

Analysing the Risk Issues in Supply Chain Management on Medium-Sized Industries

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ABSTRACT

In this paper we have a research work for analysing the supply chain management risk issues that occur in the industries. The application of AHP, FMEA etc. here can be used as a one of the possibilities that can be used to evaluate the mentioned circumstances. This paper represents various types of risk factors available that are required to be work upon in order to reduce the losses occur in Industries. The role of supply chain management and the concerned risk has been explained at various steps in this paper.

Keywords:- Supply Chain, Analytical Hierarchy Process, Supply Chain Risks, Supply Chain Risk Management

I. Introduction

A supply Chain or supply network is a coordinated system of organizations, people, activities and resources involved in moving a product or service in physical or virtual manner from supplier to customer. As, it is a process of planning, implementing and controlling the operations of the supply as efficiently as possible. Supply Chain Management considers all movement and storage of raw material and finished goods from point to point of consumption. As fierce competition in today's global markets, the introduction of products with shorter life cycles and the heightened expectations of customers have forced business enterprises to invest in, and focus attention on, their supply chains. This, together with continuing advances in communications and transportation technologies (e.g., mobile communication, Internet, and overnight delivery), has motivated the continuous evolution of the supply chain and of the techniques to manage it effectively. In a typical supply chain, raw materials are procured and items are produced at one or more factories, shipped to warehouses for intermediate storage, and then shipped to retailers or customers. Consequently, to reduce cost and improve service levels, effective supply chain strategies must take into account the interactions at the various levels in the supply chain. The supply chain, which is also referred to as the logistics network, consists of suppliers, manufacturing centers, warehouses, distribution centers, and retail outlets, as well as raw materials, work-in-process inventory and finished products that flow between the facilities. In this, we present and explain concepts, insights, practical tools, and decision support systems important for the effective management of the supply chain. But what exactly is supply chain management? We defined it as follows: Supply chain management is a set of approaches utilized to efficiently integrate suppliers, manufacturers, warehouses, and stores, so that merchandise is produced and distributed at the right

quantities, to the right locations, and at the right time, in order to minimize system wide costs while satisfying service level requirements.

II. Supply Chain Decisions

There are four major decision areas in supply chain management:

- 1) Location,
- 2) Production,
- 3) Inventory,
- 4) Transportation (distribution)

III. Risk definition

According to P.Radhakrishanan, supply chain can be described as a beneficial coordination with distinct objectives to achieve a common goal. As it can be regarded as set of procedures which is used to proficiently combines supplier, manufacturers, warehouses and stores to ensure proper production and distribution of the right quantity to the right location in a right time in order to reduces the total supply chain cost besides satisfying service level requirements.

A search of the risk management literature reveals many discussions about risk but few clear and concise definitions. Markowitz (1952) the concepts "yield" and "risk" appears frequently in financial writings. Usually if the term "risk" were replaced by "variance of return," little change in apparent meaning would result Rowe (1980) Risk is the potential for unwanted negative with the possibility of loss Chiles and Mackin (1996) Risk refers to the possibility of loss.

Mitchell consequences to arise from an event or activity March and Shapira (1987) Risk refers to the negative variation in business outcome variables such as revenues, costs, profits, etc. Lowrance (1980) Risk is a measure of the probability and severity of adverse effects Miller (1991) Risk refers to the variance in outcomes or performance that cannot be forecasted ex-ante Yates and Stone (1992) Risk is an inherently

subjective construct that deals (1999) Risk is defined as a subjectively determined expectation of loss; the greater The importance of these conditions to classifying a situation as risky is best illustrated by way of an example. Suppose one were to jump from an aircraft at high altitude without a parachute; in this case, there is no risk as the person is certain to die. The condition of risk then, occurs only when there is exposure and uncertainty (Holton, 2004). We therefore adopt the definition of risk as: exposure to a premise, the outcome of which is uncertain.

Christopher (2002) suggests that SCRM is the management of external risks through a coordinated approach among the supply chain members to reduce supply chain vulnerability as a whole. Tang (2006, p. 453) define SCRM as “the management of supply chain risks through coordination or collaboration among the supply chain partners so as to ensure profitability and continuity” presents some of the key definitions of SCRM provided in the literature.

IV. Difficulties in Supply Chain

Although we will discuss a variety of reasons throughout this text, they can all be related to some or all of the following observations:

1. Supply chain strategies cannot be determined in isolation. They are directly affected by another chain that most organizations have, the development chain that includes the set of activities associated with new product introduction. At the same time, supply chain

strategies also should be aligned with the specific goals of the organization, such as maximizing market share or increasing profit.

2. It is challenging to design and operate a supply chain so that total system wide costs are minimized, and system wide service levels are maintained. Indeed, it is frequently difficult to operate a single facility so that costs are minimized and service level is maintained.

3. Distribution Network Configuration: - Through this it must confirm the number and location of suppliers along with several others production facilities required, distribution network and customers.

4. Information: - It requires various integrated systems and process through the supply chain to share valuable information, including demand signals, forecasts, inventory and transportation.

5. Inventory Management: - The total number of quantity and location of inventory include raw materials, work in process and finished goods.

6. Cash Flow: - To arrange the payment terms and the methodologies for exchanging funds across entities within the supply chain.

V. Industrial Risks In Supply Chain

Risk	Modes	Causes
Invalid supply	Delayed Supply	Characteristics of customer supplier interaction
	No Supply	Inappropriate technology usage by supplier Mishaps during transportation
	Non confirming quality of supply	Supplier unit shut down Poor planning or execution of quality management
Financial Risk	Loss of revenue	Arises through change in taxation Potential loss through changes in market
Asset impairment risk	Reduced utilization of products	Product obsolete due to new launch
	Reduced utilization of capital equipment	Shutting down of unit Availability of superior technology
Regulatory risks	Unsettled operation	Change in political environment
	Halted operation	Various regulation such as

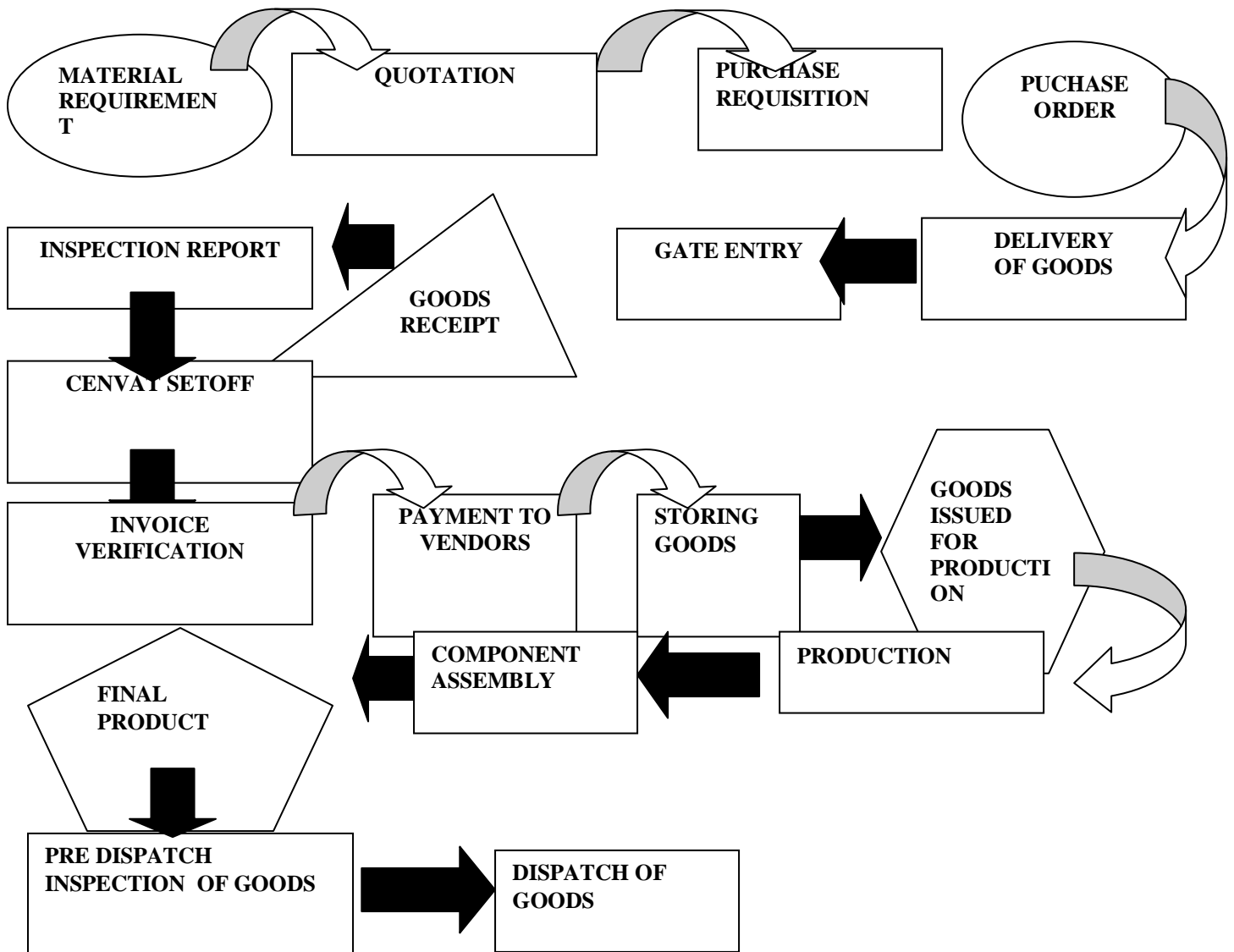
		environmental
New revenue risk	Loss of logistics of investment	Insufficient in market Competitive action
Information risk	Improper logistics Unfilled customer orders	Lack of source of information Misunderstanding
Invalid production	Over producing Under producing	Inaccurate estimates Low productivity
Weakness in resources	Lack of resources Insecure supplies	Low market reputation Insufficient investment and transport
Supply chain performance	Below par performance	Inappropriate performance Poor coordination
Human resource deficiency	Low efficiency Job turnover Labour issues	Low motivation Inadequate learning Low employee remuneration
Calamity	Natural Accidental	Tsunami, flood Fires
Invalid customer deliveries	Poor quality output Transport delay	Poor planning or execution Insufficient transportation units
Competitive risk	Inability to compare	Weak resources
Product stagnation in market	Product antiquated	Competitive action New launch of product in market
Complexity of product	Substandard handling Poor quality	Product design Production requirements

VI. Consequences of failure in SCM:-

The overall failure in Supply Chain activities may result in:-
 It decreases the market share
 Leads to inflated costs of the product
 Finally damages business reputation, customer confidence and customer interest.

Cycle of Supply Chain:

A model framework for supply chain role in medium sized industries and evaluation has been proposed in this section, considering the material as the backbone for the supplier side and customer requirement as the backbone for the distribution side. The following figure shows the complete cycle for the role of supply chain in medium sized industries:-



VII. Conclusion

In reality, most top management might need an index to compare different scenarios. In addition, in order to evaluate the results of in industries Supply chain Management starting from material requirement, performance measure at supply chain is in need at all level.

The overall conclusion of the above has been done as follows:-

First, supply chain management takes into consideration every facility that has an impact on cost and plays a role in making the product conform to customer requirements: from supplier and manufacturing facilities through warehouses and distribution centers to retailers and stores. Indeed, in some supply chain analysis, it is necessary to account for the suppliers' suppliers and the customers' customers because they have an impact on supply chain performance.

Second, the objective of supply chain management is to be efficient and cost-effective across the entire system; total system wide costs, from transportation and distribution to inventories of raw materials, rk in process and finished good

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