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## INSIGHTS ON SUPPLY CHAIN NEEDS AND ISSUES IN INDIAN SMES.

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### ABSTRACT

Since last two decades, academicians and practitioners have paid a massive effort in supply chain management (SCM) due to its proven results like improved quality, cost reduction and overall supply chain efficiency to gain competitive advantage. Large enterprises have already tested rippling effects of SCM, but small and medium size enterprises (SMEs) have underestimate the benefits of SCM due to their insufficient knowledge about SCM. Literature reveals that Indian SMEs could not contribute in the GDP to the extent they could. Therefore, there is a great potential to develop Indian SMEs through effective execution of SCM strategies. The purpose of this paper is to uncover the SCM issues of small and medium size enterprises and to provide insights on how SCM strategies will help in growth of SMEs. This enables SMEs to identify and overcome the possible risk factors in implementing effective and responsive supply chain strategies for improving their performance in terms of cost, quality and service to customer.

**KEYWORDS:** Small and medium size Enterprises (SMEs), Large Enterprises (LEs), Supply chain management (SCM) and Supply chain efficiency.

### 1. INTRODUCTION

In today's highly competitive market, supply chain management has become important function for survival of small and medium size enterprises, as SMEs are involved in number of value creating activities like supplying raw materials, manufacturing components or sub-assemblies for their large counterparts and distributing finished goods to customers. Therefore it is clear that performance of SMEs ensures the performance of whole supply chain.

It is very difficult for SMEs to grow in global marketplace due to demands of customers to have better and cheaper products, more product varieties and faster delivery along with some operational parameters like fluctuating demand cycles, project specific demands, and lack of collaboration, poor transportation and distribution networks. These challenges stress the importance of managing supply chain and determining effectiveness from SMEs perspective.

### 2. LITARATURE REVIEW

Supply chain is the movement of materials and information from their source to the end customer. It includes purchasing,

manufacturing, warehousing, transportation and customer service. In other words supply chain is an integrated process where in raw material is transformed into final product and delivered to customers [1][2][3]. Successful supply chain management requires the integration of above mentioned supply chain entities to create cooperative and collaborative environments that facilitate information exchanges, materials and cash flows [4]. The long-term sustainability of SMEs totally depends on "where they compete", "how they compete" and "Where they stand in supply chain". Therefore, to gain competitive advantage, SCM is the only effective tool to achieve it [5].

#### 2.1. Definition of SMEs in India.

Generally there is no worldwide accepted definition of SMEs. Definition of SMEs varies from country to country. SMEs are defined in terms of location, size, structure, organization, number of employees, sales volume, worth of assets, ownership through innovation and technology. In most of the countries, SMEs are classified in terms of number of employees; but in India, SMEs are defined in terms of investment in plant and machinery (Ministry of Small and Medium Enterprises, India) as shown in table 1.

Table 1- Definition of MSMEs

Type of Enterprise	Investment in Plant and Machinery	
	Manufacturing Industry	Service Industry
Micro	Up to 25 Lakhs	Up to 10 Lakhs
Small	25 Lakhs to 5 Crores	10 Lakhs to 2 Crores
Medium	5 Crores to 10 Crores	2 Crores to 5 Crores

According to ministry of MSMEs, 95% of total numbers of enterprises in India belong to MSMEs which is the second largest employer after agriculture and employs an estimated 60 million people.

## 2.2. Characteristics of SMEs.

Small and medium enterprise is small in size but not in importance. SMEs consist of different type of units such as village industries, tiny sector units, export units and other SMEs. In modern business environment, SMEs face an increasing pressure of customized product demands, quality improvement and responsiveness. In addition, increasing competitive imperatives of cost efficiency and customer satisfaction have pushed enterprises to improve their performance in all supply chain dimensions [6]. To have better understanding on supply chain issues related to SMEs, an initial understanding on key characteristics of SMEs becomes essential.

Individuals are responsible for various roles and more responsibilities with little backup [7]. Small firms are being operated by means of labour intensive traditional methods of production [8]. Flat organizational structure and informal relationships among employees facilitate communication and provide higher flexibility [9]. SMEs lack in managerial competencies, technical supremacy and infrastructure facilities [10]. SMEs face problems in coordinating their supply chain due to lack of resources and improper direction [11]. SMEs differ from large scale enterprises in terms of structure, strategy and decision making process [12].

## 2.3. Challenges of SMEs.

In India there are approximately 1.564 million registered MSMEs. Among these units 1.049 million (67.10 %) are involved in manufacturing, 0.262 million (16.78%) in services and 0.252 (16.13%) in repairing and maintenance. SME sector has consistently registered a higher growth rate compared to other industrial sectors. SMEs are providing employment, contributing to GDP as they possess annual growth rate of 19% [13]. Despite these facts, SMEs are not able to contribute in economical growth of country up to an extent, which they are capable of. There are numerous obstacles that hindered the entrepreneurial activities in India. Without a strong SME sector, India cannot have high growth prospects [14]. In countries like China, Japan and Korea, contribution of SMEs to GDP is 60%, 56.8%, and 46% respectively, which is much higher than contribution of SMEs in India. [13].

More than 50% of SMEs turn sick or collapse within first five years of operation. In Malaysia failure rate is approximately of 60%. It reflects that SMEs are facing serious issues and plenty of obstacles to stand as a competitive enterprise [15].

SMEs are facing common challenges in a globalized environment which include low productivity, lack of managerial capabilities, shortage of finance, uncertainty, scarcity of resources such as raw material and labour, unavailability of modern and affordable technology, heavy regulatory burden, recession, absence of exclusive marketing platforms and supply chain networks [16] [17] [18] [19] [20] [21]. In addition to that SMEs are the lacking of marketing assistance, brand value, customer loyalty, tie-ups and strategic collaboration with competent suppliers and local firms [22] [23].

Indian SMEs manufacture products at low costs with better quality but lag behind in delivery times, which are not acceptable by their customers and they fail to remain competitive in their own product segment. These issues have implications of the SCM in SMEs and their relation with large enterprises. Many a times SMEs need to sell their products at low cost to the firms having brand value in a market because of the low marketing skills and lack of funds [1]

Irrespective of country and region, SMEs face common issues in respect of their survival or to get competitive advantage. SMEs cannot expand until they successfully innovate and improve their operations in all aspects such as managing inventories, reducing lead times, coordinating with raw material suppliers and improving shop floor practices. Therefore, a key issue with SMEs is to examine and control performance across the supply chain networks through effective execution of SCM strategies [24].

## 2.4. Importance of SCM to SMEs.

The main focus of SCM is to provide right product to the right customer at the right cost, at right time, with right quality and quantity [25]. The short-term strategic goal of SCM is to reduce cycle time and inventory, whereas the long-term goal is to improve overall supply chain efficiency to increase supply chain surplus and customer satisfaction [26]. SCM practices are defined as the set of activities to promote effective functioning of its supply chain and are acknowledged as one of the most important areas for competitiveness and growth of the industries. SCM includes a set of approaches to integrate suppliers, manufacturers, transporters and customers themselves for improving the long-term performance of the individual firms and Supply chain as a whole in a cohesive and high-performing business model [1].

Implementation of SCM will lead to benefits like reduction in costs, customer satisfaction, supply chain surplus and competitiveness along with streamlining of operations. Supply chain management can be more effective by introducing the concept of coordination and collaboration with competent suppliers and customers [27].

SCM delivers improvement in quality, cost reduction and service to customer which ranges between 10 per cent and 60 per cent. Order fulfilment cycle time records the highest improvement from 30 per cent to 60 percent. In the context of SMEs, due to shortage of capital investment, cost effective SCM is critical for its survival and growth as purchasing cost makes up the largest share in sales revenue approximately 80 per cent [28].

In another study involving SMEs manufacturing companies [28], it was observed that the execution of SCM practices could deliver benefits to SMEs in terms of lower supply chain costs, higher productivity, inventory reduction, forecast accuracy, responsiveness, reduction in product development time, reduction in duplication of processes, increased flexibility, and accurate resource planning.

An integrated supply chain has a clear advantage on the

competitiveness of the individual firms due to which chain-chain competition has started to take over the enterprise-enterprise competition, although many industry-industry competitions do exist particularly in underdeveloped countries [29][30].

Small firms can improve their performance through tie-ups with local companies or selling their products under common brand name with the help of collective and aggressive marketing and intensive promotional efforts [31].

In addition to above practices, training and education helps to reduce the risk of service failure and positively influence quality and responsiveness. Feedbacks, rewards and employee participation motivate desired performance and employee satisfaction [32].

Six Sigma metrics help to measure and improve the performance of supply chain [33]. Quality management based on Six Sigma methodology can be employed in SCM to improve the performance in various aspects of whole supply chain network [34].

Large scale Indian organizations follow four major supply chain strategies. i.e. supply chain strategies, supply chain integration, inventory management, and information technology which can help SMEs also to accomplish highest customer satisfaction, streamline processes for supply chain integration to achieve operational excellence, form partnerships to minimize inventory and to maximize supply chain profit [35].

Supply chain network structure consist of linkages between supply chain members, long-term relationships, effective communication, cross-functional teams, and early supplier involvement in new product development, planning processes, and logistics integration and ERP implementation will quantify benefits like improvement in operational efficiency and cost saving [36].

### 3. RESEARCH METHODOLOGY.

The present study adopted a descriptive design, which ensured ease in understanding the needs and issues that influence supply chain function of SMEs. Descriptive survey design is flexible enough to provide opportunity for considering different aspects of a problem under study (Kothari, 2004). The selection of qualitative case study research is based on the reasons such as:

- Many researchers have focused on the supply chain practices of large firms,
- SMEs in India have insufficient knowledge of SCM and they underestimate the benefits of SCM;
- The issues need to be explored in its most natural and social context to learn about possible unforeseen variables influencing the phenomenon.

A case study approach is adopted to collect qualitative data: characteristics of the organization, needs of SMEs, issues related to various business functions, perception and vision of management. An attempt was made to capture the notion of SCM from departments like manufacturing, production planning, marketing, and purchasing. This exploratory study

summarizes characteristics of SMEs, supply chain issues in SMEs and importance of SCM to SMEs by using insights gained from a case study conducted on a small scale valve manufacturing company based in Pune.

#### 3.1. Description of case unit: Indi-Tech Valves Pvt. Ltd, Pune.

Indi-Tech Valves Pvt. Ltd., is among the leading control valve manufacturers in India with over 30 years of experience. This organization provides customized valve solutions used for steam applications and other severe service applications (high pressure & temperature). The company has developed and supplied many specialty valves operating under severe conditions to meet the exact process requirements. Indi-Tech valves Pvt. Ltd., provides total engineering consultancy, training and control valves for steam and water piping.

#### 3.2 Characteristics of the case organization

In modern business environment, the organization is facing an increasing pressure of customized product demands, quality improvement, faster delivery and responsiveness. To have better understanding on supply chain issues related to SMEs, an initial understanding on key characteristics of SMEs becomes essential.

Key characteristics of this organization

- Simple organizational structure, informal relationships among employees, facilitated communication,
- Labour intensive traditional methods of production and inspection,
- Individuals responsible for various roles and more responsibilities with little backup,
- Face problems in coordinating their supply chain due to lack of resources ,
- Higher inventory levels at each stage of production,
- Poor transportation and distribution networks.

#### 3.3. Challenges faced by the organization

Current organization is a typical example of small scale industry experiencing varying type of customer's and supplier's expectations at the upstream and downstream side of supply chain. The failure to meeting delivery dates with competitive prices, poor distribution networks and higher inventory levels are big concerns that company is facing.

Some more issues leading to supply chain complexity in current organization include:

- To cater the excess production loads, company offers extended working hours to existing workforce to reduce fixed cost;
- Maintain higher inventory levels than monthly requirement to take care of fluctuating demands;
- Seasonal demand peaks and poor communication within organization and with other organizations lead to forecasting inaccuracy (10-15% deviations);

- Low supply volume and customized product demands do not allow the organization to expand supplier base in geographical proximity;
- Poor communication specifically, between marketing and production planning;
- Meeting quality standards in overseas projects is a main obstacle;
- Poor transportation and distribution networks disturb the delivery schedules;
- Proximity supplier base is identified for the purchase of standard items but relationships and contract conditions vary depending upon their value of purchase;
- Lack of collaborations with raw material suppliers and other organizations which further results in lack of information and technology sharing.

These barriers and constraints impede or slow down the implementation of SCM in the organization. To face above mentioned challenges and to avail benefits of globalization, SMEs must have effective supply chain strategies to make a proper balance among all supply chain members.

### 3.4. Networks being used by the organization

The current study also uncovers issues related to distribution networks being used by SMEs. This organization produces customized discrete parts and equipments which consist of many standard and non-standard parts in small quantity. Therefore purchase manager checks the availability of such parts with nearby suppliers and places order to purchase from them. Due to shortage of resources, this organization outsources the casting parts. In this situation, supplier ships casting parts directly to the manufacturing plant.

The organization often selects different distribution networks like direct shipping, direct shipping in-transit merge, retail storage with consumer pickup to achieve variety of supply chain objectives ranging from low cost to high responsiveness.

## 4. DISCUSSION

In a nutshell, supply chain issues and constraints critical in case of Indi-Tech Valves Pvt. Ltd include:

Parameters	Problems and constraints
Raw material and standard parts for assembly	<ul style="list-style-type: none"> <li>• Shortage of raw materials;</li> <li>• Procurement of standard parts at a higher cost due to proximity supplier base.</li> </ul>
Labour	<ul style="list-style-type: none"> <li>• Difficult to get skilled manpower at affordable cost ;</li> <li>• Even harder to retain them;</li> <li>• Improper training and poor employee management;</li> <li>• Extra working hours results in poor quality.</li> </ul>
R&D, Manufacturing	<ul style="list-style-type: none"> <li>• Low production capacity;</li> <li>• Traditional methods of production;</li> <li>• R&amp;D shortage.</li> </ul>
Technology	<ul style="list-style-type: none"> <li>• Limited communication networks</li> <li>• Shortage of latest tools and techniques for production</li> </ul>
Distribution network and transportation	<ul style="list-style-type: none"> <li>• Improper distribution networks;</li> <li>• Poor delivery schedules;</li> <li>• Higher inventory levels.</li> </ul>
Others	<ul style="list-style-type: none"> <li>• Uncertainty;</li> <li>• Seasonal demands.</li> </ul>

The facts revealed through the analysis will enable Indian SMEs to identify the potential areas of improvement. Though the severity of issues varies depending on their variety of products, internal culture, supplier base and customer expectations, an identification of critical issues may help practitioners to evaluate their problems in greater detail.

## 5. CONCLUSION.

Extensive literature survey reveals that as far as India is concern, there is very less and immature literature available regarding effective supply chain strategies to improve the

performance of SMEs in all dimensions. Presented case study conclude that major problems are related with

- scarcity of resources like raw material and technical manpower,
- lack of modern technology and use of IT tools,
- shortage of capital for investment,
- lack of trust among supply chain partners, uncertainty,
- new product development capability,
- lack of training and marketing platforms and



- lack of brand value

Which results in

- quality issues,
- missing delivery dates,
- higher inventory and finally loss of opportunities.

SMEs are not following any holistic approach for developing their strategies and quantifying their competitiveness. Therefore SMEs need to improve performance standards in many dimensions such as quality, cost, productivity, new product development time, and smooth flowing operations. To sustain in complex business environment, SMEs need to develop themselves strategically in order to remain competitive, grow, and prosper. Moreover, they must not only focus on new product development, innovations and market strategies, but also implementing strategies like value chain integration and cooperation with key business partners and competitors.

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