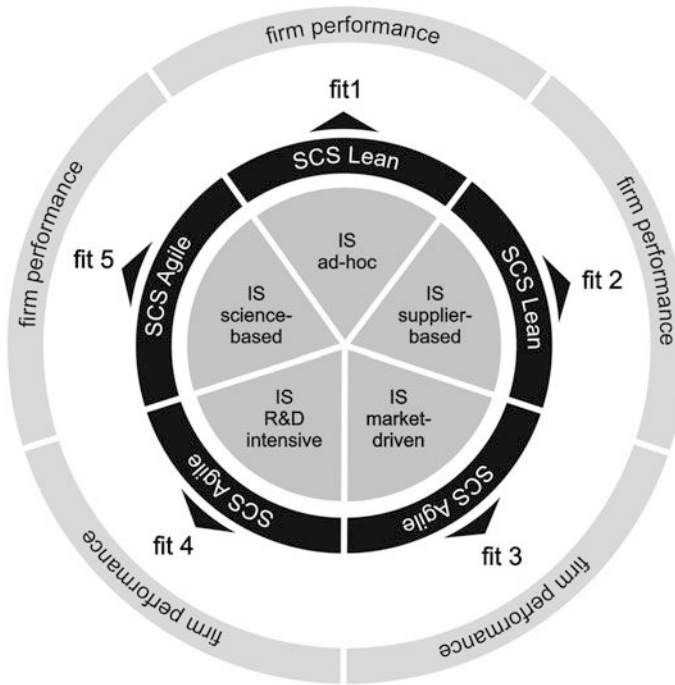
The Intensive R&D strategy is adopted by firms which tend to have a wide range of objectives and innovation sources, while being especially focused on internal and external R&D processes (Clausen et al. 2012). This strategy favours the development of radical innovations and increases the learning capacity of the firm. The approach requires continual effort and attentiveness from the supply chain, or in other words, characteristics associated with the Agile strategy type.

Firms with Science-based innovation strategies are highly dependent on scientific knowledge sources, such as patents, and the relationship with universities and research institutes as part of their innovation process. Firms in this group tend to be persistent innovators—measured by the number of organisations which innovate, given that they have more or less ability to innovate again in subsequent periods—with basic science offering great technological opportunities (Clausen et al. 2012). This type of strategy also requires a response from the supply chain.

An Agile SC strategy, in turns, seeks to guarantee the flexibility and adaptability of the SC given the constant changes in the needs of the customers and the competitive environment, using rapid, dynamic and continuous responses (Christopher and Towill 2002; Qi et al. 2009; Qrunfleh and Tarafdar 2014). The objective of this type of strategy is to devise products which are focused on the needs of the customer (customer-driven products) with unique characteristics for the market, so that the competitive advantage is retained in constantly changing environments. The reduction in the life cycles of the products leads to an increase in pressure on the SC as a whole to provide products and services in a more rapid and responsive way (Qi et al. 2009). This SC strategy seems to fit better with the last three innovation strategies. Figure 1 shows the conceptual framework which reflects the relationship between the strategies.

## 5 Implications and Conclusions

The framework that has emerged from this work can be used as a reference by managers for decision making in terms of adopting innovation and supply chain strategies. Additionally, it can be used as a way of encouraging the alignment between these and other areas of the business, helping with the fit between activities and strategies. The study shows that knowledge of the reality of other functions in



**Fig. 1** Conceptual framework

the business—with the same true of external partners—it is possible to make better adjusted decisions, making it possible to achieve better results.

We conclude that not only should the definition of corporate strategies be a collective process, but that the definition of the strategies in the different areas and functions should also be carried out in a collective and collaborative way.

Many studies point to direct evidence that the complementarity between internal evidence—in general the internal activities of R&D—and the external access to knowledge represent a fundamental factor for the innovation process (Love et al. 2014; Veugelers and Cassiman 1999). The alignment between the innovation and SC strategies also leads to an improved fit between the internal activities of the firm and the activities of the partners. This is because the adopted SC strategy helps to orientate the selection and the definition of the way relationships work with the other actors in the chain, including the channels for exchange of information and knowledge.

We highlight the fact that the strategies, as shown in this work, are dynamic processes in constant evolution. Changes in the approach of the firm towards innovation should always lead to a re-evaluation of the SC strategies. The opposite is also true; in other words, changes in the way the supply chain works or in the SC strategies can necessitate changes in the way the firm manages innovation.

Considering the complexity of the environmental contexts, the processes and the firm's products, we also concluded that different strategies can coexist within the same organisation—both innovation and SC—depending on the products and markets. As such, it is also possible that a different fit between the strategies would be necessary inside the firm, in such a way as to make the most efficient use possible of the relationship between the level of uncertainty in demand (often associated with innovation) and the operational efficiency.

Finally, the main limitation of the study relates to the limitations imposed by the nature of the work; in other words, carrying out a literature review with the goal of developing a conceptual paper. However, as this is a first step in developing a theory of the relationship between innovation strategies and supply chain strategies, we believe that this study represents a significant contribution to the literature.

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