

An Overview of Supply Chain Competitiveness in Manufacturing Industries: Strategies and Framework

Ajay Verma

Department of Mechanical Engineering, Maulana Azad National Institute of Technology, Bhopal (M.P.), India

ABSTRACT: The purpose of this paper is to highlight the importance of the concept of supply chain and supply chain competitiveness (SCC) and to present a concise description of various strategies and variables of to achieve the same. A literature review is conducted on key supply chain competitiveness issues and its determinants. Various dimensions related to supply chain competitiveness are explored. This paper explores research in the less explored area of SCC and offers practical help to academicians, researchers and practitioners in providing a direction for supply chain competitiveness which leads to improvement in the supply chain.

KEYWORDS: Supply Chain, Supply Chain Management, Supply Chain Competitiveness, Competitiveness.

I. INTRODUCTION

THE fierce competition in today's market is led by advances in industrial technology, increased globalization, and tremendous improvement in information availability [1]. Competitive priorities have forced organizations to change dramatically due to rising customer expectations, continually increasing competition on a world-wide scale, time and quality based competition and mass customization [2].. In the present scenario, there is a need for managing and improvements of supply chain competitiveness as the real competition, presently, are among the supply chains and not among the [3]. Supply chain competitiveness (SCC) is gaining importance for the reason that organizations will survive, in this global competitive environment, if they are competitive enough from both supply chain as well as customers satisfaction point of view.

The paper makes an attempt to understand the importance of SCC and SCC issues and then presenting important strategies and variables of supply chain competitiveness. The objectives of this paper are three fold: 1) to understand the concepts of supply chain and supply chain competitiveness; 2) to highlight the importance of the supply chain competitiveness; and 3) to present a concise list of SCC strategies.

II. LITERATURE REVIEW

Numerous researchers have explored supply chain and supply chain management on various issues viz. definitions, dimensions, performance measurement, models, applications, strategy and allied concepts, supported by a number of empirical studies from a variety of enterprise related application areas (supply, manufacturing, retailing, distribution and transportation, inventory management, information flows, demand management, value chains, customers' satisfaction, and many more). For the present work, the literature can be divided in three sections viz. Supply chain, supply chain management and supply chain competitiveness.

(A) Supply chain

The subject of supply chain has been explored by numerous researchers and practitioners from various perspectives and applications. Table I presents select definitions of supply chain.

TABLE I
SELECT DEFINITIONS OF SUPPLY CHAIN

Author	Definition
[4]	The network of organizations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services delivered to the ultimate consumer.
[5]	A set of firms that pass materials forward
[6]	The alignment of firms that brings products or services to market including the final customers as part of the supply chain.

From the table, supply chain can be defined in general as “a network of organizations or individuals directly involved in the upstream and downstream flows of products, services, finances, information and value from a source to the ultimate customers.”

(B) Supply chain Management

The concept of supply chain management (SCM) has also been explored by various researchers. Table 2 presents a compilation of some important definitions of supply chain management.

TABLE II
SELECT DEFINITIONS OF SUPPLY CHAIN MANAGEMENT

Author	Definition
[7]	This deals with the total flow of materials from suppliers through end users.
[8]	To synchronize the requirements of the customer with the low of materials from suppliers in order to effect a balance between what are often seen as conflicting goals of high customer service, low inventory management, and low unit cost.
[9]	The process of strategically managing the movement and storage of materials, parts, and finishes goods inventory from suppliers through the firm and to the customer.
[10]	The most advanced state in the evolutionary development of purchasing, procurement and other supply chain activities. At the operational level, this brings together functions that are as old as commerce itself-seeking goods, buying them, storing them and distributing them. At the strategic level, it is a relatively new and rapidly expanding discipline that is transforming the way that manufacturing and non-manufacturing operations meet the needs of their customers.
[11]	The management of upstream and downstream

	relationships with suppliers and customers to deliver superior customer value at less cost to the supply chain as a whole.
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From the table, Supply chain management can be defined as “a set of integrated activities to manage upstream and downstream relationships with suppliers, manufacturers, distributors, retailers and customers in order to deliver superior customer value at less cost, efficient and effective distribution, purchasing and procurement and other supply chain activities with a continuous flow of information and to deliver customer service and gaining competitiveness.”

(C) Supply chain competitiveness

Researchers have tried to describe supply chain competitiveness (SCC) for a long time and a wide range of strategies have been considered for the same. According to [2], mass customization provides a tremendous increase in variety and customization without sacrificing efficiency, effectiveness or low cost. His emphasis was on mass customization for gaining competitiveness of supply chains. On the other hand, [4] suggested information and communication as the most profound and influencing changes to be adapted that affect the companies as well as the supply chain competitiveness. He suggested the use of internet and other communication systems for SCC. Operations strategy is considered as the basic competitive tool which concentrate upon two common themes: process and content [6]. The important role of operations management and operations strategy for SCC is well documented by [7] and [8]. Operational activities are described as the basic units of competitive advantage by [9]. He argued that the operational effectiveness of a business directly contributes to competitiveness and market leadership. According to [2], Organizations must be quick, agile, and flexible to compete efficiently, which can not be obtained without coordination of the companies in supply chains [3]. In recent years, supply chain competitiveness is gaining a huge importance due to the challenges faced by the organizations in the global environment. [1] argued that companies may compete if they develop and manage cooperation and collaboration partnerships. According to [10] flexibility has the greatest role in competitiveness of supply chain. Agility is suggested as the competitive priority beyond flexibility and cost efficiency [11]. [3] suggested information, intelligence and expertise as the critical organizational sources for competitive advantage. The “latest” approach for achieving competitiveness is through closer supplier-customer relationship by the “Advanced Supplier Partnership” concept introduced by [7]. This concept is based on effective materials management coupled with price adjustment provision systems, agreed in advance between suppliers and customer. The rapid growth in computing technology and the advent of the internet have made possible a greater grade of connectivity between supply chain partners. According to [8] there has been a growing recognition of building relationship with the customer for improvements in profitability, serviceability and reduced costs in the supply chain. [10] argued that competitive advantage can be obtained not just through the products sold, but also through the way in which we manage the flows in a supply chain. He presented twelve drivers of supply chain competitive advantage which are, according to him, necessary for supply chain to be competitive. On one hand, [1], a company’s competitive strategy defines, relative to its competitors, the set of customer needs that it seeks to satisfy through its products and services whereas on the other hand, [4] emphasized on product management. Table 3 presents a list of supply chain competitiveness strategies reported in literature.

TABLE III
SUPPLY CHAIN COMPETITIVENESS STRATEGIES

Author	SCC Strategy
[4]	Mass customization
[9]	Information and Communication
[6]	Process capabilities
[10]	Operational effectiveness
[3]	Operations Strategy
[2]	Coordination, Cooperation, Collaboration , Flexibility
[1]	Agility, Flexibility

[4]	Flexibility
[11]	Information, Intelligence, Expertise
[6]	Strategic partnerships/alliances
[5]	Customer relationship, agility
[7]	Customer satisfaction
[8]	Product Management, SC flow management, SC Synergy, Demand Management

III. FRAMEWORK FOR SCC

Based on the strategies reported in literature and importance of supply chain activities, a conceptual framework for supply chain competitiveness has been presented in figure 1, which is showing activities required for supply chain competitiveness, environment in which the supply chain has to compete and outcomes of achieved supply chain competitiveness.

The conceptual framework of SCC is divided in three parts:

- (A) SCC inputs,
- (B) SCC environment
- (C) SCC outcomes

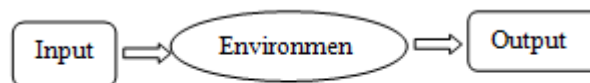


Fig. 1 Framework for SCC

(a) SCC inputs

SCC inputs are the activities to be performed at different levels of the supply chain to achieve SCC. These activities in supply chain are necessarily be required to get competitive advantages. This part is consisted of the following activities:

- Flexibility
- Coordination
- Collaboration
- Cooperation
- Customer orientation
- Supply chain synergy
- Mass customization
- Supply chain flow cycles
- Integration of key processes
- Demand management
- Product management
- Strategic alliances
- Agility

(b) Supply Chain Environment

Supply chain Environment is the market in a flow of forward and backward information with global competition.

2) Supply chain competitiveness outcomes

Gaining SCC is a task achieved by performing the activities in part A. The outcomes of SCC are given below:

- Value to the customers

- Customers' Satisfaction
 - Responsiveness to quick changes
 - Innovation
 - Improvement in the products and services
 - Profitability to the organization
 - Competitive Advantage
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- Value to customers: As high quality of products is available at low costs, customers are getting more value through the SCC. Adding value to the product is an inherent feature of SCC.
 - Customers' satisfaction: Most profound outcome of SCC is customers' satisfaction. More the supply chains are competitive; more is the satisfaction to the customers. More the satisfaction to the customers more is the competitive success of the supply chain.
 - Responsiveness: Due to SCC, the supply chains are more flexible and agile; hence responsiveness of the organizations will increase. I.e. less time is required to respond to the changing situations.
 - Innovation: innovation is another important outcome as it relates requirements into the reality. Hence supply chains get competitiveness as demand and product chain are managed simultaneously through innovation satisfying the customers.
 - Profitability to the organization: This is the ultimate goal of any organization, which is achieved by SCC.
 - Competitive advantage: Competitive advantage is achieved by SCC which in turn results in profitability, and low costs of products.

Looking to the outcomes from SCC, we can say that SCC is one of the most important aspects of business success. In this world of competition environment, SCC provides solution to those questions which are to be answered by each firm.

Information for Authors, is available at the web site.

III. CONCLUSION

An overview of supply chain competitiveness strategies has been presented in this paper and a framework is also dealt with. The key activities, environment and outcomes of SCC are being depicted. It may be noted that the activities for SCC are interrelated. It is expected that this framework would be highly beneficial to the organizations in leveraging the efficiency of supply chain management and to achieve supply chain competitiveness. Some of the key benefits visualized are:

- It helps in understanding the activities, roles and responsibilities of suppliers, manufacturers and distributors for achieving SCC.
- It provides directions for future studies for the supply chain competitiveness.
- It can be used as a guiding tool to understand SCC and further improvements.
- It can be used for managing supply chain according to the needs of organizations.

The paper highlighted some of the major activities, environment and outcomes of supply chain competitiveness. They need further to be determined empirically along with their relative impact on supply chain performance. The major insights gained through this paper suggest a conceptual supply chain competitiveness framework that will be useful to the academicians, administrators of the organizations as well as practitioners.

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