A Study of Factors Related to Supply Chain Strategy (SCS)

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Abstract

This paper presents comprehensive inspection of factors related to supply chain strategy (SCS) literature. From a narrowed sample of 143 SCS related articles, 54 were qualified as the juncture of SC strategy factor and inventory management relevance. Themes found within this literature include the developing nature of strategy, channel functioning, inter-firm relationships and strategic organizational processes involving the SCS function, its evolving nature and adoption of SCM technology. The study is seeking to ramp up on the current body of theory and practices with direct relevance to supply chain using several agenda setting articles as a footing. Additional SCS research, both conceptual and empirical would be regarded in contemporary economic climate.

Keywords: Supply chain, SC strategy, SCS, SCM technology, SCM.

Introduction

Supply chains are critical to all business customer propositions. The supply range is often overlooked in the council chamber; however, businesses with excellent supply chains that support and enforce customer offers are considerably more profitable, through driving additional sales. SC strategies are a blend of ingredients that assure that the supply chain is in tune with the business requirements. Its sensitivities have been measured and investigated context of changing nature of the job, i.e., future is becoming more uncertain and there is the need for flexibility [10]. However, Chase is of view that in the new global paradigm firms are driven to locate alternative and flexible ways to meet customers need [4]. It is obvious that effective supply chains improve business performance. Nevertheless, areas of focus are cost, inventory, and carbon reduction and delivery methods. A more important angle is that excellent supply chain increase sales through better shelf availability and improve products speed into the market.

For maintenance of competitive advantage exhaustive exploration of Supply Chain Strategy (SCS) factors is possibly a pivotal necessity [10]. Although, supply chain strategy is emerging research area of SCM and needs further consolidation in the context of construct, characteristics and application methods. The SCS research focuses on different streams such as
marketing/downstream [11], e-supply chains [4], demand based [11] and SC integration [8]. Topics often focused on a priority basis within SCSF, includes, knowledge management, self-service technologies [29], supply-chain management, e-commerce, relationship technology, and enterprise resource planning (ERP). Although an improper supply chain, is a consequence of inadequate supply chain innovation, therefore holds the organization in the back seat, eventually fell behind. [39, 27]. Therefore, review of SCS factor research is substantive and critical for both academic and practitioner’s perspectives. In particular for practitioners, to ascertain current knowledge and practices on SC and to identify gaps in theory and practices. This study attempts to conceptualize systematic synthesis of current literature.

Literature attributes that alignment of supply chain strategies with business strategies is essential that perhaps lead to the achievement of overall business goals. The SCS factors for maintaining a high degree of delivery reliability and high delivery flexibility has been the hallmark of business strategy [20, 22, and 25]. Firms often witnessed major gaps between business strategy and supply chain strategy. Therefore, incorporating powerful supply chain models, results in the achievement of the goal. Nevertheless, SCS factors and competitive strategy must go together [9]. SCS is defined as a process of material procurement, materials transportation, product fabrication and distribution. In this context, Mitra indicated that a highly responsive SCS is required to address uncertain demand and supply scenario, whereas efficient strategy is needed to address certain demand and supply issues [39, 26]. As such axiomatic design methodology often used where supply chain decomposition is done and each unit is designed that eventually contributes to the accomplishment of the overall business objectives. Subsequently, the articles for this research were selected by searching online database ‘EBASCO’ with keywords ‘supply chain’ and ‘strategy’ ‘factor’ in title.

**Factors positioned to Supply Chain Strategies**

This report synthesizes the literature on SCS factors to find out the current practice for academic inquiry. SCS factors discussed in this paper identify strengths and weaknesses, and also identify research gaps. In this context, taxonomy of SCS factors is suggested to enable academicians and practitioners to evaluate possible optimal alternatives for SCM. On the basis of lack of theory to explain SCS factors in a holistic setting, including its connection to overall business strategy, suggestions for future research directions is offered.

In recent time, supply chains have experienced a figure of major changes in customer sourcing behaviors due to:

- Increased growth in sourcing which lead to increased lead-times and stock levels,
- Variability in demand has increased the total range of merchandise and increased associated promotional activities,
- Growth of E-commerce and multi-channel retailing strategies,
- Exponential increasing cost of fuel and the demand for environmental sustainability.

Today, more than ever, there is a need to focus attention on the supply chain to secure and defend the future demands of customers. Understanding the benefits, a scheme is to secure its
We realize the demand for flexibility

Successful strategies are a blend of factors that ensures that the supply chain is in tune with the job prerequisites. They are as individual as your customer offer, website or retail release and their alignment with business objective is critical. While sensitivities have been measured and investigated the changing nature of the business means as the future is getting more uncertain and therefore flexibility needs to be built in [19, 21]. Despite the existence of supply chains for thousands of years, there is not sufficient and serious academic inquiry until the 1980s, after that the field developed rapidly [6]. The comparative growth of in this field of study can also be differentiated from the numerous competing definitions for supply chain management and related constructs proposed in the literature [33, 38]. Some researchers focused on the supply chain, instead of the individual company, as the unit responsible for the development and sustainment of competitive advantage [28, 30]. This phenomenon, if straight, has profound implications, and needs in-depth survey of SCS factors. It is emerging research area of supply chain management, nevertheless to build consensus in terms of definitions, constructs, characteristics and methods of application in complex issue. The SCS factors research focuses on different streams: manufacturing/upstream [2], marketing/downstream [11, 30], product based [14], demand based [18, 31], SC integration focused [15], and the strategy for electronic-supply (E-supply) chains [8]. A review of SCS factors research is important at this juncture both from academic and practitioner’s perspectives. This is supported by Hauguel and Jackson, who in a survey of 300 large European and U.S. companies found that 68% companies indicated that making improvements to their supply chains was one of their three main priorities. [22,29]. It is observed that around 20% of the firms stated supply chain improvements as a concern, while more than half of the respondents rated its supply chain efficiency as 3 or lower on a 5-point scale. From this viewpoint, it is worthwhile to learn the current state of research on SCS factors and to identify gaps in literature, if any, and this paper undertakes to accomplish this through a synthesis of current literature.

Definitions

Supply Chain

A “Supply Chain (SC) is 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 ” [38, 33]. For the purposes of this paper, supply chain will be defined broadly so as to include Mentzer’s definition as well as, third-party logistics providers, consulting companies, marketing companies and other types of firms that may be involved in the value chain but not necessarily directly involved in the manufacturing process. Although the term supply chain appears throughout the paper, the concept should be conceived as a network, web or system that functions as a whole to provide value from the highest upstream
source, through various value-adding or modifying nodes, to the end customer [19].

Supply Chain Management

“Supply Chain Management (SCM) integrates the full exchange of information and movement of goods between suppliers and end customers, including producers, distributors, retailers, and any other enterprises within the extended supply chain” [20, 32]. While this definition mentions information as components of most supply chains, it states nothing about management. In this paper, supply chain management is defined as planning, implementing, monitoring, controlling, where possible, and commuting, where necessary, all the processes, resources and flows within an expanded concept of the supply chain which includes all workforce in a network, web or system that functions as a whole to provide value from the highest upstream source through various value-adding nodes, to the end customer.

A strategic factor perspective

Strategy

Through an extended critique of the strategy literature, Chaharbraghi and Willis observed that strategy is driven by the need to be competitive, to adapt change, and to survive [7, 36]. They posit that the increasingly dynamic nature of environmental context has led to an increasing range of responses by organizations. As such, there is a plethora of strategy models and accompanying language which are still developing [12]. At this stage, there is no consensus in the literature as a definition of strategy or its accurate nature. Through a search of the strategy literature, we have amassed a lengthy list of notions relative to the nature of strategy and states that strategy is presented in the literature as everything from a pattern or plan, in a state of mind, and a learning procedure. There are 37 descriptors related to strategy in the literature, including differentiation and price leadership, adhering fit and scope, intent, and core competencies. Further, the literature states that strategy can be generic, deliberate or emergent, rational, incremental, implicit, explicit, prescriptive, descriptive or configurationally. Although scholars stated that this series of unconnected and often contradictory models do little, in fact, confuse practicing managers who are often fighting for the survival of their organizations and the livelihoods of their employees. Nevertheless, the authors have presented their own model which view strategy as a natural process involving constant evolution and continuous rotation [5, 36 and 40]. The factor ‘Development’ refers to strategies which allow the system to evolve as markets and ‘revolution’ refers to strategies aimed at actually making new market that can be exploited. It is remarkable that there is no consensus in the literature as to whether overt strategy making has any impact on organizational performance [47] and [13]. In recognition of the many views of strategy that exist in the literature, the broad definition that will be used in this paper is “judgmental designing, intuitive visioning, and emergent learning. It is about transformation as well as perpetuation; that involve individual cognition and social interaction, cooperative as well as conflictive. Therefore, it has to include analysis before and after sourcing as well as during negotiation and all of these activities must respond to what may be a demanding environment”[38].
Supply Chain Strategy

The term supply chain strategy is used in the literature to cover a broad range of concepts ranging from tactical to strategic. Sometimes the term is used simply to achieving minimum cost and predictable flow [22]. As a more strategic concept, it can refer to “strategic decisions made by companies including whether to outsource or perform a supply chain function in-house, the location and capacities of production and warehousing facilities, the products to be manufactured or stored at various locations, the modes of transportation to be made available along different shipping legs, and the type of information system to be utilized [44, 46]. A firm must ensure that the supply chain configuration supports its strategic objectives” and “Supply chain strategy” defines not only processes that firm should use but also what role is played by each supply chain entity [9]. Although, Katz is of view that the goals of appropriate SCS factors includes open and effective sharing of information, order coordination, predictable price changes, and effective long-term material planning [28, 43]. Schnetzler define SCS factors as a series of prioritized objectives focused on enhancing logistics success, thus enhance business performance [48]. They have listed general targets of SCS factors as improved quality and a means for increasing customer demands, enhancing delivery reliability, punctuality, improving delivery fill-rates and lead times. Due to increasing flexibility in the face of uncertainty and rapid change, reduce capital investments, as well as transportation, inventory, infrastructure and other supply chain costs [4]. They observed that the availability and exchange of information, and ongoing collaboration are also strategic targets. These authors seem to view SCS factors as the targets and the planning involved meeting goals defined by each sourcing vendors [48]. However, many of these targets might be viewed as tactical objectives. For example, if a particular company was trying to set and achieve many of these targets internally, they would generally fall into a lower level of planning or perhaps viewed as part of a continuous improvement approach.

Supply Chain Strategies

While supply chains may be formed and managed in an ad hoc manner, there are a number of strategies that may be formulated and implemented in an effort to make the chains more efficient and effective. It does not mean that these strategies will certainly bring desired results, but without a coherent strategy among the supply chain partners, it may be difficult to coordinate activities or focus on common goals. For instance, if a particular company’s focus is ‘cost leadership’, it may have quite different demands of its supply chain if its goal is ‘innovation’. Supply chains need to be customized and dependent upon the unique circumstances involved [1] and [9]. This may be dependent upon variables such as product characteristics [14, 46], context and integrative practices [23], product life-cycle stage [10], and contractual issues such as cost distribution and terms [41]. In a literature review of 37 studies published from 1996 to 2003 on international supply chain management, underline the necessity to implement clear and effective SCS factors that encompasses both the supply and customer sides of the chain [3]. This approach emphasizes that all links in the supply chain are a part of the value chain that leads to customer satisfaction.SCS factors can be studied from a number of perspectives, including the portion of the supply chain involved (e.g., upstream or downstream), and design philosophies including
focus on the product or the customer, lean and agile in an attempt to integrate all portion of the chain. In this section, the paper classifies and discusses different perspectives found in the literature relative to SCS factors. This classification is made under major research fields of business management, i.e., supply chain management (plan, source, make, deliver, return), organization theory (levels of integration), marketing (strategies based on product, demand, market segmentation, differentiation, cost leadership and market focus), operations perspective (lean, agile, and flexible), financial legal fields (contracts), and strategic perspective. The discussion is followed by taxonomy of SCS factors based on extant literature.

Supply Chain Management Perspective

Supply chain management broadly concerns itself with “plan, source, make, deliver, return” processes (Supply Chain Council, 2012), which provide us with a valid perspective to discuss about SCS factors.

‘Plan’ – Creating Strategies

Strategic planning in supply chain management is a nascent academic area, and forms the primary subject matter of this paper. Research on strategic planning process in supply chain management is relatively sparse. Schnetzler in a supply chain research, as part of a large two-year international research project called ‘ProdChain’, found that the methodology provided a structure to the development of SCS factors that was previously lacking in the five case studied companies [47, 49]. Further, they found that a detailed planning process approach was useful in identifying the root causes of problems such as excess inventories, and in tying SCS factors to corporate strategy and objectives. However, there has been little discussion about the relative advantages of a formal strategic planning process and emergent strategies, and whether adoption of different planning methods has any relationship with evolution or the formation process of specific supply chain itself.

‘Source’ – Upstream or Supplier Side Strategies

Although sourcing or upstream (supplier side) SCS factors are focused on the sourcing functions in the firm and the various tiers of suppliers. There is an overlap with production and downstream SCSFs. For instance, a marketing-related SCS factors (i.e., downstream) allows customers to order customized products may lead to an upstream SCS factors that focuses on suppliers capable of supporting such activity.

‘Return’ – Reverse Logistics Strategies

When visualized as a ‘forward flow’, value addition is the main concern of a supply chain. On the other hand, for Reverse Supply Chain Management (RSCM), the objective reversed and recovery of value. Reverse flows of products may not only cover return of damaged products, but also undamaged unsold product and out-of-season or obsolete products. Such a reverse flow scenario may be further confounded by short product life-cycles, upgrade offers, ever-new
product ranges, seasonal launches, and leasing of products. Focus on recovery of value has shifted RSCM from the ‘cost of doing business’ sphere into being generator of competitive advantage [37] and [42]. This underlines the importance of strategic planning for RSCM, covering a range of processes, ranging from recovery of ‘end-of-life’ products to remanufacturing.

**Product-Based Strategies**

The complexity of the operating environment for many firms has increased dramatically due to the interactive nature of the network formed by a wide array of customers and suppliers. This has necessitated the customization of SCSFs. Aitken suggest that this customization must be aligned with product characteristics and at stage of a particular product in its life cycle [1]. Crossovers with resultant efficiencies can be achieved, but each opportunity must be decided upon on a case-by-case basis to ensure that gains on some products are not offset by problems on others [1, 51]. Katz proposes that modularizing, appending and innovating SCSFs be based upon the characteristics of the products involved [28]. Although, modularizing, or providing assemblies to a customer, should increase the insulation of a firm’s competitive position because it will be more closely tied to its customer as a member of a smaller supplier community. In addition, the information sharing required allowing a supplier to provide modularized assemblies more tightly integrates with a supplier and its customer. Modularizing should result in fewer suppliers and therefore fewer transactions, communication nodes and relationships, thereby reducing the complexity of the network and the effort required towards its coordination. In that matter, ‘appending’ refers to a supplier’s intent to add higher margin products or services to their offering for existing customers [28]. Examples include delivery companies who have added logistics consulting to their service offering. Katz suggest that the appending strategy leads to tighter integration among supply chain partners, which in turn, leads to more accurate material planning and fewer unexpected issues such as material shortages or sporadic ordering [28]. However, there are risks to the supply chain when this strategy is employed as it involves firms moving away from their core competencies [50] and diverting resources away from existing products and services. An innovating SCS factors refers to offering new products or services in an attempt to access first-to-market advantages [28].

**Demand-Based Strategies**

Customers are becoming increasingly demanding in terms of value and this has, at times, been viewed as an issue to be addressed solely by marketing. The changes in demand patterns must be creatively addressed through the whole supply chain [18, 52]. They further suggest that the strategies employed must be specific to the particular environmental and competitive context, and aligned with the end-customers perceptions of required value. They state that demand fulfillment must be aligned with demand creation. This has also been referred as demand chain management [24]. Specifically, Godsell suggest that it is end-customer buying behavior that should be the focus of SCS factors formulation [18]. Further, they posit that end-customers should be segmented based on their buying behavior, and appropriate SCS factors should be developed to target the segments. This clearly means a segmented marketing strategy aligned
with a corresponding differentiated set of SCS factors.

**Strategic Perspective Analysis**

- Though a large number of researchers have focused on different perspectives of SCS factors, these perspectives broadly deal with operational or tactical domains. There is an urgent demand for embracing a strategic perspective for SCS factors, that is, a long-term perspective that helps alignment of long-term costs, risks and incentives for supply chain partners [37]. For long it has been presumed that the interests of supply chain partners are somehow one and the same, or at least aligned, and they generally run without conflict of interests. In the real world, it is not so simple. This strategic aspect calls for immediate attention both from academia and the supply chain management practitioners.

- The proper synchronization of the business strategy aligned with SCSF renders a firm to reach targets. Further, to achieve the SCSF and business strategy, location plays an important role. As an instance, TISCO supply chain strategy in the year 2000 take intervention steps and changed to a robust supply chain. The design resulted in decrease of product delivery time from 3-4 weeks to 2 weeks [39].

- Further, the SCS factors literature contains approaches that set out from strategic to tactical. The predominant focus of the research on the medium to short-term ‘tactical end’ of the continuum can be traced to origin of supply chain management research as a part of production and operations management arena, where the primary focus is on operational or tactical levels of preparation and decision making.

- The capacities of SCS factors are enhanced by adding reference to the internal capability analysis that is common with the deliberate strategy formulation approach. In the case of supply chain, this internal capability analysis would include the capabilities of the various members of the chain and the hoped-for synergistic nature of their interrelationships.

- Continuous improvement is certainly viewed as a component of the firms overall strategy, but the tactical targets and plans perhaps simply be a part of the implementation. In the context of this paper, SCS factors will be defined as the deliberate and/or emergent conceptual framework by which a firm involves its supply chain and supply chain members in efforts to reach its own corporate strategic objectives. This broad definition allows the incorporation of policies that are related to tactical efforts, such as reducing the inventory levels of firm, and strategic actions such as deciding to partner with, and making investments in other firm at distant country to enable access to a new market or resources.

- As the fact presented is based on the current state of research in the area, it covers a continuum of perspectives, ranging from strategic to tactical and up to operational.
• If the strategy is successful, the entire supply chain gets benefitted as a new market niche. There is also the risk of fragmenting SCS factors to an ineffective level as strategies are changed when products change or when product moves along in life cycles.

Conclusion

While strategies are focused on sections of the string that result in improvements to a specific issue, they are restricted in their ability to enhance overall performance. This is because strategies can contribute toward imbalance in supply chain characteristics and consequences. While these SCS factors have the advantage of focusing on the needs of the product or customer, they also have weaknesses. The key is to align the philosophy with the corporate strategy, merchandising strategy and product strategy of a particular product, and be prepared to change the SCS factors if other strategies change. A focus on supply chain integration can create close links between all supply chain partners and the functional departments within the partner organizations toward achieving the supply chain and corporate objectives of the firm. While there is little focus on the literature relative to how SCS factors are formulated. This paper discusses processes that resemble those used to create corporate strategy [48]. From a high-level strategic perspective, most parts of a corporate strategy should be impressed by its relationships with suppliers, distributors and service providers, or in other words by its SCS factors. Thus, it would appear prudent for a firm to ensure that its SCS factors are well aligned with its corporate strategies to enable the diverse portions of corporate strategies to mutually align with one another. However, this paper is valuable to academics in ascertaining the current stage of research in SCS factors and identification of promising future research areas. Although, it is also valuable for practitioners, as it offers a systematic taxonomy of the latest SCS factors that can be immediately applied in SC area. The paper also brings out the need for a strategic view of SCS factors, in contrast to the current focus on tactical and operational aspects of supply chain management.

Bibliography


