Strategic Supply Chain Management (SSCM): Developing Conceptual Framework and Research Propositions

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ABSTRACT

In current era of highly comptitive and fast pace business environment organization are struggling to survive as product lifecycles (PLCs) have become shorter, clock-speed has become faster, and the consequences of disenchanting a customer have become more severe. Thus, organization are looking for ways to be more productive, creative and competitiveas these factors affect their performance. Strategic supply chain management (SSCM) enable firms to create value in multiple ways and shows how the role of supply chain is being redefined, from an operational tool to a bonafide competitive strategic weapon. The strategic supply chain management not only focuses on use of a supply chain as a means to deliver products to right place, but also as an enabler to enhance strategic outcomes that drive overall performance of the organization. Strategic supply chain management drives an organization to deliver what its customers want, when its customers want it and streamlining operations to provide great service at lower cost.

Value-creation aspects of the strategic supply chain management have become a new competitive ground to which most organizations can aspire. Strategic supply chain management needs four key components in order to be as customer-centric as possible: Responsiveness, Resiliency, Reliability and Realignment (4Rs). Strategic supply chain management enhances customer value proposition through competitive priorities of 4Rs and hence they need to be integrated in order to create the most value within an organization's operations as well as for the customers. Strategic supply chain management mitigates the challenges of customer value creation in today's highly complex and competitive business environment. This research has developed a research framework for better understanding of customer interface and organizations from inside-out. The research has formulated various propositions and emphasized that 4Rs are important drivers of strategic supply chain management in improving business performance.

Key words:
Strategic supply chain management, SCM, SSCM, Responsiveness, Resiliency, Reliability, Realignment, Customer-centric, Customer-focus, Competitive Advantages

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1. Introduction

In today's world of complex and extremely competitive business milieu, firms are struggling to survive as product lifecycles (PLCs) have become shorter, clock-speed has become faster, and the consequences of disenchanting a customer have become more severe. That's why many firms are looking for ways to be more productive, creative and competitive as these factors affect their performance. There are various drivers influencing performance of the firms. One of them, strategic supply chain management (SSCM), is about strategic thinking on supply chain management (SCM) to enhance the firm's performance. Any action plan to enhance supply chain (SC) performance makes efforts to align supply and demand, reduce overall costs and enhance customer satisfaction (Madhani, 2018).

Conventionally, the focus of SC has been on moving materials in the whole delivery process and hence it has been labeled as 'support' function in the value chain as support functions helps firms in achieving their goals. In this context, strategic supply chains take a crucial role in enhancing efficiency and effectiveness of operations. The main theme of strategic supply chain management (SSCM) is not limited to the use of a supply chain as a process to deliver goods and materials to right place, as its scope is extended to elevate strategic position of a firm by strengthening its overall business performance.

In this way, strategic SC strategy transforms traditional supply chain from a functional role that guides operational strategy as a supporting function to a central theme of the business strategy. Strategic supply chain management (SSCM) can enable firms to create value in multiple ways and shows how the role of supply chain is being redefined, from an operational tool to a bonafide competitive strategic weapon. Strategic supply chain strives to achieve the objectives of achieving higher efficiency and effectiveness with better integration. Hence such supply chains are capable of building competitive advantage by balancing higher efficiency requirements along with better demand management while managing supply chain risks

The major objectives of this paper are: (1) to introduce concept of the strategic supply chain as a management approach which extends the capabilities of supply chain networks by diverting the attention to the fulfillment of diverse needs of customers; (2) to highlight how SSCM meets the issues of providing better value to customers in current era of complex and volatile environment characterized by intense rivalry; (3) to develop a conceptual research model of strategic supply chain for better understanding customer interface from the perspectives of competitive priorities and finally (4) this study focuses on the how strategic supply chain strategy, improves business performance.

This paper is organized in different sections: Section 1 provides introduction of the topic. Section 2 outlines the literature review and section 3 provides details of competitive priorities for strategic supply chain management in terms of 4Rs (responsive, resilient, reliable and realigned) framework. Section 4 presents research methodology for building competitive priorities required for strategic supply chain in a firm and develops various propositions for strategic supply chain management. Finally, section 5 concludes with the relevance of SSCM in this dynamic world.

2. Literature Review

"A supply chain is a coordinated system of organizations, people, activities, information and resources involved in moving a product or service in physical or virtual manner from supplier to customer"(Poluha, 2006). Bruce *et al.,* (2004) defined a supply chain as "a process that describes the flow of goods from the production of a product right through to the final sale to the end consumer". The leading association of SC professionals – known as "Council of Supply Chain Management Professionals (CSCMP)" has over 9,000 members (i.e. supply chain practitioners) across the globe. Hence, its definition on supply chain management (SCM) has currency with practitioners: "Supply chain management encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities. Importantly, it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third-party service providers, and customers. In essence, SCM integrates supply and demand management within and across companies"(CSCMP, 2016).

Supply chain management (SCM) is "the management of upstream and downstream relationships with suppliers and customers in order to create enhanced value in the final marketplace at low cost to the supply chain as a whole" (Christopher, 2011). SCM is a critical success factor for today's organizations (Duarte and Machado, 2011). In the context of SCM, firms can enhance performance by focusing on customer value creation process (Mentzer *et al.,* 2001). Firms can experience improved performance through SCM by aligning various processes from customer and its upstream, and sharing relevant data for enhancing customer value proposition (Othman and Ghani, 2008).

As defined by Simchi-Levi *et al.,* (2008), SC strategy is "a set of approaches utilized to integrate suppliers, manufacturing, warehouses, and stores so that merchandise is produced and distributed at the right quantities, to the right location, at the right time, in order to minimize system-wide costs while satisfying service level requirements". Nowadays, supply chain strategy is no more a buzzword as organizations consider itas "a prerequisite" for business excellence. According to Varma *et al.,* (2006), "top performers have a clear supply chain strategy aligned with overall business objectives and customer requirements". In spite of its significance and utility, SC strategy is not getting proper attention by business world. Dittmann (2012) conducted "a survey on the state of supply chain strategy" and reported that, though 62% of the sample participants agreed that "they have a SC strategy", only18% had "a documented, "multi-year SC strategy".

Sundaram *et al.,* (2010), emphasized supply chain as an integration of diverse resources and various processes to distribute goods and materials to final users by delivering value at every stage. Supply chain performance is an important driver of organizational performance outcomes (Adams *et al.,* 2014; Youn *et al.,* 2014). Supply chain performance is defined as "the benefits derived from supply chain cooperation, including efficiency improvement, cost reduction, and degradation in cycle time" (Yul and Kyu, 2015). Previous research has shown that an efficient and effective supply chain delivers quality products on time and in the right quantities (Prajogo and Olhager, 2012), reduces order cycle time (Qrunfleh and Tarafdar, 2014) and provides mutual benefits for supply chain partners (Hsin *et al.,* 2013). As such, firms must proactively engage in practices that will enhance supply chain performance.

Narasimhan *et al.,* (2008) emphasize that, "in the competitive global environment in which firms operate today, developing a successful supply chain strategy is critical to a firm's long-term competitive success." Deployment of SC strategies by a firm enhances the overall performance and hence subsequent competitiveness of the entire chain i.e. including firm as well as partners of supply chain (Roh *et al.,*2014). This research focuses on strategic supply chain management and develops appropriate competitive priorities to enhance SCM efficiency, effectiveness and competitive advantages.

3. Strategic Supply Chain Management (SSCM): Enhancing Competitive Advantages

The traditional SC strategy in which the end point of networks are represented by final users, is no more relevant today, as such cost-focused supply chains driven by efficiency criteria are more susceptible to unforeseen swings in demand (Lee, 2004). In the traditional SC strategy, the major focus is on demand forecasting function while synchronizing distribution function. However, only a customer order drives real demand in the process and fills the supply chain. Hence, each supply chain member overestimates the customer demand to avoid stock-out situations. Usually, each SC entity "over-plan" stocks and keep safety margin to assure better customer service without supply disruption. This phenomenon is known as the "bullwhip effect" where a small variation in demand downstream generates increasingly larger demands as it progresses up-stream (Strong, 2011). Traditional, supply chain aims to reduce operating costs for firms by enhancing SC efficiency across its various processes. However, focusing only on cost-driven efficiency based strategy provides temporary competitiveness; it will not offer sustainable competitive advantages as products and services are not differentiated from competitors (Roh *et al.,* 2014).

Today, business competition is not limited between firms in the market as true competition takes place between supply chains of firms (Farahani *et al.,* 2014). As an extension of the cost-focused (i.e. efficiency driven) supply chain, strategic supply chain provides better solution to cater changing customer needs. Table 1, below shows major differences between traditional supply chains and strategic supply chains according to competitive priorities. Supply chain capabilities of *responsiveness*, *resilience*, *reliability* and *realignment* can be categorized as dynamic capabilities. Dynamic capability is the organization's capacity to create, extend, or modify competences (internal and external) to respond volatile and uncertain business environment (Teece *et al.,* 1997). Such dynamic capabilities refers to the ability of an organization to meaningfully manage (i.e. integrate, build and reconfigure) its resource and hence can be differentiated from operational capabilities, which relates to existing processes of the organization (Helfat *et al.,* 2007).

Thus dynamic capabilities of responsiveness, resilience, reliability and realignment provide competitive advantage for supply chain. It is mainly because these capabilities are built and revised according to market potential, structural changes in market as well as business conditions (Madhani, 2017).

Table 1: Traditional Supply Chains versus Strategic Supply Chains

Sr. No.	Competitive Priorities	Traditional Supply Chains	Strategic Supply Chains
1	*Responsive*	Modest ability to respond to changes	Quick ability to respond to changes by taking proactive actions
2	*Resilient*	Usually restricted to an individual supply chain / or a bunch of supply chains and hence provides limited flexibility	Develop a specified cluster of several supply chains for enhancing flexibility
3	*Reliable*	Focus on cost-efficiency	Focus on reliable and cost efficient supply chains
4	*Realigned*	Often supply chain participants are asked to make selection between self-interest and interest of supply chain partners	Usually interests of supply chain partners converge to develop better synergy

(Source: Tabulated by author and adapted from Ketchen and Hult, 2007)

4. Research Methodology

This research works on building of a theoretical model for identifying and analyzing benefits of a strategic supply chain. The research framework identifies key processes and relevant drivers of supply chain performance improvement in organizations.

4.1 SSCM: Development of a Theoretical Model

SSCM helps supply chain partners resolve the issues between opportunity losses due to inadequate capacity for meeting unpredictably high demands and real losses due to surplus capacity for meeting forecasted demand that is not realized. SSCM links demand management processes and supply chain operations for better prediction of demand so as to optimize inventory level, If this alignment between demand and supply fails, it results in either shortage of inventory (leads to lost sales) or surplus inventory (leads to profit loss caused by buffer stock). Real time analysis of product demand can accelerate development efforts for refinement of products and boosts as well as creates demand for new products.

SSCM can improve the product planning process as well as distribution strategy and overall supply chain decision making related to it. Thus, SSCM boosts the organization's ability to introduce new products and enhancements of existing products in an effective and efficient manner. As customer data and information is shared in real-time with the supply chain partners, quality improvements and product innovation process accelerates while trimming down time to market. Such strategic approach for enhancing customers' overall satisfaction with firms' products or services, improves the profitability and efficiency of the entire enterprise in the long run, which includes all the supply chain partners. SSCM is increasingly being recognized by organizations as a strategic choice for enhancing performance of organizations by decreasing inventories across various partners of supply chain and simultaneously deliver what the customer demands.

The diverse goals of a strategic dolphin choir are (1) to enhance *responsiveness* to demand fulfillment process by delivering the materials in correct sequence and shape i.e. at desired place and time by gathering and analyzing sales data. SC responsiveness enables supply chain to initiate quick response on short-term, temporary or interim changes in supply/demand; (2) to enhance *resiliency* of supply chain to cater volatile demand changes by modifying supply chain design to accommodate market dynamics. Resilient supply chain quickly senses market changes to meet customers demand, withstands systemic discontinuities and adapts to a new risk environment; (3) to increase *reliability* by controlling probable causes of SC risks, design constraints and interruptions as a reliable supply chain performs its function as intended overcoming supply chain disruptions; and finally (4) to enhance *realignment* among supply chain partners by establishing incentives for them to improve performance of the entire chain as a realigned supply chain operates in an uninterrupted and seamless fashion. Figure 1, shows, a conceptual framework of strategic supply chain management (SSCM) with all these competitive priorities of responsiveness, reliability, resiliency and realignment.

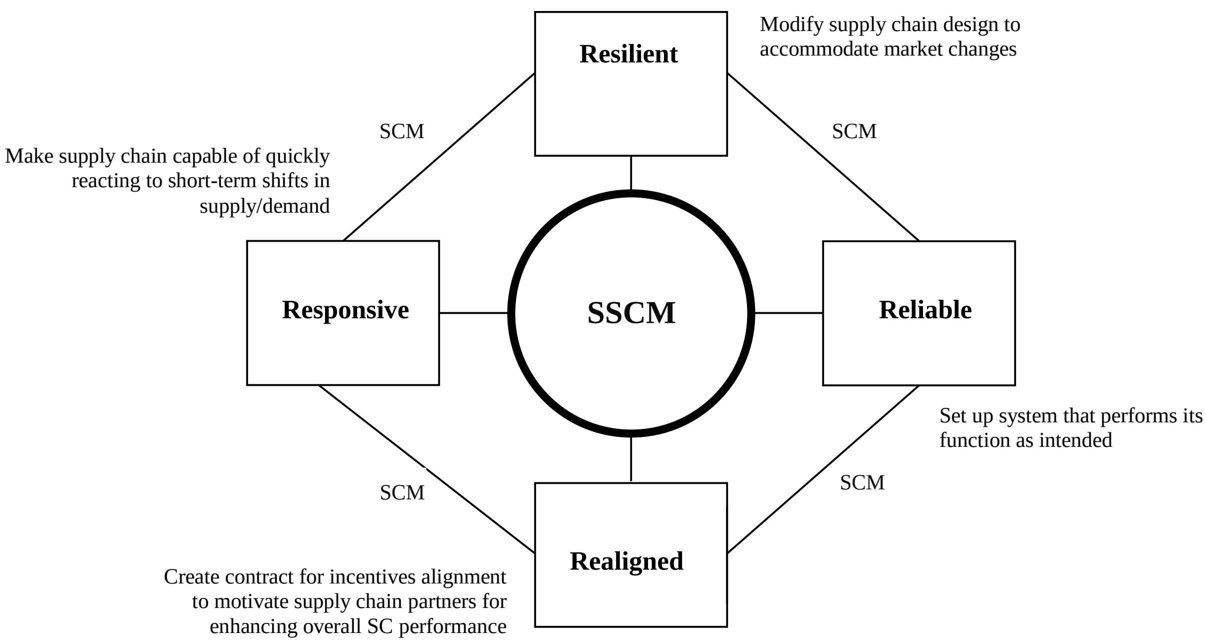

Figure 1: Strategic Supply Chain Management (SSCM): 4Rs (Responsive, Resilient, Reliable and Realigned) Framework

(Source: Framework Developed by Author)

4.2. SSCM: Development of Various Propositions

4.2.1 Responsiveness

Responsiveness describes the ability to react quickly to sudden variations in demand or supply. With responsiveness, firms handle external disruptions smoothly by responding to short-term changes in demand or supply swiftly. Current scenarios in business world represent uncertain and highly turbulent environment caused by increased complexity, interdependency of organizations and volatile customer demand. To cope up with these challenging demands, firms should take more proactive steps which will delight customers and subsequently enhance their market competitiveness (Roh *et al.*, 2011). In this context, a responsive supply chain is characterized by higher order of customer-focus, information-intensity, and flexibility to quickly meet changes in customer demand. According to Lau and Hurley (2001), building a responsive supply chain is crucial in current business environment to create competitive advantage for the firms. Thatte (2007) underscored that there is a positive relationship between SC responsiveness and competitive advantage of the firm.

Based on the above, this research expects impact of the SSCM on the overall performance of organization through higher responsiveness and claims with following proposition that:

P_1: SSCM has direct influence on SC responsiveness.

4.2.2 Resiliency

Resiliency describes the ability to adapt overtime as market structures and strategies evolve. It allows firms to alter design of SC according to changes in products, markets, strategies and technologies. Unless firms make their SC adaptable, it's very challenging for them to remain competitive in market place. By building supply chain adaptability, various SC partners can adjust their processes and respond to SC dynamics (Stevenson and Spring, 2007). There is a structural shift in key business landscapes and hence supply chain needs to adapt it with higher resiliency. Such shift is caused by diverse market variables such as economic, social and political factors; shift in demographic trends and technology progress.

Eckstein *et al.*,(2015) define supply chain adaptability as "the ability of the firm to sense long-term, fundamental changes in the supply chain and market environment and to respond to such changes by flexibly adjusting the configuration of the supply chain (e.g. developing new supply bases, relocating production facilities, and depending on outsourcing)". Based on the above, this research expects impact of the SSCM on the overall performance of organization through higher resiliency and claims with following proposition that:

P_2: SSCM has direct influence on SC resiliency.

4.2.3 Reliability

In supply chain performance management, reliability indicates 'correct' SC delivery performance in terms of product, place, time, packaging, quantity, and documentation, to the actual customer (LMI, 2003). Reliability represents the odds that any individual component or whole system carries out its assigned task as planned and hence it refers to the degree to which a supply chain yields consistent performance (Kuo and Zuo, 2003). Random supplies and disruptions have been important sources of uncertainty hampering the reliability of supply chains. The collapse of any entity or linkage in supply chain network would amplify overall SC costs and weaken the process of delivering value to customers (Lehrer, 2003). Instead of relying on traditional supply chain usually known as efficiency driven cost-focused SC, business firms today require reliable SC in addition to cost-focused SC (Snyder and Daskin, 2005). The main reason for this shift is the negative impact of supply uncertainty on supply chain networks.

Based on the above, this research expects impact of the SSCM on the organizational performance through higher reliability and claims with following proposition that:

P_3: SSCM has direct influence on SC reliability.

4.2.4 Realignment

Realignment of supply chain refers to aligning the interests of supply chain partners continually by confirming that the goals of a supply chain partners are in harmony. Whilst making such realignment of the interests among various SC partners in the network, firms deliver optimal SC performance when they maintain their priorities and fulfill own goals. Realignment creates incentives for better performance. Incentive alignment is an important tool to facilitate collaboration between the common supply chain and each individual firm (Pakdeechoho *et al.*, 2018). Supply chain partners should provide more financial and non-financial incentives to promote supply chain realignment.

For certain product category, Wal-Mart made collaborative efforts to reduce supply chain costs and then realigned its supply chain by splitting the cost benefits proportionately among Wal-Mart, its supplier (P&G) and customers (Croxton *et al.*, 2001). Firms must incorporate collaboration with their supply chain partners into their internal processes to improve sustainability (Blome *et al.*, 2014). The benefits of collaborative practices will only be fully realized when all parties in the supply chain cooperate closely with one another (Cao and Zhang, 2011).Based on the above, this research expects impact of the SSCM on the overall performance of the organizations through better realignment and claims with following proposition that:

P_4: SSCM has direct influence on SC realignment.

5. Conclusion

Strategic supply chain management (SSCM) has a direct impact on top and bottom-line performance of a firm, as it enhances capabilities of the firm to adapt to the swiftly changing business environment, with even more focus on the customer. Firms that effectively develop strategic supply chain are differentiated from other firms in number of ways: increased revenue, elevated profit, and higher customer retention rate due to a better consumer experience. SSCM helps organizations to anticipate demand of consumers precisely; cater such demand reliably and swiftly and enhance supply chain productivity. Hence, it ultimately leads to decrease in supply chain costs, faster market response and higher efficiency and effectiveness of supply chain. In addition to aligning organizational resources with customer value creation, it can directly improve forecasting, product planning and optimization. Greater insight into demand and delivery schedule will improve operational efficiencies and help organizations in creating the business value they seek. This research has emphasized that dynamic capabilities of responsiveness; resiliency; reliability and realignment (4Rs framework) are important drivers of strategic supply chain management.

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