

Global Competitiveness: Role of Supply chain Management

Dr. Seetha Naik

Faculty, Department of Business Administration, University of Mysore, Mysore, INDIA

ABSTRACT

Business today is in a global environment. This environment forces companies, regardless of location or primary market base, to consider the rest of the world in their competitive strategy analysis. A number of factors have led to the increasing globalization of the world economy and as a result the competitive environment faced by the corporate has changed dramatically since the last decade. This paper focuses on competitiveness and supply chain strategies, forces, global supply chain network, lean supply chain, risks in global competitiveness.

Keywords- supply chain, strategies, lean and risk

I. INTRODUCTION

Firms cannot isolate themselves from or ignore external factors such as economic trends, competitive situations or technology innovation in other countries, if some of their competitors are competing or are located in those countries. Companies are going truly global with Supply-chain Management (SCM). A company can develop a product in the United States, manufacture in India and sell in Europe. Companies have changed the ways in which they manage their operations and logistics activities. Changes in trade, the spread and modernization of transport infrastructures and the intensification of competition have elevated the importance of flow management to new levels.

II. SCM & OUTSOURCING

Liberalization, Privatization and Globalization (LPG) of the economies and companies has fuelled the competitiveness among corporate.. The drivers of globalization include: decreasing tariffs, improved transportation, communications and information technology, global manufacturing of products and availability of services across markets. These changes have enabled the global competitors to make the products and services available to customers worldwide, and the results have been a proliferation of choices for consumers and a need for the companies to offer greater products and service quality at lower costs in order to remain competitive. These pressures have led to an

increased emphasis on reengineering internal business processes and working more collaboratively with the customers and suppliers to better integrate planning and operations throughout the supply chain as a means to reduce costs and improve services. Changes in technology and globalization of products and services have also resulted in increasingly dynamic markets and greater uncertainty in customer demand. Consumers have greater access to more goods and services, and the introduction of new products is occurring at a faster pace. Thus a company's competitive position depends upon its ability to understand changes in customer demands and respond appropriately with good~ and services that will meet those demands. SCM tools and techniques are mechanisms that can allow the companies to respond to these environmental changes.

Hence the reason as to why supply chain management has become popular during the past decade is the phenomenon of globalization. Increased competition has made business look for core competencies for enhanced performance. If a particular organization in some country has the core competence for a certain product/component/service, it will get the business for that product/service. This is called global outsourcing.

III. SUPPLY CHAIN DYNAMICS

A supply chain is defined as a set of three or more companies directly linked by one or more of the upstream and downstream flows of the products, services, finances and information from a source to a customer. It consists of all the stages involved, directly or indirectly, in fulfilling a customer's demand. It not only includes the manufacturer and suppliers, but also transporters, warehouses, retailers and customers themselves. Within an organization, the supply chain includes all the functions involved in fulfilling a customer demand. These functions include, but are not limited to, new product development, marketing, operations, distribution, finance and customer Service.

IV. COMPETITIVENESS AND SUPPLY-CHAIN STRATEGIES

A company's competitive strategy defines the set of customer demands that it seeks to satisfy through its products and services. A supply-chain strategy determines the nature of procurement of raw materials, transportation of materials to and from the company, manufacture of the product or operation to provide the service and distribution of the product to the customer, along with any follow-up service.

The ultimate objective of SCM is to achieve a 'strategic fit' between the company's competitive strategy and supply-chain strategy. This strategic fit can be achieved by Understanding the customer demand, which helps the company to define costs and service requirements and understanding the supply chain that helps the company to design and manage its supply chain in accordance with the customer's demand. If any mismatch exists between what the supply chain is capable of doing with respect to customer demands, the company can either alter the structure of the supply-chain design or alter its strategies.

During the industrial age, companies succeeded by how well they could capture the benefit from economies of scale and scope & technology. The success accrued to companies that could embed the new technology into physical asset that offered ancient customer service. The emergence of the retailing era, which started in the last decades of twentieth century, made obsolete many of the fundamental assumption of industrial age. The retailing age environment requires new capabilities in organization for competitive success. The ability of a company to mobilize and exploit physical, tangible assets enable an organization to develop customer relations and loyalty, introduce innovative products and services, produce customized high-quality products and series at low-cost and with short lead time, mobilize employee skills and motivation for continuous process improvement and deploy information technology effectively as more and more homogenous products are available across markets that are becoming more homogenous, the imperative is to reach the market at the right time and place at lowest total cost. New technologies and the ever-increasing intensity or competition are forcing organization to reexamine how they do business, meet new customer-driven challenge, companies are re-investing their supply chains in order to succeed. Consider a series of companies in a supply chain, each of who orders from its immediate upstream member. In this setting, inbound orders from a downstream member serve as a valuable informational input to upstream. In the Last with the globalization of the world economy, the diversity and environmental factors that influence a company's global strategies and approach, supply-chain drivers influencing the companies to become increasingly global. Different approaches to globalization require different degrees of supply-chain integration, as well as different supply-chain strategies and structures. Whatever approaches to globalization and global supply-chain management are adopted, companies face the challenges of understanding

and managing the greater complexity and risks inherent in the global environment.

In the early days, the supply chain management was referred to the functions of logistics, transportation, purchasing and supplies. However, the evolution of the supply chain management has moved to focus on integration, visibility, cycle time reduction and streamlined channels. The new integration has a variety of activities that include:

- Integrated Purchasing Strategy
- Supplier Integration
- Supply Base Management
- Supply Chain Management

Logistics activities exist since the early 1900s. These activities were first associated with the military as a branch of war that pertains to the movement and the supply for armies. Military forces always used to make use of logistics models to ensure the availability of the required material at the right place and on right time. Logistics is being used by the military even today. After 1950, supply chain management got a boost with the production and manufacturing sector getting highest attention. The inventory became the responsibility of the marketing, accounting and production areas. Order processing was part of accounting and sales. Supply chain management became one of the most powerful engines of business transformation. It is the one area where operational efficiency can be gained. It reduces organizations costs and enhances customer service. The evolution led to an Internet-based application for Supply Chain Management.

Business today is in a global environment. This environment forces companies, regardless of location or primary market base, to consider the rest of the world in their competitive strategy analysis. Firms cannot isolate themselves from or ignore external factors such as economic trends, competitive situations or technology innovation in other countries, if some of their competitors are competing or are located in those countries. Companies are going truly global with Supply-chain Management (SCM). A company can develop a product in the

United States, manufacture in India and sell in Europe. Companies have changed the ways in which they manage their operations and logistics activities. Changes in trade, the spread and modernization of transport infrastructures and the intensification of competition have elevated the importance of flow management to new levels.

V. RESEARCH METHODOLOGY

The research Methodology is based on secondary data, which include compilation of research article of the experts in the field and reflection of the various books on supply chain management. The approach of the research is exploratory in nature. The research undertaken by researcher adequately substantiates the claim made in this paper to capture the emerging issues in the field.

VI. FORCES OF GLOBALIZATION COMPETITIVENESS

The last two decades have seen the evolution of the global manufacturing environment. Majority of the manufacturers have global presence through exports, strategic alliances, joint ventures or as a part of a committed strategy to sell and produce in foreign markets.

The Four Driving Forces of the Globalization Process. (Adapted from global operators and logistics Philippe-Puire Dernier, Recordo Ernst, Michel Fender, Panos Kouvelies). The factors shaping the global environment and driving the development of global operations strategies of multinational firms fall into four categories: global market forces, technological forces, global cost forces and political and macroeconomic forces.

I) Global Market Forces

There is tremendous growth potential in the foreign developing markets, which has resulted in intensified foreign competition in local markets which forces the small - and medium-sized companies to upgrade their operations and even consider expanding internationally. There has also been growth in foreign demand, which necessitates the development of a global network of manufacturing bases and markets. When the markets are global, the production-planning task of the manager becomes difficult on one hand and allows more efficient utilization of resources on the other. Few industries remain today, in which the international product life-cycle theory still applies. Product markets, particularly in technologically intensive industries, are changing rapidly. Product -cycles is shrinking, as customers demand new products faster. In addition, the advances in communication and transportation technology give customers around the world immediate access to the latest available products and technologies. Thus, manufacturers hoping to capture global demand must introduce their new products simultaneously to all major markets. Furthermore, the integration of product design and the development of related manufacturing processes have become the key success factors in many high-technology industries, where fast product introduction and extensive customization determine market success. As a result, companies must maintain production facilities, pilot production plants, engineering resources and even Research and Development (R & D) facilities all over the world. Apple Computer, for example, has built a "global manufacturing and engineering infrastructure" with facilities in California, Ireland and Singapore. This network allows Apple to introduce new products simultaneously in the American, European and Asian markets. Companies use the state-of-the-art markets as learning grounds for product development and effective production management, and then transfer this knowledge to their other production facilities worldwide. This rationale explains why Mercedes-Benz decided recently to locate a huge manufacturing plant in Vance, Alabama. The company recognizes that the United States is the state-of-the-art markets for sport utility vehicles. It plans to produce

those vehicles at the Vance plant and introduce them worldwide by 1997.

II) Technological Forces

A peculiar trend, which was prevalent in the last decade, besides globalization, was a limited number of producers, which emerged due to diversity among products and uniformity across national markets. Product diversity has increased as products have grown more complex and differentiated and product life cycles have shortened. The share of the US market for high technology goods supplied by imports from foreign-based companies rose from a negligible 5 percent to more than 20 percent with the last decade. Moreover, the sources of such imports expanded beyond Europe to include Japan and the newly industrialized countries of Hong Kong, Singapore, South Korea and Taiwan. There has been diffusion of technological knowledge and global low-cost manufacturing locations have emerged. In response to this diffusion of technological capability, multinational firms need to improve their ability to tap multiple sources of technology located in various countries. They also must be able to absorb quickly, and commercialize effectively, new technologies that, in many cases: were invented outside the firm thus overcoming the destructive and pervasive 'not-invented-here' attitude and resulting inertia. There have been technology sharing and interfere collaborations. The well-known joint ventures in the auto industry between US and Japanese firms (GM-Toyota, Chrysler-Mitsubishi, Ford-Mazda) followed a similar pattern. US firms needed to obtain first-hand knowledge of Japanese production methods and accelerated product development cycles, while the Japanese producers were seeking ways to overcome US trade barriers and gain access to the vast American auto market. As competitive priorities in global products markets shift more towards product customization and fast new product development, firms are realizing the importance of co-location of manufacturing and product design facilities abroad. In certain product categories, such as Application Specific Integrated Circuits (ASICs), this was the main motivation for establishing design centres in foreign countries. Other industries such as pharmaceuticals and consumer electronics also have taken this approach.

RFID:- Radio Frequency Identification(RFID) technology is proving to have a dent in the contemporary business. In spite of the strong threat from Bar-Coding Technology, RFID has been gaining huge popularity in many spheres of business. Since it is easier to operate than barcodes. It has been used extensively in retail which evident from the fact the giant retailers like Wal-Mart, Metro AG etc have not only started using RFID but also insisting that their suppliers must stick to this technology on all the items of supply. Though initially it seems RFID technology is expensive, but if the entire gamut of supply chain is taken into consideration, it turns out to be cheaper and operationally efficient. This technology can be extensively used in the following domains of business.

Retail supply chain management & warehousing management.

Logistics, tracking of goods & trucks.

Shipping, container Tracking, cargo Tracking.
Security systems etc.

RPID is the technology for future. In the field of supply chain, establishing global standard will be a further boon for advancement of this technology as a whole.

III) Global Cost Forces

New competitive priorities in manufacturing industries, that is product and process conformance quality, delivery reliability and speed, customization and responsiveness to customers, have forced companies to reprioritize the cost factors that drive their global operations strategies. The Total Quality Management (TQM) revolution brought with it a focus on total quality costs, rather than just direct labour costs. Companies realized that early activities such as product design and worker training substantially impact production costs. They began to emphasize pretention rather than inspection. In addition, they quantified the costs of poor design, low input quality and poor workmanship by calculating internal and external failure costs. All these realizations placed access to skilled workers and quality suppliers high on the priority list for firms competing on quality. Similarly, Just-in-time (JIT) manufacturing methods, which companies widely adopted for the management of mass, production systems, emphasized the importance of frequent deliveries by nearby suppliers. A number of high-technology industries have experienced dramatic growth in the capital intensity of production facilities. A state-of-the-art semiconductor factory, for instance; costs close to half a billion dollars. When R&D costs are included, the cost of production facilities for a new generation of electronic products can easily exceed \$ 1 billion. Similarly, huge numbers apply for the development and production of new drugs in the pharmaceutical industry. Such high costs drive firms to adopt an economies-of-scale strategy that concentrates production in a single location, typically in a country that has the required labour and supplier infrastructures. They then achieve high-capacity utilization of the capital-intensive facility by aggressively pursuing the global market. Besides this the host government subsidies also become an important consideration

According to study, four important characteristics define companies that succeed in developing global supply chain network to manage total supply chain cost.

1. **Corporate global Vision** :- Does the organization create an effective global vision as a primary driver for investing resources and effort in seeking global supplier and customers? Without an ideal vision of what the organization is attempting to accomplish, managers at different locations throughout the world have difficulty in coordinating business unit strategies and functional goals. As organization seek to expand their global operations, an effective vision serves as a primary force for developing a global supply base.
2. **Management Structure & Systems**:- Is the company effectively organized to promote coordination among the different global strategic business units? Best - in - class companies have invested in enabling structures and systems to deploy their global vision. These enablers include the following:

Global community councils and reporting systems to facilitate communication among the indifferent business units, International procurement officers (IPO) and sales officers with contacts in Government agencies to promote sharing of expertise and knowledge regarding traditional sourcing! sales opportunities. improved total cost models for decision making and Global information system capable of providing sourcing and demand information to global production design sites.

Configuring the global supply base: - Are sourcing and sales strategies developed to optimize the mix of local supplier/ distributor? As organization sets up production unit in new regions, they often discover that some mix of local and global suppliers is optimal. However, the mix may change as they gain experience with local suppliers.

Supplier development: - In the organization deploying resources to ensure that suppliers capabilities are aligned with competitive and manufacturing strategies? Supplier development approaches varies in different regions according to specific type of problem encountered.

Although developing a global supply chain strategy requires a fundamental shift in the way one thinks about doing business, one of the drivers for making decision has to lie in understanding the total cost of ownership across the entire Global supply chain. By understanding the cost drivers that underlie total cost, managers can implement strategically designed to reduce these cost.

IV) Political & Macro Economic Forces

Getting hit with unexpected or unreasonable currency devaluations in the foreign countries in which they operate is a nightmare for global operations managers. Managing exposure to change, in nominal and real exchange rates is a task, which the global operations manager must master. If the economics are favorable, the firm may even go so far as to establish a supplier in a foreign country where one does not yet exist. For example, if the local currency is chronically undervalued, it is to the firm's advantage to shift most of its sourcing to local vendors. In any case, the firm may still want to source a limited amount of its inputs from less favorable suppliers in other countries if it feels that maintaining an ongoing relationship may help in the future when strategies need to be reversed. Becton Dickinson has built a global manufacturing network for its disposable syringe business, with production facilities in the United States, Ireland, Mexico and Brazil. When the Mexican peso was devalued, the company quickly shifted its production to the Mexican plant, thereby gaining a cost advantage over its competitors' US factories. The emergence of trading blocks in Europe (Europe 1992), North America (NAFTA), and the Pacific Rim has serious implications for the way firms A? structure or rationalize their global manufacturing sourcing networks. These trends are clearly apparent in many industries. For instance, before 1992, 3M's European plants turned out different versions of the same product for the various European countries. Today, 3M manufacturing plants produce goods for all of Europe and, in the process, realize significant cost savings. Similarly, Philips, Thomson, Electrolux and Ford are in the process of creating pan-European

networks of factories (producing both components and finished goods). The trade protection mechanisms that exist in the following of tariff and non-tariff barriers affect the global operation strategy; but these are readily losing importance in the new borderless trade regime.

VII. LEAN SUPPLY CHAIN

Business today is in a global environment. In this era of global competitiveness, companies have to cope up with technique emerging in other areas. In the manufacturing sector, particularly automotive, Toyota Production System or Lean Manufacturing became very popular. When similar principles when applied to supply chain, it helps to reduce cost. Today many tier 1, tier 2 and tier 3 suppliers are struggling financially to meet their customer demands for lower cost, higher quality and time deliverables. For many of these supplier, developing a lean supply chain appears to be an immediate solution to the enormous pressure placed on the supplier by their customers. Development of lean supply chain requires years to develop and require many tools that most supplier are not familiar with. While this is the problem many organization facing today, a first step towards to challenge is to transform short term thinking. As with any system, the first step to acquire training on the processes required to develop a lean supply chain. Today many organizations are looking at Toyota Production System as the model benchmark and to adapt. It is important to keep in the mind that companies that have lean supply chainlike- Toyota, United Parcel services, Fed Ex these organization have been perfecting their system from long back years. Hence in lean supply chain the focus is on how both supplier and customer can lower each others cost and provide a product to the end user customer base on supporting Just-in-time. The results of this partnership are a healthy relationship and for many organizations a healthy relationship means their bottom line is back.

VIII. EFFECT OF GLOBAL COMPETITIVENESS

Operations and logistics are forced to adapt to environment. The logistic framework is forced to integrate its activities to meet the challenges of an integrated economy.

a) Geographic-Integration :

Geographical boundaries are losing their importance. Companies view their network of worldwide facilities as a single entity. Implementing worldwide sourcing, establishing production sites on each continent and selling in multiple markets all imply the existence of an operations and logistics approach designed with more than national considerations in mind. This geographical integration has been exploited by the regional economic integration, a very good example being the European Union. After the integration process was triggered off on 1 January 1993. At that time, customs duties between European Economic Community countries were abolished. This elimination of borders caused companies

to rethink their physical flow structures for Europe as a whole.

b) Functional Integration:-

The world is moving at such a fast pace that the various functional activities are no longer sequential and compartmentalized. The responsibilities of the logistics and operations manager is not limited to coordinating the physical flows relating to production distribution, or after sales service; they are also responsible for functions such as research, development and marketing. This functional integration improves flow management considerably. When setting up projects for developing new models, automobile manufacturers such as Renault in Europe have two teams working together: one from the R&D department and the other from the logistics group. The teams' assignment is to simulate the flows required in the procurement and manufacturing stages according to the elements prepared by the research unit.

C) Sectorial Integration:-

In traditional supply chains, suppliers, manufacturers, distributors and customers each work to optimize their own logistics and operations. They acted in isolation concerned only with their part of the flow system which resulted in creating problems and inefficiencies for other players in the channel hampering the smooth flow all of which add cost to the total system. Leading firms, realizing this situation, are beginning to extend their view beyond their corporate boundaries and work cooperatively with all channel parties in an effort to optimize the entire system. This cross boundary cooperation is referred to as Sectorial Integration.

IX. CONCLUSION

The world economy is becoming borderless and integrated, driven by global market forces, global technological forces, global cost forces and political and macro-economic forces. The integrated world economy and global competitive arena is changing the way in which companies traditionally operated. There is also geographical, functional and sectorial integration, which gives a truly global playing field to the companies and results in global supply chains. Hence Global Supply Chain is playing vital role in Global competitiveness.

REFERENCES

Journal article:

- [1] Dr. N.Chandrashekhara, 2006, "Towards Logistics Effectiveness in India" Materials Management Review - Pg.10
- [2] Girishchandra Tripathi & Ruchi Jain 2006, 'RFID- A Competing Technology' Materials Management Review Pg.1 8-24
- [3] Mark Crone, 2006 "Are global Supply chains too Risky?", Supply Chain Management Review, Pg 28-32

Book: -

- [4] R.CHASE & F.R. JACOBS 2006, 'Operation Management for Competitive
- [5] Advantage 10th 2007 'Operation Management, Theory & Practice. First Impression, Pearson Education New Delhi, 27pp

[6] Robert Handified & Ernest L. Nicholas, Jr, -2002, 'Supply Chain Redesign" Pearson Education New Jersey, 230pp

[7] Sunil Chopra & Peter Meindl,-2005, 'Supply Chain Management', Pearson Education New Delhi

[8] Rahul Altekar, 2005, "Supply Chain Management-Concept & Cases", Prentice Hall India Pvt. Ltd, New Delhi