

A Literature Review on Supply Chain Management Practices in Different Contexts

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Abstract

Nowadays manufacturing organizations are competing based on supply chain to supply chain rather than organization to organization. Effective supply chain management helps organization to secure his position in this competitive environment and improving organizations performance. The analysis of this research is based on secondary data including books, journals, conference papers, review papers, online data base etc. The management of the supply chain and the roles of various actors involved differ from industry to industry and company to company. As a result Supply Chain Management (SCM) has become a vital issue for manufacturers, professionals and researchers. It is felt that to manage the supply chain effectively entire structure of supply chain must be understood properly. This paper attempts to provide the reader a complete picture of supply chain management through a systematic literature review. It presents main activities of supply chain and the step-by-step approach for understanding a complete picture of supply chain. A literature review reveals a considerable spurt in research to theory and practice of SCM. The aim of this study was to provide an up-to-date and brief review of the SCM literature that was focused on broad areas of the SCM concept.

Key words: *Effective Supply Chain, Organizations' performance, Supply Chain Management (SCM)*

1. Introduction

A supply chain includes all the activities, functions and facilities involved in the flow and transformation of goods and services from the material stage to the customer. The SCM helps in reduction in the inventory, accurate information sharing and develop trust among the SC partners. Yet, despite these important benefits, organizations continue to encounter a barrier which hinders them from effective implementation of supply chain. These barriers are known as SCM barriers. They exist between inside and outside of manufacturing organization. unclear organization objective, Lack

of top management commitment and support, Short-term decision-making perspectives, Lack of information technology, Poor ICT structure, Lack of education and training to employee and supplier employee, Lack of necessary tools management skills and lack of motivation and employee involvement are some of barrier exist within manufacturing organization while resistance to change, lack of measurement system, unwillingness to share information among supply chain partner, A lack of inter-organizational cooperation and coordination are barrier outside manufacturing organization. In the current competitive scenario supply chain management assumes a significant importance and calls for serious research attention, as companies are challenged with finding ways to meet ever-rising customer expectations at a manageable cost. To do so, businesses must search out which parts of their supply-chain process are not competitive, understand which customer needs are not being met, establish improvement goals, and rapidly implement necessary improvements. Previously manufacturers were the drivers of the supply chain - managing the pace at which products were manufactured and distributed. Today, customers are calling the shots, and manufacturers are scrambling to meet customer demands for options/styles/features, quick order fulfillment, and fast delivery. In practice, supply chain-based companies (e.g., Dell, Wal-Mart, Samsung, Toyota, Lenovo, Gome, etc.) have used different performance management tools to support their supply chain strategies. Monitoring and improvement of performance of a supply chain has become an increasingly complex task. A complex performance management system includes many management processes, such as identifying measures, defining targets, planning, communication, monitoring, reporting and feedback. Manufacturing quality - a long-time competitive differentiator - is approaching parity across the board, so meeting customer's specific

demands for product delivery has emerged as the next critical opportunity for competitive advantage. Companies that learn how to improve management of their supply chain will become the new success stories in the global market place. Study on Benchmarking shows significant cost differences between organizations that exhibit best-in-class performance and traditionally, Supply Chain Management (SCM) has been a melting pot of various aspects, with influences from logistics and transportation, operations management and materials and distribution management, marketing, as well as purchasing and information technology (IT). Ideally, the all encompassing philosophy of SCM embraces each of these functions to produce an overall supply chain strategy that ultimately enhances firm performance. Supply chain management is the integral and important part of organization to increase the profit of the organization. Effective supply chain management has become a potentially effective way to securing competitive advantage and improving organizations performance.

2. Objectives

The objective of the research paper are mentioned below:

- To study various aspects of supply chain management in different contexts
- To understand different elements of supply chain management
- To find new trends in the field of supply chain management and logistics

3. Literature Review

Most of researches are intend to find optimum solutions for operations management in today's competitive landscape and best value supply chains are the chains that are most likely to prosper within this today's competition. Best value supply chains use strategic supply chain management in an effort to excel in terms of speed, quality, cost, and flexibility. Despite the value of this concept to modern firms, little is known about how prominent theories can help shed light on what distinguishes these chains from others and makes them exceptionally successful. Ketchen et al. noted that as a relatively new concept, the notion of best value supply chains can become clearer and richer if examined from a variety of important theoretical

perspectives. It is showed implications for the best value supply chain concept offered by nine prominent theoretical perspectives: transaction cost economics, agency theory, resource dependence theory, institutional theory, game theory, network theory, social capital theory, strategic choice, and the resource-based view/knowledge based view. On our own we can say that prior to elaborating on the nine theories, it is important to state that a number of other theories can also help explain supply chain phenomena (e.g., behavioral theory of the firm, punctuated equilibrium, industrial organization, contingency theory, evolutionary economics, and population ecology). Here I would like to perform comparison analysis done by Ketchen (et al.) where he compares best value and traditional supply chains. Douglas J. Thomas & Paul M. Griffin (1996) reviewed the literature addressing coordinated planning between two or more stages of the supply chain, placing particular emphasis on operational planning defining three categories of coordination: Buyer-Vendor coordination, Production-Distribution coordination and Inventory-Distribution coordination. Lambert et al. (1998) and Simchi et al. (2003) emphasized on holistic view i.e., importance of overall optimization in supply chain rather than functional optimization, thus adding one more aspect to SCM. Reviewing the literature, Mentzer et al. (2001) synthesized the definitions of supply chain management and defined it as "the systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole." Michael J. Maloni & W.C. Benton (1997) suggested that the expanding importance of supply chain integration presents a challenge to operations researchers to focus more attention on supply chain modeling and there are numerous opportunities for operations researchers to provide support for the current conceptual based supply chain research. They also compared traditional supplier relationship with supply chain partnership and highlighted benefits of supply chain partnership. Christopher C. Yang et al., (2000) developed a system by integrating constraint network model and multi-agent technology to support coordination and management of supply chains. The agents communicate through internet to support dynamic optimization. Inter-functional integration between a

firm's marketing and logistics functions is necessary to fully capitalize on potential service improvements. The results of research by Alexander E. Ellinger (2000) on performance benefits associated with encouraging effective marketing & logistics interdepartmental relations suggest that an appropriate evaluation and reward system which recognizes team work and cooperation as a significant catalyst for the promotion of cross-functional collaboration. Ursula Y. Alvarado & Herbert Kotzab (2001) conducted case studies in Austrian grocery industry using the principles (relationship initiation, relationship maintenance and relationship termination) of Efficient Consumer Response (ECR) by integrating logistics in marketing.

Martin Rudberg & Jan Olhager (2003) compared manufacturing network theory (intra-firm focus) and supply chain theory (inter-firm focus) under operations strategy perspective focusing on two structural decision categories: facilities and vertical integration. They suggested ways to integrate configuration and coordination of networks to analyze network hierarchies and to develop inter-firm network strategies. Many authors seem to agree that integrative practices and a high level of integration have positive impacts on corporate and supply chain performance. The integration of electronic commerce and associated Business-to-Business (B2B) transaction capabilities lead to global inventory visibility, reduced costs and improved customer service by decreasing lead-time variability, shipping and receiving cycle times, increasing shipment and inventory accuracy (Scott J. Mason et al., 2003). More developed SCM is indicated by systematic integration, i.e., standardized and automatic inter-organizational interfaces. In order to improve effectiveness of SCM, a synchronized operation of all partners in the supply chain is required. In the past, this has been achieved by one company owning or having control over all businesses in the chain. Now, it is more likely that this integration is carried out by using Inter Organizational Information System (IOIS) (D. Sculli et al., 2001, Elizabeth A. Williamson et al., 2004).

Subsequent to Houlihan (1985), numerous other researchers introduced new concepts and suggested frameworks for managing the supply chains. Ganeshan et al. (1999) stated that SCM goes beyond the boundaries of a company and linked operating

decisions to strategic considerations. Stevens (1989) observed that more successful companies will be the one who developed an integrated supply chain strategy. Development of SCM can be traced from the definitions given during the various periods since the 1980s. Research study of Caddy and Helou addresses the question of whether the field of general systems theory could make a contribution towards a greater understanding of supply chains. Where the first principle indicates that if organizations are to have "agile" or "quick response" supply chains, simpler supply chains, in terms of their topology, or type and nature of the product being exchanged, should be preferred to more complex ones. The second principle indicates that organizations need to manage their supply chains on the basis of their activity, devoting more management resources to highly active ones as compared to less active ones. The third principle allows organizations to better understand their supply chains by decomposing these systems into smaller and more easily understood sub-systems. The fourth principle indicates that organizations need to accept the fact that supply chains are dynamic rather than static, and so need to focus the attention of managers at all levels on the types of changes required, and the resource implications that these changes will have on the operation of the supply chain. Regular review and change of management practice will also be necessary in order to maintain supply chain effectiveness. Oliver and Webber (1982) simply defined SCM "as management of flow of goods from supplier to end consumer", while in 1990, Ellram and Cooper described SCM as a function integrating philosophy in a supply chain. Berry et al. (1994) focused more on maintaining long-term relationships among members in supply chain, which clearly reflects the state of environment prevailing in supply chains in 1990s. La Londe and Masters (1994) proposed that "a supply chain is a set of firms that pass materials forward". Normally, several independent firms are involved in manufacturing a product and delivering it to the consumer in a supply chain—raw material and component suppliers, product assemblers, channel partners, dealers, retailers and logistics companies are all members of a supply chain. Benita M. Beamon & Tonja M. Ware (1998), developed the Process Quality Model (PQM) which is an extension of Total Quality Management (TQM) to evaluate, improve and control the overall quality of the supply chain system considering qualitative performance

measures such as customer satisfaction, flexibility, information and material flow integration, supplier performance and quantitative performance measures based on cost and customer responsiveness.

Sink and Tuttle (1989) stated that “you cannot manage what you cannot measure”. Measurement of supply chain processes and their benchmarking is essential for improving the efficiency and effectiveness of supply chain management. Beamon (1998) provided a definition as “a performance measure, or a set of performance measures, is used to determine the efficiency and/or effectiveness of an existing system, or to compare competing alternative systems”. Performance evaluation is very important as a strategic tool and also provides means to achieve the objectives required, fulfilling a firm's mission/strategy statement. As highlighted in the earlier section, major task in performance measurement is to identify, evaluate and select the performance measures, which are appropriate to assess inter-organizational performance. A general tendency in many firms has been to evaluate performance, primarily on the basis of cost and efficiency (Skinner, 1971). This has resulted in most measures focusing on financial data such as return on investment, return on sales, price variances, sales per employee, productivity and profit per unit production etc. The literature reviewed so far highlights the importance of managing the design and development of performance measurement systems to ensure that they continue to reflect the environment and objectives of the organization. The literature also suggests that the factors affecting evolutionary change within organizations, and hence the evolution of performance measures, are many and complex. Effectively measuring and managing of supply chain performance is a complex and difficult task. If performance measurement is to lead to long-term and continuous performance improvement, then different stages of the performance measurement and management processes such as design of measurement systems, their implementation, and identification of appropriate measures to be used are to be successfully implemented. Organizational support in terms of knowledge sharing, leadership, structure and learning is immensely required for successful implementation. Performance measurement system is an important feedback mechanism for monitoring performance, identifying progress, fix responsibility and rewards, enhance inter personal communication,

and diagnose problems. The performance metrics need to be integrated and aligned with the organization's business goals; otherwise they will not be able to respond effectively to market changes and opportunities. Effective decisions making is not possible if performance is measured differently in every department in the organization. Thus for any business organization, measurement of its performance becomes critical and necessitate a robust performance measurement system. De Toni and Tonchia (2001) conceptually classified the performances of the operations into two broad categories of 'Cost performances' and 'Non - Cost performances', which have further divisions as shown in Figure 2. Non-financial performances include measures related to time, flexibility and quality. It is an important move towards a multi criteria approach, which can correspond to the need of holistic and strategic approach. Nonmonetary units of measures generally measure the non-cost performances and as far as they influence the economic and financial performances (net income and profitability), the link with them cannot be calculated in a precise manner as for the cost performances. Non-cost measures are divided into three categories, namely quality, time and flexibility related measures. Agarwal and Shankar (2002) proposed an analytic network process (ANP)-based model for analyzing the alternatives affecting supply chain performance. It also provides the decision methodology to prioritize these alternatives, so that supply chain performance can be improved. A process-based systematic perspective was employed to build an effective model to measure the holistic performance of complex supply chains. Fuzzy set theory was introduced to address the real situation in judgment and evaluation processes. Fynes et al. (2005), Gunasekaran et al. (2001) developed a conceptual framework to link up SC relationship dynamics and manufacturing performance and found out the less evidence of SC relationship dynamics on manufacturing performance.

As global markets grow increasingly efficient, competition no longer takes place between individual businesses, but between entire value chains. Therefore executives are developing supply chain partnerships/collaboration in an attempt to reduce costs, improve service and to gain competitive advantage. Horvath (2001) proposed that Collaboration through intelligent e-business networks would provide the competitive edge to all

the participants in a value chain to prevail and grow. It is found that collaborative partnerships can be achieved both via trust and through electronically mediated exchange. Hall and Matos (2010) emphasize that the social dimension of sustainable development is emerging as the key challenge in sustainable supply chains. They suggest that the relationship among government policies (regulations and incentives), secondary stakeholder pressures and the profile and pressure placed on the focal firm plays an important role in sustainable supply chains. The recent ISO 26000:2010 guideline on social responsibility mentions accountability, transparency, ethical behavior, respect for stakeholders interests, respect for rule of law, respect for international norms of behavior and respect for human rights” as principles of sustainability. Silvius, et al., (2012) proposed six “principles of sustainability” for integration across projects and organizations. These principles state that sustainability is about balancing or harmonizing social, environmental and economical interests, it has both short term and long term orientation as well as local and global orientation, it encourages consuming income, transparency and accountability and also supports personal values and ethics. The present trend in logistics is the concept of 4PL (Fourth Party Logistics providers) which is based on drawing the disparate 3PL’s together to provide a seamless solution to the client (Paul Liston et al., 2007). Thomas J. Kull et al., (2007) integrated extended supply chains, e-commerce and learning curve theory. The authors argued that learnability index utilizing learning rate metrics can be helpful for firms wishing to benchmark their supply chain’s customer interface effectiveness. Piero Migliarese & Vincenzo Corvello (2007) compared virtual enterprises with vertically integrated firms and production networks. They argued that virtual enterprises are suitable for firms producing complex, modular products, with frequent changes in components but of low knowledge specificity. Companies are adopting sustainability practices for a host of reasons depending on the industries and geographies in which they operate. Sustainability and sustainable development are effectively ethical concepts, expressing desirable outcomes from economic and social decisions. Elaborating on the three perspectives of the Triple-P concept, several organizations developed frameworks of indicators that would allow organizations to evaluate the sustainability aspects of different policies and

projects, as well as to monitor progress. In fact, the literature on these models is a veritable jungle of different approaches and numerous case studies. A widely used framework in (external) sustainability reporting is the ‘Sustainability Reporting Guidelines (SRG)’ by the Global Reporting Initiative (GRI). Companies can use the SRG to indicate to shareholders and consumers their economic, social and environmental performance. GRI’s objective is to facilitate sustainability reporting for companies and thereby stimulate them to operate more sustainably. The SRG framework consists of an extensive set of indicators, from which companies can select a set that is relevant to their operations or industry. Frankel et al. (2002) showed that one of the most common usages of partnerships is in the provision of transport and distribution services. Authors recommended that rather than devoting effort and resources to build an in-house supply chain it can often be much more cost effective to form a partnership with a shipping company, and allow them to perform the job of distribution at a lower cost than the enterprise could manage itself. Benita M. Beamon (1999) presented an overview for evaluation of the performance measures under three headings: resource measures, output measures and flexibility measures. The author presented a framework for the selection of performance measurement system to manufacturing supply chains. Benchmarking is another important method that is used in performance measure evaluation which also helps as means of identifying improvement opportunities. From purchasing point of view, careful and effective Supplier Relationship Management (SRM) efforts allow firms to selectively screen out poor-performing suppliers and build successful, trusting relationships with the top-performing suppliers. Thus, firms must rationalize the size of their supply bases to develop strategic alliances which would result in greater levels of supply base performance.

4. Conclusion

A literature review reveals a considerable spurt in research in theory and practice of SCM. Combining and informing on features of Supply Management and distribution Management. This integration has resulted in the concept of extended enterprise and the supply chain is now manifest as the collaborative supply chain across inter company borders to maximize the value across the entire supply chain. During the search of papers to work on I have

noticed that there is a need for some further research that I have identified as following: to conduct empirical studies about the impact of Internet on several e-SCM processes, as for example the reverse and demand management processes which, so far, have only been considered by a couple of authors. Another important area of research is the application of decision models and technologies on Internet. Green practices including green design, manufacturing, E-waste management, reverse logistics, and end-of-life management have been crucial in making supply chains environment friendly. The available existing frameworks on performance management in SCM have also been reviewed to understand its implication in measuring performance of SCM. Other concept such as SCM relevant for innovative products having shorter life cycles is also reviewed to be included in the study. This review of literature has highlighted the inadequacy in existing frameworks and provided foundation and insights for conceptualization of industry specific SCM framework. As more and more firms have high quality and real-time information available, the use of these decision technologies will increase, since they add significant value to the members of a supply chain. The SCM is continuously redefining itself. I also have noticed that past literature reviews provided valuable results, they were based upon the random selection of articles, book chapters and conference proceedings. Other literature reviews were either more focused on operations management or examined a single journal. The aim of this study was to provide an up-to-date and brief review of the SCM literature that was focused on broad areas of the SCM concept. Social aspects in SCM include compliance and governance, transparency and accountability, ethics, values and human rights and welfare. Innovation has been identified as a major dimension for technology intensive industry and its origins and applications have been documented. It is my hope that future researches will pay more attention on generating much needed conceptual and empirical work in the SCM literature, thereby creating a body of literature that is more heavily influenced by a deeper analysis of the supply chain on a chain wide or network basis.

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