

## Is Supply Chain Management Important To Implement In Manufacturing Industries of Saudi Arabia?

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### Abstract

Supply Chain management is becoming very crucial for the survival of world class enterprises. Economic slowdowns are pronouncing major stresses to keep critical products & suppliers moving, manage inventory levels efficiently and maintain productivity. In this paper we intend to emphasize on studying the existing supply chain of Saudi Arabia. SCOR model would be utilized to interpret the problems in SCM and generate alternative solution. Performance measurement methods would be induced to monitor performance, reveal progress, enhance motivation and diagnose problems in Saudi Manufacturing Industries .

The paper will start by general introduction with an overview about supply chain management. Then, it will summarize the literature work that has been done so far with advantages of supply chain management. In next section, problem definition and analysis approach will be discussed. Finally, the paper will close with a conclusion

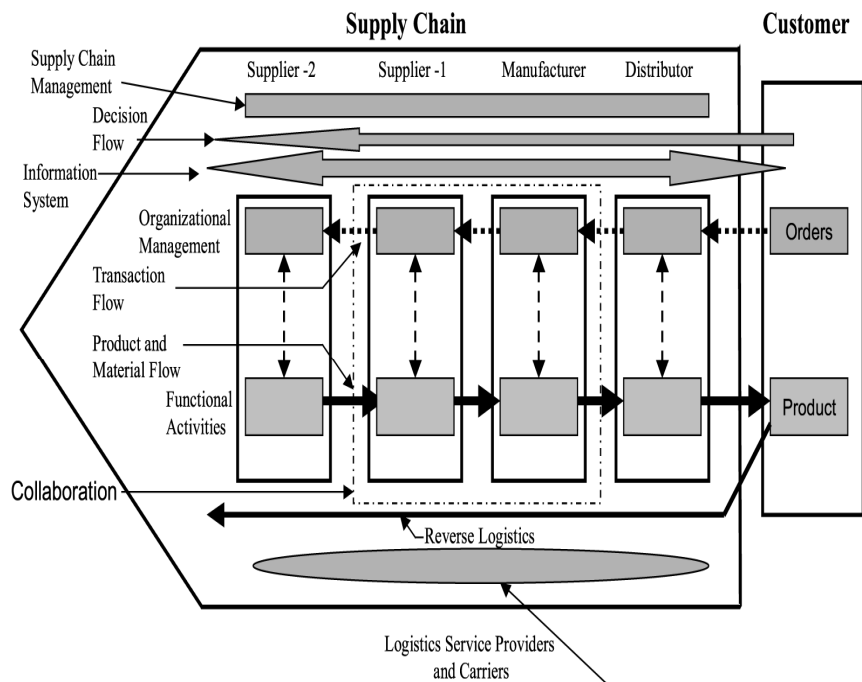
**Keywords:** Supply Chain Management, Supply Chain Performance, Manufacturing indutsry, SCOR, Performance Management

### 1. Introduction

In 19<sup>th</sup> century, a lot of service providers and manufacturers got together with their strategic suppliers to upgrade traditional supply and materials management functions. The reason was to integrate all of them as part of unique corporate strategy. Likewise, many wholesalers and retailers also integrate their logistics functions with other functional areas to improve and enhance competitive advantage. As a result of this practice these two traditional supporting functions of corporate strategy evolved and merged into a strategic approach to materials and logistics management, commonly known as supply chain management (SCM). Supply chain management has gained its importance as one of the 21st century manufacturing paradigms for improving organizational competitiveness. SCM has been considered as a competitive strategy for integrating suppliers and customers with the objective of improving responsiveness and flexibility of manufacturing organizations. The integration of these functions would result in potential benefits such as inventory reduction, improved delivery service, and shorter product development cycles because of close coordination between functions.

According to the definition of SCM by the Global Supply Chain Forum, SCM is the “integration of key business processes from end user through original supplier that provides products, services, and information that add value for customer and other stakeholders”.

To elaborate more, a general SCM model is given as follows:



**Figure 1: SCM Model [22]**

Enterprises all over the world face challenges such as competitive pressures, increasing global competition, decline in profit margins deregulation in many business environments. Most of the big corporations are looking for different innovative operational strategies to secure market share and improve profits. Specifically, discrete manufacturing markets driven by mass customization and e-commerce are forcing retailers and manufacturers to shorten planning cycles, compress manufacturing lead times, and expedite distribution which made enterprises worldwide feel the importance of SCM. It is becoming more crucial for the survival of world class enterprises.

The same effect is getting transferred to Saudi Arabia where companies have very seriously started thinking for an innovative solution to overcome the sudden pressure and competition with the local industry. Foreign companies have started stepping in the Kingdom to satisfy the regional demands of consumer goods. In searching for a solution that would lead towards continuous improvement, attention is diverted to SCM which is a totally new technology of managing the business and the relationship among all the members, back to the original suppliers and out to the end consumers.

Saudi Arabia got a big market of consumer products that is why many international companies have located their plants in the region to facilitate the demands cost effectively. Mostly consumer goods are produced through manufacturing processes. These types of industries got a major scope of implementing SCM and realize the benefits as the coordination between functions count a lot and that ultimately result in cutting down the overall product cost to make it more competitive in market. Effective management of the supply chain is analyzed as the one of the driver of reductions in lead times, material costs, and improvements in product quality and responsiveness.

This research is an effort to fill this knowledge gap. It is imperative to study to what extent the SCM important in Saudi Arabian industries. We are intending to study the existing Supply Chain and further work on highlighting the problematic areas that are affecting the functionality of SCM in shared services rendered by the organizations. Improvements would be proposed after analysis and performance measurement methods would be discussed. These are the motivations which form the basis for this research.

## 2. Literature Review

Michael, Yu and Xianguhua provide a list of propositions to explore and investigate the mechanisms through which supply chain innovations can influence business cycle [12]. Most of the organizations and manufacturing industries are primarily concerned with the satisfaction of their costumers at a minimum cost. In order to improve companies' customer's recognition and revenue growth, there is serious need of adopting and exploring

the concept of global sustainable supply chains within a collaborative perspective [2]. The basic hypothesis is "the more integration-the better the management off the chain". It is claimed that in future the competition would not be taken between firms but between supply chains [8]. In most of the companies, basic entity of SCM is existent but it is not properly configured & integrated to produce needed results.

M. W. Ludema [5] provides an insight of tools to analyze the existing Supply chain framework, figure out the problems and propose alternative solutions to contribute to the development of supply chain management. A process based model, appropriate performance measures, teamwork evaluation are outlined, and some suggestions are given. After analyzing the existing SCM in a firm, there is a need to identify the core functions and strategies going to be adopted to drive the efforts towards achieving defined company objectives.

Stefan and Martin [15] put forward two distinctive strategies:

- (1) supplier management for risks and performance
- (2) supply chain management for sustainable products

The main goal is to devise some methodology or approach for planning of several components in supply chains such as suppliers, materials, resources, warehouses, activities and customers. There are many factors affecting the implementation of SCM and advantages and disadvantages attached with the subject.

Paper by Qi Yue [16] demonstrates the factors affecting supply chain management. It also analyzes the advantages and disadvantages of the corporate supply chain management and points out some suggestions to get competitive advantage with supply chain management.

Manufacturing basically require different type of raw materials to be assembled together and transform the whole assembly in the shape of the final product. In urge to increase the market share and make the product more sustainable in market, companies are expanding by giving birth to sister companies which in turn support the parent company needs. For example, in recent years car manufacturers have been gradually moving from the procurement of discrete parts to the procurement of modular systems [4]. Such companies are having administrative and some operational departments working as shared services performing tasks in all the business units but centrally controlled. Introducing supply chain and making it work more effectively in such environments have evolved to be a new challenge as less flexibility is encountered.

Flexibility has been considered as a major determinant of competitiveness in an increasingly intense competition in the marketplace. Quanxi and Yibing [17] gives a considerable comprehensive analysis of supply chain flexibility and identifies five elements of supply chain flexibility, which includes operation flexibility, logistics flexibility, information flexibility, robust network and re-configuration flexibility, market and supply flexibility [17].

Table 1 presents the assessing framework of supply chain flexibility

<b>Flexibility Type</b>	<b>Definition</b>
Operation Flexibility	The ability of operation, including the capabilities to change products, equipments, people and processes within the operations function
Logistics Flexibility	The ability of the integrated logistic system to describe and distribute the product economically
Information Flexibility	The ability to align information system architectures and systems with the changing information needs of the organization as it responds to changing customer demand
Robust network and re-configuration flexibility	The ability of align entities and the case of changing supply chain partners with minimal damage alteration
Market and supply flexibility	The ability to meet the changing needs of customers or downstream firms requires changing the supply of product

**Table1: Framework of Supply Chain Flexibility[17]**

The body of literature in this domain has sought to clarify the key concepts, pertaining to Supply Chain Management, and to identify the various factors influencing the success or failure of implementation process.

### 3. Problem Definition

It is imperative to study the problems in manufacturing industries of Saudi Arabia and the reason for implementation of SCM.

#### 3.1 Problem Statement

Implementation of Supply chain management in Saudi Arabia is the need of time to compete with the ever growing economy. Supply chain is lacking in most of the manufacturing industries which is a major hurdle in marching with the present tough economic conditions.

Over the years, manufacturing industries in Saudi Arabia have strived to learn the difficult art of satisfying a multiple customer's base, by designing an organization structure that draws synergy from networking of resources possessed in different strategic business units. The outcome is an ever-growing number of satisfied customers who entrust their confidence in finished products.

But recently, a need was felt to further bond the relation between the departments to add value to function and make the product more cost effective. There is a need to improve the existing SC in the factory by breaking the castles within the business unit and getting SCM inter linked through all the departments to ensure smooth flow of material and information and coordinate in a better way to perform as a team and cast a major impact on the overall performance. It is intended to develop a link from receiving of forecast to ordering & receiving material and further getting it transformed in finished goods shape and finally getting it transported/distributed to customers.

The basic flow of information and materials within the business unit could be summarized as follows:

Sales department studies market requirements and consolidates all acquired information in the form of the forecast for complete year and submits it to production planning department which distributes load in forecast to accommodate all assembly lines and put it in final shape. After carrying out the adjustments, forecast is submitted to materials planning & control department which takes forecast to check material status and raise material purchase requests, if needed, sourcing & purchasing department transforms these requests into orders and forward to suppliers. Traffic & logistics department gets hold of original shipping documents for clearance of containers and deals with customs & shipping lines for clearing materials on time and transporting it to factory. Raw materials warehouse physically receives materials and stack in warehouse till it is needed to be fed to assembly lines as per the production runs. Production department coordinates with all departments and transforms all sub assemblies and parts into finished goods. Finished goods warehouse stores the products and ultimately delivers to distributors/customers.

Manufacturing industries in Saudi Arabia are suffering right now from excessive and unwanted costs incurred

because of the absence or ill Supply chain available or functional. There is a need to align all the processes and make them perform unanimously towards a common objective. Currently a huge amount of money and resources are blocked in holding excessive inventories of Raw Materials because of uncertainties in Lead time, ordering time, customs and Transportation.

To establish a need for the implementation of SCM, refer to the following statistics collected by different surveys conducted by independent agencies worldwide.

### *3.2 Reasons To Implement SCM*

Survey was conducted in 2007 in USA by Cap Gemini, Industry Week and Ernest & Young, considering 2,100 executives out of that 49 percent of the respondent reported that their companies do not have a formal value chain strategy [13]. Out of those companies with formal value chain strategies, only 26 percent were feeling very good about it. This statistics shows that most companies have huge opportunities for improving their supply chain performance. Economic slowdown created a major stress for many supply chains. Companies were challenged to keep critical products and supplies moving, manage inventory levels effectively, maintain productivity, and keep emergency transportation costs in check. Despite the unexpected events and slowdown, many companies continue to initiate supply chain improvement initiatives [13].

According to a survey done by Fortune worldwide in 2007, 95 percent of 500 executives said their companies should be more focused on global supply chain management; however, only 45 percent have actual programs in place [16].

Traditionally, supply chains have been seen as operational structures that produced and distributed products to different market places geographically disperse around the globe. Organizations were mainly concerned with the satisfaction of their customers at a minimum cost. Companies are now realizing new business opportunities associated with a life cycle approach to their products. The need of seriously exploring the concept of global sustainable supply chains within a collaborative perspective is seen as a goal to improve companies' revenue growth and customer's recognition. Optimized structures and practices are being adopted while accounting concurrently with economical and sustainable issues [16].

Successful implementation of supply chain management has been credited with helping to cut costs, increase technological innovation, increase profitability and productivity, reduce risk, and improves organizational competitiveness.

The supply chain is a network of autonomous or semiautonomous business entities involved, through upstream and downstream links, in different business processes and activities that produce physical goods or services to customers.

## **4. Analysis Approach**

In order to achieve the goal, the existing manufacturing industries supply chain might be amended to address supply chain management problems and should include suggested methods and tools to use in the analysis process.

The tentative problem solving cycle can be derived by writing and narrowing down description of the current situation and conceptualize the problem situation indicating what could be done in problem situation. This way it determines the boundaries of the problem situation.

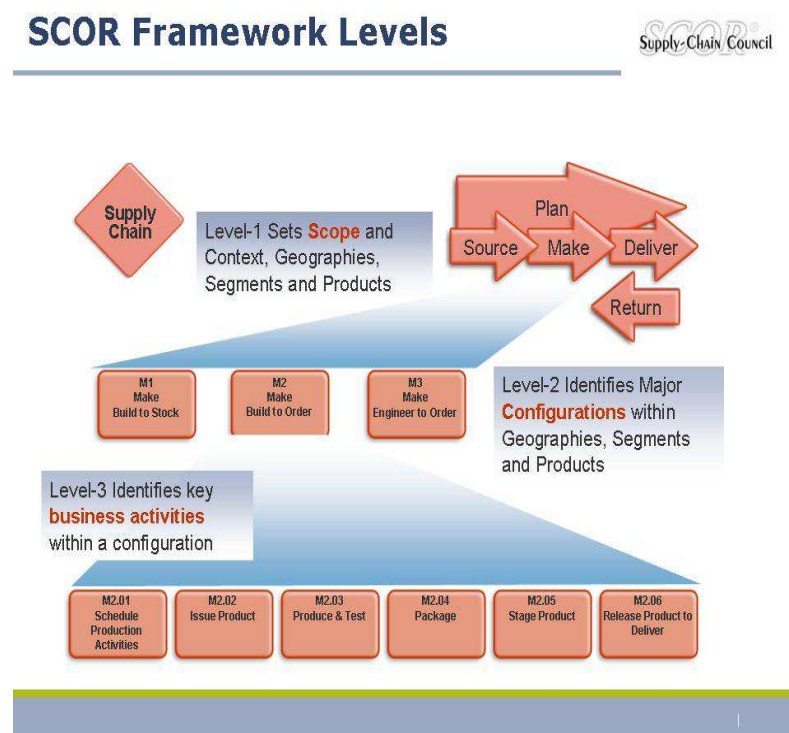
This practice would demand gathering up the relevant data and develop a detailed model of the scoped problem situation. Develop specific and detailed judgmental criteria followed by generating solutions and elaborating them. Comparison would be carried out between the alternatives suggested which would further solidify the grounds to implement the chosen alternatives. Evaluate the implemented solutions.

In a strive to analyze the existing condition of SCM, we would try to make good use of Supply Chain Operations Reference (SCOR) Model.

### *4.1 Supply Chain Operations Reference Model (SCOR)*

Supply Chain Operations Reference-model (SCOR) which is developed by Supply Chain Council is an important tool to analyze the existing supply chain processes. SCOR is mainly used as a mapping tool for analysis of operational supply chain processes. SCOR is developed by and for companies to gain inside understanding of supply chain position on a strategic, tactical and operation level and it helps to rationalize supply chain integration processes when used in joint projects by two or more supply chain actors. The SCOR

model focuses on five elementary business processes i.e. purchasing (source), production (make), distribution (deliver), reverse logistics (return) and planning (plan). The beauty of SCOR model is that it makes it possible to benchmark business and supply chain performances with the 'best practices' in the same branch or with other companies [14].



**Figure 2: SCM Model [18]**

Once the Supply Chain is developed and functional, there is a need to put in place performance measurement system to monitor the progress and output of the implementation. Performance measurement methods would also diagnose problems.

#### 4.2 Performance Management

As SCM professionals say “You cannot manage what you cannot measure”. Performance measurement can facilitate inter-understanding and integration among the supply chain members [5]. It also provides insight to reveal the effectiveness of strategies and to identify success and potential opportunities. It makes an indispensable contribution to decision making in SCM, particularly in re-designing business goals and strategies, and re-engineering process. The procedures should indicate the comprehensive performances of supply chains.

It is a challenging task beyond any individual to assess the comprehensive performance of the whole supply chain that is why a Performance Measurement Team (PMT) is suggested. The PMT is composed of the representatives from various management areas of supply chain members. Members of the PMT serve mainly as the evaluators, and provide a variety of opinions based on measurement activity [5].

#### 4. Conclusion

This paper has shown the author’s viewpoint on implications of SCM on manufacturing industries in Saudi Arabia. There is need to outline the supply chain practices followed by Saudi Arabian manufacturing industries giving due coverage to supply chain strategy and integration in Saudi Arabia. Supply chain strategy with business strategy should be implemented in Saudi Arabian industries in order to deliver highest customer satisfaction, streamline processes for supply chain integration to achieve operational excellence. There is also great need of creating partnerships to minimize inventory and maximize profits. This might help the Saudi industry to benchmark their supply chain practices with other developing countries.

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