

Supply Chain Strategy: Empirical Case Study in Europe and Asia

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The purpose of this case study research is to present a literature review of supply chain strategy approaches, develop supply chain strategy framework and to validate a framework in empirical case study. Literature review and case study research are the research methods for this research. This study presents the supply chain strategy framework which merges together business environment, corporate strategy, supply chain demand and supply chain strategy. Research argues that all the different concepts that are currently used as supply chain strategy can be condensed into a presented supply chain strategy framework. Developed supply chain strategy framework is a practical tool for business managers. Future research could be multiple case studies in the global environment to develop further the supply chain strategy framework.

Key words: supply chain strategy, corporate strategy, supply chain management

Introduction

Supply chain management (scm) has been studied a great deal in the industrial economics field of research. Researchers of scm as well as the public have been interested in the published studies related to improving cost efficiency, optimizing the whole supply chain (sc), production control, stock management, agility, lean scm and sc integration.

scm is a management concept of the 2000's and it includes segments from the management concepts of the previous decades. Many definitions for scm have been presented but scm has been and is still regarded as a synonym for logistics, supply and sc control. Today the broader definition determined by the Global Supply Chain Forum is generally accepted as the norm (Lambert, Cooper and Pagh 1998; Cooper, Lambert and Pagh 1997): 'Supply Chain

Management (scm) is the integration of key business processes from end user through original suppliers that provides products, services, and information that add value for customers and other stakeholders.'

Supply Chain Council defined that there are four basic processes in the sc: plan, source, delivery and return. Plan refers to processes that balance aggregate demand and delivery requirements. Sources are processes that transform product to a finished state to meet planned or actual demand. Delivery is a process in which the finished goods are delivered to a customer. Return is defined as processes associated with returning or receiving returned products (Iskanius 2006).

Many scholars state that supply chain strategy must reflect the corporate strategy (Schnetzler, Sennheiser and Schönsleben 2007; Harrison and New 2002; Christopher, Peck and Towill 2006; Chopra and Meindel 2007; Waters 2009). According to a survey conducted by Harrison et al. (2002), two-thirds of all respondents thought that their supply chain strategy was significant or highly significant in terms of corporate strategy. According to Rose, Singh Mann and Rose (2012) however, there still exists a major gap between corporate strategies and supply chain strategies (Rose, Singh Mann and Rose 2012).

According to the literature review, the research gap is a relationship between corporate strategy and supply chain strategy. The goal of this research is based on the research gap and could be presented as to deepen knowledge in supply chain strategy approaches and to develop a supply chain strategy framework. The research problem is presented as a question: What are the supply chain strategy approaches?

Research Methodology

A literature review and a case study research were employed as the research methodologies in the study to develop a supply chain strategy framework. The literature on supply chain strategies was collected primary from journals in the areas of strategic management, supply chain management, operations research and operations management. The target was to focus on the latest journals from last decade and that is why dissertations, textbooks, unpublished working papers, and conference papers were excluded. The literature search included journals published by numerous publishers and research was done using Scopus, which is one of the largest abstract, and citation databases of research literature. Several hun-

dreds of journal articles were found and that is why the research has to focus on the most relevant, cited and newest journals.

Eisenhardt (1989) defines case study research as a research strategy that aims at understanding the internal dynamic of an individual case (Eisenhardt 1989). Case study research is aiming at understanding comprehensive and relevant phenomena of real life. In that case, the endeavour is to study the phenomena in their genuine context. Interface between the phenomenon and context is not often clear, which complicates the work of a researcher (Yin 2009).

Case study research is regarded as a good research method when the research problem can be described with the help of questions how and why. The method is very useful when a researcher cannot control the target. Furthermore, it is useful when the focus is on concurrent events in a real time manner especially when the border between the event and context is not clear. There are three types of case study research: explorative (seeking to find out more about a phenomenon) research, descriptive research and explanatory research. The purpose of explorative research is to obtain information regarding a phenomenon, find new ideas and possible research problems. In explorative research, already existing information is collected and sorted. The aim of descriptive research is to provide as accurate an image of an individual, group, situation or phenomenon as possible. In the research, the focus is not in clarifying connections between phenomena or factors interpreting behaviour, but only in describing a situation. The aim of explanatory research is to explain causal relations between phenomena and testing related hypotheses (Yin 2009).

In this study case study, research method is used to develop and validate supply chain strategy framework in the empirical case study.

Theory

CORPORATE STRATEGY

Nag, Hambrick and Chen (2007) define strategy as 'the major intended and emergent initiatives taken by general managers on behalf of owners, involving utilization of resources, to enhance the performance of firms in their external environments' (Nag, Hambrick and Chen 2007). Ramos-Rodríguez and Ruíz-Navarro (2004) identified the works that have had the greatest impact on strategic management research, which can be seen in table 1. They recognized that there are three different scientific disciplines from which the different fields of strategic management research have grown: eco-

TABLE 1 Theoretical Roots of Strategic Management

Academic views on Corporate Strategy		
Economic-based	Sociology-based	Psychology-based
Evolutionary economics	Contingency theory	Power
Transaction cost theory	Resource dependence	Pattern
Industrial economics	Organisational ecology	
Resource-based view	Ecosystem	
Agency theory		

NOTES Adapted from Ramos-Rodriguez and Ruíz-Navarro 2004.

nomics, sociology and psychology. Economics has been the founding theory for such strategic management fields as evolutionary economics, transaction cost theory, industrial economics, resource-based view of the firm and agency theory. Sociology with its different theories is the foundation for such fields as contingency theory, resource-dependence theory, organisational ecology and ecosystem. The most popular psychological views of strategic management include power and pattern views to strategy creation (Ramos-Rodríguez and Ruíz-Navarro 2004).

Economics Based Strategic Management Fields

Evolutionary economics theories try to explain 1) the movement of something over time or why something is what it is at the moment in time in terms of how it got there, and 2) how some random elements generate or renew some variation in the variables in question, and what mechanisms systematically winnow extant variation (Valentino and Christ 1990).

Transaction cost theory is as old as evolutionary economics. It studies the relationship between a firm and its environment through a contractual or exchange-based approach (Kujala et al. 2006). According to Hoskisson et al. (2000), if the transaction costs of markets are high, hierarchical governance modes will enhance efficiency, although they can have their own bureaucratic costs (Hoskisson et al. 2000).

Ramos-Rodríguez and Ruíz-Navarro (2004) identify that the prime contributions of industrial economics to strategic management literature are the structure-conduct-performance paradigm and the study of strategic groups (Ramos-Rodríguez and Ruíz-Navarro 2004; Porter 1980) illustrates three potentially successful generic strategic approaches to attaining competitive advantage and thereby outperforming other firms in an industry: differentiation, cost-leadership and focus (Porter 1980).

According to the resource-based view, the resources of a firm can be the source of a competitive advantage as long as resources are valuable, rare, inimitable and non-substitutable. Resource-based view is a complement to the traditional emphasis of industrial economics on industry structure and strategic positioning within that structure as a source of competitive advantage (Eisenhardt and Martin 2000; Newbert 2007; Hoskisson et al. 1999).

Agency theory was born in the 1960s and it deals with relationships that arise when one self-interested individual (the principal) delegates some decision-making authority to another individual (the agent) according to a mutually agreed contract (Eisenhardt 1989; Schulze et al. 2001; Pavlou, Huigang and Yajiong 2007).

Sociology Based Strategic Management Fields

Contingency theory suggests that there is no optimal strategy for all organizations and posits that the most desirable choice of strategy variables alters according to certain factors, termed contingency factors. The traditional view of contingency theory is based on organizational theory and postulates that a change in environment requires a change in firm structure (Zajac, Kraatz and Bresser 2000; Zott and Amit 2008).

The resource dependence theory proposes that organizational success and ultimately survival occur by maximizing power through the acquisition of scarce and valuable resources in a stable and low-cost manner (Carter and Rogers 2008; Rai and Bush 2002).

Organisational ecology theory applies evolutionary and ecological perspectives, such as populations and communities of populations, in the domain of strategy and organisation theory (Lovas and Ghoshal 2000; Baum and Shipilov 2006).

An ecosystem consists of all those companies that depend on each other in terms of their success. Most importantly, a company's performance is increasingly dependent on the performance of something where the firm does not have direct control. Therefore, ecosystem-based approach encourages close-co-operation with those firms that are clearly part of the ecosystem (Iansiti and Levien 2004).

Psychology-Based Strategic Management Fields

The most influential views of psychology-based strategic management have been the power view, which studies strategy formulation as a political process, and the concept of pattern, which sees that strategy is often consistency in behaviour in the past,

not a pre-described plan (Ramos-Rodríguez and Ruíz-Navarro 2004; Mintzberg, Ahlstrand and Lampel 2009). When formulating strategy, managers are constrained and enabled through their internal and external allies and opponents. This kind of social struggle between different groups with different strengths shapes the actual strategic management process (Lawrence et al. 2005; Clark 2004).

The idea that strategy is more a realized pattern in the past than a set direction for the future is based on criticism towards the foundation of deliberate strategic planning – possibility of forecasting future, and empirical evidence that strategies emerge from weakly coordinated decisions of multiple organizational members (Grant 2003; Noda and Bower 1996) summarize that according to scholars who study strategic planning as a pattern, strategy is emergent from lower levels of organizations, whether through trial-and-error learning, incrementally with logical guidance from the top, or such that small changes are punctuated by a sudden big change in a relatively short period (Noda and Bower 1996).

SUPPLY CHAIN STRATEGY

Supply chain is probably most extensively defined as ‘a set of three or more entities (organizations or individuals) directly involved in the upstream and downstream flows of products, services, finances, and/or information from a source to a customer’ (Mentzer 2001). Supply Chain Council, a global non-profit organization, has developed its own process reference model for scm, so-called Supply Chain Operations Reference model (scor). The scor model consists of Supply chain business processes defined as ‘plan, source, make, deliver and return,’ the different metrics related to these aspects, and best practices outlined from the industry (Supply Chain Council 2010).

As a result and similarly to scm, there is not a jointly agreed definition of what is a supply chain strategy (Rose, Singh Mann and Rose 2012). Schnetzler, Sennheiser and Schönsleben (2007) define supply chain strategy as ‘a set of prioritized scm objectives, i. e., strategic priorities and a way to operationalize them, i. e., to determine appropriate measures, in order to build up and capitalize on so-called logistics success potentials that can potentially result in successful business performance’ (Schnetzler, Sennheiser and Schönsleben 2007). Rose, Singh Mann and Rose (2012) add that supply chain strategy can also be emergent rather than deliberate and defines the concept as a ‘deliberate and/or emergent conceptual framework by which a company involves its supply chain and supply chain

members in its efforts to reach its own corporate strategic objective' (Rose, Singh Mann and Rose 2012).

Many scholars state that supply chain strategy must reflect the corporate strategy (Schnetzler, Sennheiser and Schönsleben 2007; Harrison and New 2002; Christopher, Peck and Towill 2006; Chopra and Meindl 2007; Waters 2009). According to the survey conducted by Harrison and New (2002), two-thirds of all respondents thought that their supply chain strategy was significant or highly significant in terms of corporate strategy. According to Rose, Singh Mann and Rose (2012) however, there still exists a major gap between corporate strategies and supply chain strategies (Rose, Singh Mann and Rose 2012).

Being loosely established, supply chain strategies can be studied from multiple different perspectives. Rose, Singh Mann and Rose (2012) isolates five different research fields: scm, marketing, operations management, organizational theory and contractual perspective (Rose, Singh Mann and Rose 2012). scm perspective of supply chain strategy discusses the different strategies in relation to the five different parts of the scmr model: plan, source, make, deliver and return. Marketing perspective highlights designing supply chain according to the requirements of the customer. Operations management weigh whether to make supply chain efficient (lean) or responsive (agile). Organizational theory concentrates on integration of the supply chain. Finally, contractual perspective emphasizes the importance of different kind of contractual agreements that can exist between the different actors in the supply chain.

Different supply chain strategies usually contain some driver based on which they think that the proper design should be determined. For example, Rose, Singh Mann and Rose (2012) illustrate three kinds of factors: product characteristics (supply and demand predictability, product life cycle), context and integrative practices, and contractual issues. Schnetzler, Sennheiser and Schönsleben (2007) adds corporate culture as one factor that determines the proper supply chain design (Schnetzler, Sennheiser and Schönsleben 2007; Rose, Singh Mann and Rose 2012).

SUPPLY CHAIN STRATEGY AS FUNCTIONAL STRATEGY

Strategy is visible at multiple layers in a firm, which can be seen in figure 1. At the highest level, strategy is described as a mission that gives the overall purpose and aims of an organisation. Corporate strategy then describes how the mission is achieved. Supply chain strategy is functional strategy. As mentioned already, according to

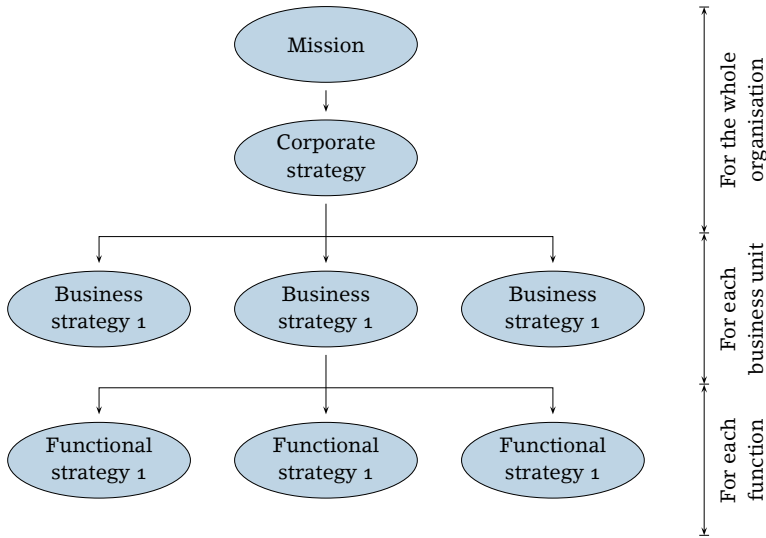


FIGURE 1 Types of Strategic Decisions (adapted from Waters 2009)

numerous scholars, it is vital that the functional strategy is in line with the business strategy (Waters 2009).

Literature review presents various holistic frameworks regarding the relation of supply chain strategy to corporate strategy and the different subfields of the supply chain strategy. One example is the holistic framework of Chopra and Meindel (2007) that can be seen in the figure 2. They state that the purpose of supply chain strategy is to strike a balance between responsiveness and efficiency (according to the premises of operations management) that fits with the corporate strategy. To reach this goal, a company must structure the right combination of the three logistical (facilities, inventory and transportation) and three cross-functional drivers (information, sourcing and pricing). It is worth mentioning that Chopra and Meindl (2007) see corporate strategy as a competitive strategy relating to the works of Porter (1980, 1985), and that is why their framework is largely divided between efficiency (cost-leadership) and responsiveness (differentiation) (Chopra and Meindel 2007; Porter 1980; Porter 1985).

Lean and Agile

The most widely established supply chain strategies in scm literature are lean and agile approaches. These concepts arise from operations management theory and study when supply chain design should be efficient (lean) or responsive (agile). The big advantage of lean and agile approaches is that they are rather comprehen-

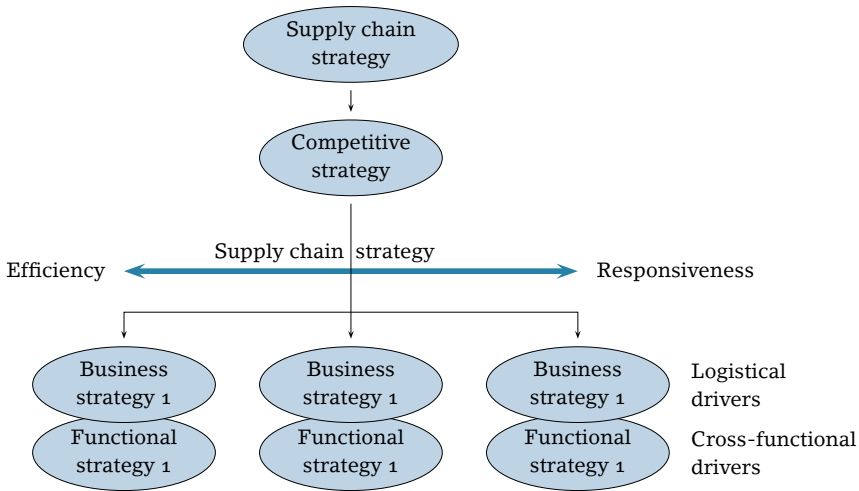


FIGURE 2 Supply Chain Decision-Making Framework (adapted from Chopra and Meindl 2007)

sive supply chain strategies and thereby they can be extended to very many supply chain objectives. The names for the different approaches are not fully established and for example Morash (2001) uses terms operational excellence (lean) and customer closeness (agile) (Morash 2001).

Lean supply chain identifies seven different types of waste (Ohno 1988): 1) defects in production, 2) overproduction, 3) inventories, 4) unnecessary processing, 5) unnecessary movement of people, 6) unnecessary transport of goods and 7) waiting by employees. Therefore, a lean supply chain aims to operate smoothly with few disturbances. It is not even designed to adapt easily to market shocks. A lean supply chain builds a separate production line for each product and avoids product exchanges. As a result, the capacity utilisation rates are usually high. Long lead-time is not that big a problem for a lean supply chain as long as it is shown to be a cost-efficient solution (Waters 2009; Vonderembse et al. 2006).

An agile supply chain focuses on responding to unpredictable market changes and capitalizing on them through fast delivery and lead-time flexibility. It utilizes information systems and technologies as well as electronic data interchange capabilities to move information faster and to make better decisions. As opposed to a lean supply chain, an agile supply chain wants to be demand- rather than forecast-driven. Therefore, an agile supply chain operates anything

TABLE 2 How Demand/Supply Characteristics Determine Supply Chain Strategy

		Demand characteristics	
		Predictable	Unpredictable
Supply characteristics	Long lead time	<i>Lean</i> Plan and execute	<i>Leagile</i> Postponement
	Short lead time	<i>Lean</i> Continuous replenishment	<i>Agile</i> Quick response

NOTES Adapted from Christopher, Peck and Towil 2006.

but smoothly. It may periodically have a lot of capacity unused, but once it has been given an order, it will use full capacity to deliver the order as fast as possible. An agile supply chain strives for as short a lead-time as possible. An agile supply chain invests heavily in reduction of setup times and disfavours inventory (Christopher, Peck and Towil 2006; Vonderembse et al. 2006).

The generally held view among scholars is that lean concepts work well where demand is relatively stable, and hence predictable, and where variety is low. On the other hand, agile concepts are about the ability to match production with turbulence in demand (Vonderembse et al. 2006; Fisher 1997; Wang, Huang and Dismukes 2004). Christopher, Peck and Towil (2006) and Chopra and Meindl (2007) add that it is not only the demand uncertainty that determine the optimal supply chain strategy but also supply lead time (Christopher, Peck and Towil 2006) or supply uncertainty (Chopra and Meindl 2007). Table 2 illustrates how Christopher, Peck and Towil (2006) see the two drivers affecting the selection of optimal supply chain strategy. Christopher, Peck and Towil (2006) add that the demand of a product is likely to change in relation to its stage in product life cycle. New products require a more responsive supply chain whereas older products require a more efficient supply chain (Christopher, Peck and Towil 2006).

In the end of 1990s, some views arose that there can also be a hybrid supply chain strategy that uses both the characteristics of lean and agile supply chains. This kind of strategy is called leagile. In a leagile system, there is so-called decoupling or order penetration point. Upstream of the decoupling point, the supply chain will exhibit lean principles whereby production will follow a forecast schedule. Downstream of the decoupling point, the supply chain will be agile and designed to be responsive to customer demand. The idea here is that for many products, the demand becomes unpredictable only downstream, but upstream of the decoupling point,

the demand can be highly stable. Leagile supply chain strategy can also be called as postponement strategy. In a similar manner to leagile, postponement approach delays the place of customization in the supply chain and therefore it can quickly adapt to changing market requirements. Table 3 presents the comparison of lean, agile and leagile supply chain strategies (Wang, Huang and Dismukes 2004; Mason-Jones, Naylor and Towill 2000).

Supply Chain Integration

The importance of supply chain integration aroused scholars' attention during the 1990s (Frohlich and Westbrook 2001; Cousins and Menguc 2006; Storey et al. 2006). Cousins and Menquc (2006) state that this is due to global competition that has forced firms to produce higher quality with lower price, and this can be attained via supply chain integration. According to Vickery et al (2003), an integrative supply chain strategy recognizes that integrated business processes (not individual functions or systems) create value for the firm's customers and that these processes reach beyond the boundaries of the firm by drawing suppliers and customers into the value creation process. The clear definition of supply chain integration is not that well established as some scholars only include the upstream (supplier) side of supply chain. However, it is much more general to include both upstream and downstream in the discussion of supply chain integration (Vickery et al. 2003).

Supply chain integration research has typically been viewed along two coordinated lines. The first involves the forward movement of physical goods from suppliers through manufactures and on to end-customers. Many of these views fall under the concept of Just in Time, while others highlight the importance of delivery integration in terms of implementing product postponement in the supply chain. The second involves the rearward movement of information and customer data through the chain. This enables all the actors in the supply chain to coordinate their activities, which enhances the efficiency in the supply chain. The different views are illustrated in the figure 3 (Rose, Singh Mann and Rose 2012; Frohlich and Westbrook 2001).

Vickery et al. (2003) presents two different strategies for supply chain integration according to the division between upstream and downstream operations: supplier partnering and closer customer relationships. Supplier partnering sees the supplier as a strategic collaborator. High level of trust, commitment over time, long-term contracts and joint conflict resolution are typical characteristics of the relationships. The parties also share information, risks and rewards.

TABLE 3 Comparison of Lean, Agile and Leagile Supply Chain Strategies

Decision category	Lean supply chain	Leagile supply chain	Agile supply chain	KPIs	
				Lean	Agile
Facilities	Aim for high capacity utilization rate. Long lead times are not a major problem. Prepare to locate far from market if it decreases costs. Avoid continuous product exchanges.	High capacity utilization rate for upstream operations, significantly lower for downstream operations. Invest in speed of product exchanges and shorten lead time at the end of the supply chain.	Capacity utilization rate cannot be too high. Aim for as short lead times as possible. Locate near the markets. Invest in the capability of making fast product exchanges.	Capacity utilisation, manufacturing costs.	Capacity utilisation, Lead time, setup times.
Inventory	Generate high turns and minimize inventory throughout the chain.	Postpone product differentiation as late as possible. Minimize functional components inventory.	Make in response to customer demand. Allow for some finished goods inventory to ensure product availability.	Inventory carrying costs, inventory turnover.	Product availability, inventory level.
Transportation	Drive down costs of transportation by favoring cost-efficient transportation modes and high shipment sizes.	Apply cost-efficient transportation modes to upstream operations, and fast and flexible modes to downstream operations.	Enhance responsiveness by favoring fast transportation modes and prepare to use low shipment sizes.	Transportation costs, delivery reliability.	Delivery speed, delivery reliability.
Information	Use the latest technology to facilitate information sharing	Use the latest technology to enable the postponement	Use the latest technology to capture the changes in the mar-	Forecasting accuracy	–

	in the supply chain. Use advanced forecasting techniques.	of product customization.	ket. The supply chain should be demand driven rather than forecast driven.	
Sourcing	Desired supplier attributes involve low cost and high quality.	Desired supplier attributes involve low cost and high quality, along with the capability for speed and flexibility, as and when required.	Desired supplier attributes involve speed, flexibility and quality.	Time of delivery, supply quality.
Organisation	Use a static organisational structure with few levels in the hierarchy.	Maintain an organisation similar to lean. May create temporal relationships with partners to implement innovative features.	Create virtual organizations by creating alliances with partners that vary with different product offerings that change frequently.	—
Quality	High quality and continuous improvement on it.	High quality both in upstream and downstream operations.	High quality in innovative products.	Defects in production, defects in deliveries.
Customer service	Low level of customer service.	Good level of customer service.	High level of customer service.	Customer service costs.
Product development	Maximize performance and minimize costs.	Use modular design in order to postpone product differentiation as long as possible.	Design products to meet individual goals.	Customer query time. Testability, repeatability, product volumes.

NOTES Adapted from Christopher, Peck and Towill 2006; Chopra and Meindl 2007; Vonderembse et al. 2006; Wang, Huang and Dismukes 2004; Bozarth and Handfield 2008.

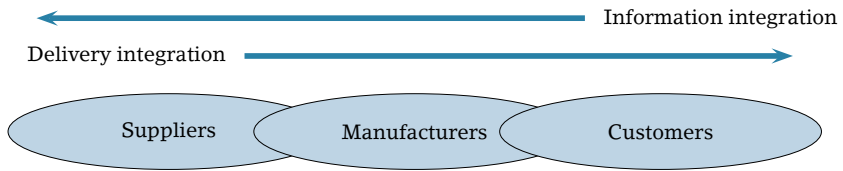


FIGURE 3 The Two Concepts in Supply Chain Integration Research (adapted from Frohlich and Westbrook 2001)

This kind of collaboration affords many of the advantages of vertical ownership without the attendant loss of strategic flexibility. Partners work together to ensure high product quality and low costs, with both companies sharing in the benefits. The partnership relationship might entail early supplier involvement in product design or acquiring access to superior supplier technological capabilities. It is vital to notice how Vickery et al. (2003) sees the underlying drivers for partnering to be long-term strategic ones rather than short-term cost-related ones (Vickery et al. 2003).

Closer customer relationships aim to enhance a firm's ability to determine its customers' requirements. Close customer relationships enable firms to proactively seek information on customer preferences, and then become more responsive. Insights gained as a result of establishing strong relationships with customers can also be used to enhance operational effectiveness and cost efficiency. Again, one should notice that the driver for stronger collaboration with customers is based first-hand on long-term strategic goals (Vickery et al. 2003).

Supply chain integration is not by any means opposed to lean and agile approaches. To build a comprehensive lean or agile supply chain, one needs to have very good relationships with both suppliers and customers. Actually, the concept of supply chain integration has arisen during the 1990s to at least some extent because of the needs presented by lean and agile approaches (Cousins and Menguc 2006).

SUPPLY CHAIN STRATEGY FRAMEWORK

According to the literature review, supply chain strategy framework could be presented in figure 4. Supply chain strategy framework is based on business environment, which could be high or low business volume. Corporate strategy main approaches are cost leadership and differentiation. Supply chain demand is based on predictable or unpredictable demand. Supply chain strategy has two approaches; efficiency or responsiveness, where efficiency is lean supply chain strat-

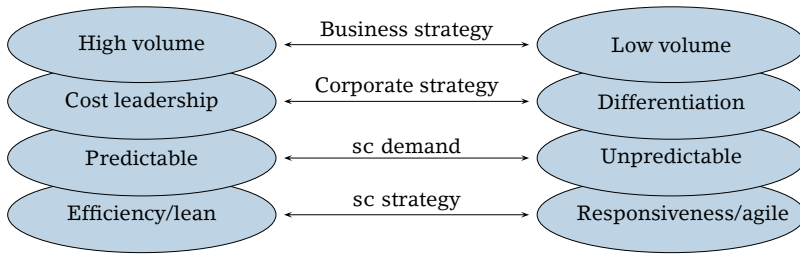


FIGURE 4 Supply Chain Strategy Framework

egy approach and responsiveness is agile supply chain strategy approach. When the business environment and volume is high, then strategy approaches for supply chain are cost leadership corporate strategy, predictable supply chain demand, efficiency, and lean supply chain strategies. If the business environment and volume is low, then strategy approaches for supply chain are differentiation corporate strategy, unpredictable supply chain demand, responsiveness, and agile supply chain strategies.

Empirical Case Study

The empirical case could be described as two independent supply chains in a global engineering business. One of the key sub-assemblies of case company’s products is managed by case supply chains. Product is ready assembly subassembly, which consists of steel structure and components. The products are tailor-made and every product is customized according to the customers’ needs (Sillanpää, Abdul Malek and Takala 2013).

Supply chain is organized globally so that there are three region-based supply chains: Europe, APAC and America. In every region, there are production locations, which are serving the supply chain. Production units are joint ventures, own units and also suppliers. The one important characteristic is that the cooperation is extremely deep with the production unit’s in the whole supply chain (Sillanpää, Abdul Malek and Takala 2013).

The empirical case study was done together with the management of case supply chains.

Supply chain A:

- Location: Europe
- Owner: private owned
- Turnover: 15 million EUR
- Workers: 80

Supply chain B:

- Location: Asia
- Owner: private owned
- Turnover: 20 million EUR
- Workers: 100+

Business environment in both supply chains is slightly different. In supply chain A, the business environment is more dynamic than in supply chain B. The reason behind this is because demand fluctuation is extremely high in supply chain A. If categorizing supply chains business environment into high or low volume it could be stated that volume is low compared to business environment generally. In supply chain A, the business environment is also at some stages close to high volume but that is because of the demand changes.

According to literature review and developed supply chain strategy framework, corporate strategy could be categorized as a cost leadership or differentiation. In the case study, the corporate strategy seems to be a cost leadership for both supply chains. There is huge competition in the markets all the time and that is the driver to align corporate strategy to cost leadership. Even if it seems that case supply chain corporate strategy is cost leadership, both supply chains try to differentiate. Differentiation is the target to serve customers better and try to make your supply chain unique. When your supply chain is, unique it is more challenging to change it and competition is no longer the issue. In that perspective, both supply chains corporate strategy is differentiation.

In the dynamic business environment, the supply chain demand is commonly unpredictable. In the case supply chains, the demand is extremely challenging to forecast. In European supply chain A, the forecasting process is done together with customers but in the Asian supply chain B, it is done independently. Even if supply chain A demand forecasting is working, it is extremely challenging to estimate future supply chain demand. Practically in both supply chains the demand is forecasted based on past supply chain volumes. According to case study, the conclusion of the supply chain demand is that in both supply chains the demand is more unpredictable than predictable.

According to Sillanpää, Abdul Malek and Takala (2013) there are significant differences comparing supply chain strategies in Europe and Asia. Supply chain strategy part is the conclusion of the developed supply chain strategy framework and analysis of the business

environment, corporate strategy and supply chain demand. Supply chain strategy seems to be in both supply chains responsiveness and agile supply chain. The analyze of the supply chain strategy framework states that in both supply chains the business volume is low, corporate strategy is differentiation and supply chain demand is unpredictable (Sillanpää, Abdul Malek and Takala 2013).

Conclusion

As the concept of supply chain strategy is quite loosely established, there is quite little academic literature that explicitly relates corporate strategy to supply chain strategy. However, academic literature that relates corporate strategy to scm concepts is somewhat larger (Trkman et al. 2007).

There are many scholars who state that corporate strategies with a focus on cost-leadership require lean supply chain processes, whereas corporate strategies with a focus on differentiation require agile supply chain processes (Morash 2001; Chen and Paulraj 2004). Lean supply chain principles minimize production, inventory and transportation costs in the supply chain, which is exactly what a cost-leadership strategy requires. Agile supply chain processes support differentiation strategy by implementing high levels of value-added customer service, proactive quality and collaborative communications and interactions with customers.

The need for supply chain integration has been explained by resource-based view of the firm (Cousins and Menguc 2006). According to this view, firms have realized that some strategic resources may lie beyond the boundaries of the firm and that the competitive advantage may be explained by a network of inter-firm relationships. On the other hand, supply strategies that concern supplier selection have been relatively loosely tied to corporate strategies, and if some are used, they are most often transaction cost or agency theory (Leiblein, Reuer and Dalsace 2002). According to transaction cost theory, cooperation with suppliers is limited by the transaction costs of managing the interaction. Agency theory postulates that in a healthy relationship with suppliers, incentives of both sides are aligned.

Supply chain strategy framework merge together business environment, corporate strategy, supply chain demand and supply chain strategy. Supply chain strategy framework is based on business environment where the main approaches are high and low volume. Corporate strategy is divided into cost leadership and differentiation and supply chain demand is based on predictable or unpredictable

demand. Supply chain strategy approaches are efficiency and lean or responsiveness and agile supply chain. Supply chain strategy framework is tested in one empirical case study where two supply chains are analysed. Empirical case study validates developed supply chain strategy framework.

Future research could be real multiple case studies in the global environment which could validate the supply chain strategy approaches and develop supply chain strategy framework for company's needs to develop supply chain strategies according company's strategy.

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