

# BENCHMARKING of Internal Supply Chain Performance

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## Abstract

*Purpose* – In global scenario, many organizations own supply chains, which operate in different countries. The performance of these supply chains, owned by the same organization must be same if they operate in countries with similar economical, political, and social conditions. In this paper, an effort has been made to propose a methodology for the internal financial benchmarking to reduce the variability in performance among supply chains of same focal firm. The proposed methodology of internal benchmarking for assessment of supply chain performance is demonstrated through three companies from the Paint Industry.

*Design/methodology/approach* – Three listed (Public limited) firms from the industry were selected for the benchmarking study. Here it is Asian Paints (India) Ltd, Berger Paints and Jenson & Nicholson Ltd. The relevant financial data for the last five financial years (2005-2009) for the above companies were collected. The electronic database Capital Line and Business Beacon were used to collect data. Data is analyzed by applying statistical test ANOVA: Two way classification.

*Findings* – An extensive use of ANOVA is used for good diagnosis of supply chains.

*Originality/value* – According to the authors' knowledge, there is no paper in the literature, which discusses analysis for internal benchmarking in supply chain management and it is believed that it will be useful for supply chain managers to apply such tools to lead global development in their supply chains.

## INTRODUCTION

In today's environment, there is the added pressure to be more socially and environmentally responsible and there are risks which need to be mitigated and managed. Then, there is the complexity created by ever increasing customer requirements and expectations, globalization, the pressure on cost, and the availability and access to resources. On top of this, management is expected to improve profitability, increase revenue growth and capture and protect larger market share. In order to succeed, management must recognize that the ultimate success of an organization depends on the ability to

integrate the company's network of business relationships in a mutually beneficial way. The management of this network of relationships is supply chain management. Successful supply chain management requires cross-functional integration within the firm and across the network of firms that comprise the supply chain. It is focused on the improvements in performance that result from better management of key relationships.

Thus, there has been an increased awareness in recent years regarding the role and potential of supply chain management in supporting corporate goals. Management theorists as well as practitioners have addressed the problem of how to improve supply chain processes. This article is



confined to a discussion of the internal supply chain, defined as the flow of materials from the procurement of raw materials to the delivery of finished goods to the customers of an organization (Krajewski 1990).

For an improvement to take place, it is essential that a firm use performance measures appropriate to its business. Subsequently, it may carry out a benchmarking exercise to identify "best-performance" firms and its own relative position. At the next level, the firm may probe further to identify avenues for improvement.

#### **LITERATURE REVIEW**

Performance measurement is an essential and powerful management tool, but its power rests on the ability to identify those measures that drive supply chain success. Benchmarking is one way of assessing performance based on these measures (Bogan and English 1994). Smeltzer and Carr (1999) tested the relationships among benchmarking, strategic purchasing, and firms' performance and found that benchmarking is positively related to firms' performance and strategic purchasing. According to this study, firms do obtain valuable comparison information and have the opportunity to learn if they use the benchmarking information. This study also emphasizes that future research should help to identify specific practices that enable better performance.

A firm can compare its own performance with that of its competitors and the industry aggregate in order to ascertain where it stands in terms of supply chain performance. Using benchmarking data, a firm can also map a supply chain profile that allows it to effectively capture both the dimensions of time and cost in one diagram. Further, a firm can also compare its own profile with that of its competitors in order to ascertain where it stands in terms of costs and

length of time in the chain. Benchmarking is a useful tool for comparing the performance of competing firms so as to identify areas of improvement for further detailed investigation, which may lead to process improvements.

The literature has emphasized the importance of cooperative relationships with suppliers and distributors. One such study examined the development of suppliers using a process-oriented approach (Hartley and Jones 1997). Another study in this area investigated the linkage of sourcing strategies with specific business units (Narasimhan and Carter 1998). These studies have suggested that the firms need to objectively determine avenues for improvement in the transaction processes with their suppliers and distributors.

In a business setting, most transactions are carried out on credit. In a competitive economy, firms have to allow credit to attract sufficient business. This, in turn, forces them to delay their payments in order to finance their operations. Consider the case when the products are sold on credit. This depletes inventories and increases accounts receivable. To replenish the inventories, the firm commences production, for which it buys raw materials. If the raw materials are bought on credit, accounts payable increase. Under these circumstances, the working capital components affect the procurement, production, and collection activities and are, in turn, affected by them (Mehta 1974). For the purpose of analysis, the interaction of accounts receivable, inventories, and accounts payable should be considered simultaneously.

Large firms need to consider that their suppliers and distributors incur different costs of capital. Normally, small firms incur high costs of capital. Long credit periods for them are very costly and these costs are ultimately passed on to the customers,

Therefore, it is mutually beneficial for the suppliers, producers, and distributors to ensure better integration and increase cost efficiency (Jensen and Meckling 1976). For instance, a firm that delays paying invoices for an extended period of time receives an interest-free loan from the supplier. In such cases, quicker payments must be negotiated (Lewellen and Johnson 1972; Smolen 1997).

Shah 2009: 35-37 identified the three performance measures: Total length of the chain, Supply chain inefficiency ratio and Supply chain working capital productivity.

This article develops performance measures that can be computed through publicly available information and demonstrates how benchmarking these measures may be useful to a firm. The performance measures are based on the material flow and proportionate cost addition at various stages within the internal supply chain.

This article presents a framework for financial benchmarking using these performance measures and demonstrates how meaningful results may be derived from this exercise. The results of using performance measures in the paint industry are presented. Three companies are chosen for the study.

### **OBJECTIVES OF THE STUDY**

The objective of the study is to carry out a supply chain benchmarking study for a selected industry. Here it is a Paint Industry. Thus in this study the objectives are:

- To know the total length of the chain.
- To find out the supply chain inefficiency ratio.
- To calculate the supply chain working capital productivity.

### **HYPOTHESES**

Based on the review of available literature, the following hypotheses have been framed for

the purpose of the study:

- H01- there is no significant difference between the total length of the chain in three companies.
- H02- there is no significant difference between the five years in terms of length of the chain.
- H03- there is no significant difference between the supply chain inefficiency ratio in three companies.
- H04- there is no significant difference between the five years in terms of supply chain inefficiency ratio.
- H05- there is no significant difference between the supply chain working capital productivity in three companies.
- H06- there is no significant difference between the five years in terms of supply chain working capital productivity.

### **SCOPE AND LIMITATIONS OF THE STUDY**

The study is completely done on the three paint companies for the years ranging between 2005-2009. An in-depth data was collected.

Since only information available in the public domain is used in these measures, some internal cost data, such as ordering costs, are not included. This is a limitation of the study. Also only three companies were chosen from the Paint Industry and the data was only of the last five years.

### **METHODOLOGY AND DATA**

Here three listed (Public limited) firms from the industry were selected for the benchmarking study. Here it is Asian Paints (India) Ltd, Berger Paints and Jenson & Nicholson Ltd. The relevant financial data for the last five financial years (2005-2009) for the above companies were collected. The electronic database Capital Line and Business Beacon were used to collect data.

