

Global Trends in Supply Chain Management

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INTRODUCTION

Supply Chain Management (SCM):

The SCM is considered by many experts worldwide as the ultimate solution towards efficient enterprise management. Many management failures have been attributed to the lack of system to bind various sub systems within geographically widespread enterprise, which true to modern trends, also includes umbrella of customers, suppliers and associates. Managers of tomorrow are therefore, expected to raise themselves above the level of perpetual crisis management to one of the proactive, predictive and performance oriented management.

SCM is a set of synchronized decisions and activities utilized to efficiently integrate suppliers, manufacturers, warehouses, transporters, retailers, and customers so that the right product or service is distributed at the right quantities, to the right locations, and at the right time, in order to minimize system-wide costs while satisfying customer service level requirements. The objective of SCM is to achieve sustainable competitive Advantage.

A company's supply chain in an e-Biz environment can be very complicated. Indian economy bears simplified supply chain because many companies have hundreds and thousands of supplies and customers. The supply chain thus in its entirety includes internal supply chain functions, an upstream supplier network, and a downstream distribution network. Logistic function facilitates the physical flow of material from the raw material producer to the manufacturer, to the distributor, and finally, to the end user.

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The SCM has many **applications in the government environment** too. This paper highlights some of the typical applications in the government sector of the SCM paradigm. What is essential in the SCM is to establish operationally feasible link(s) between various key component for achieving overall efficiency and cost trade-off. The use of quantitative methods in SCM is evaluated, embedding of these models in Decision Support System (DSS) have been discussed. The major component of SCM is multi-objective transportation and distribution function for time and cost trade-off. The Multiple Criterion Decision Making (MCDM) model for the component of SCM viz. Transportation and Distribution, system as a DSS have been described in detail - a major backend system of Integrated Supply Chain Management Process (ISCMP).

The current trend toward the globalization of supply chains renders many managers confused as to what *globalization* really means. Often, the term is little more than a battlefield of semantics, of little value to the individual tasked with managing value creation and cost reduction processes in the movement of goods. Clearly, globalization infers the cross-border movement of goods and the emergence of global competitors and opportunities across competing supply chains within an industry. Managers, however, often question the differences between a global market and a single market, in that many of the same conditions exist in both. Although this may be true, the complexities of cross-border operations are exponentially greater than in a single country, and the ability to compete in the global environment often depends on understanding the subtleties that emerge only in cross border trade—that is, in Global Supply Chain Management (GSCM).

The **fierce competition** in today's markets is led by advances in industrial technology, increased globalization of demand and supply sources, tremendous improvements in information availability, plentiful venture capital, and creative business designs. In highly competitive markets, the simple pursuit of market share is no longer sufficient to ensure profitability, and thus, companies focus on redefining their competitive space or profit zone. For example, companies pursue cooperative relationships to capture lifetime customer share (as opposed to mass market share) through systematic development and management of cooperative and collaborative partnerships. Markets have been changed by factors such as power shifts from corporate buyers to end users, the requirement for mass customization, emergence of global consumer segments, time- and quality-based competition, improvements in communications and information technology, increasing knowledge intensity, and changing government policies. Power in a broad spectrum of supply chains has shifted downstream toward the customer or end user, and as a result, customer satisfaction becomes the ultimate goal of a company. As the customer increasingly is in charge in the marketplace, inter firm cooperation is critical to satisfy customers. Manufacturers and their intermediaries must be nimble and quick or face the prospect of losing market share, and thus, relationships and predictable performance become very important in a supply chain.

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The ISCM is now not only a problem of integrated logistics (as a process) but also demands that the SCM must look into the ramifications of these arrangements on the cost of transportation (including tariffs or duties) of products within a trade zone and outside it, besides, developing logistics strategies. The field has thus developed in the last few years for bridging the gap between demand and supply vis-à-vis efficiency and cost trade-offs. The SCM now not only involves the "management of logistic function", as was done in the past (to achieve internal efficiency of operations) but, includes the management and co-ordination of activities, upstream and downstream linkage(s) in the supply chain. The integrated supply chain management, in particular include: Planning and Managing supply and demand; Warehouse Management; Optimal Inventory control; Transportation and Distribution, Delivery and customer's delight following the basic principles of SCM viz. working together; Enhancing revenue; Cost control; Assets utilization besides, customer's satisfaction.

The last two decade has seen the rise of a plethora of acronyms always used in conjunction with production, operational management and control. To name a few JIT (Just-In-Time); TQM (Total-Quality-Management); ZI (Zero-Inventory); ECR (Efficient Consumer Response); VMI (Vendor Managed Inventory). All these have now been integrated within the domain of SCM Process.

With the growth in the Information Technology and easy accessibility of computing power, the development and implementation of objective based modeling system(s) have been changed to a new environment, for integrating quantitative and simulation models, as a backend system for both horizontally diversified and vertically integrated SCM. Though, the SCM have found the versatility of applications, more so in the private sector enterprises (business environment) for cost cutting and for having a competitive advantage.

SIX KEY TRENDS:

In the government set-up though the basic objective, is not maximization of profit, but the social-economic development of people. Even, if the objectives of these two mutually exclusive categories of enterprises are different, they share some features: that is satisfying the end-consumer(s) by providing the right product, in right condition at the right time to fulfill the social obligation towards society and the optimum allocation of limited resources. From our experience, observing the trends of some key companies in food and beverage, consumer products, high tech and industrial manufacturing, there are six key trends causing significant impact and change to supply chain design and performance. They are demand planning,

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globalization, increased competition and price pressures, out-sourcing, shortened and more complex product life cycles, and closer integration and collaboration with suppliers.

In the first place **demand planning**- as sources and capacities for manufacturing have increased, more companies have moved away from focusing efforts on plant-level production planning and are adopting more of a demand driven focus of trying to influence and manage demand more efficiently. Advanced demand planning systems and proper strategies can also help uncover data and identify trends buried in a company's information systems.

In the second place sequel to **globalization** largely due to improvements in communications, globalization is dramatically impacting the way business is managed and transacted, even on the most local levels. No area of a business is affected more by the trend to a global business environment than the supply chain. Manufacturing, distribution, sourcing of materials, invoicing and returns have all been significantly impacted by the increased integration of a global customer and supplier base, and many companies find that existing processes and technology are not flexible enough for this new business environment.

In the third place due to **increased competition and price pressures**, continued commoditization of many products, companies need better ways to distinguish themselves. In one case, a large global consumer goods manufacturer saw prices around some of its commodity products drop as much as 60-80 percent. Product innovation and brand equity no longer were allowing them to command a higher price in the market. In order to continue to compete with that commoditized product they made significant cost improvements with supply chain re-design and technology.

In the fourth place owing to **outsourcing** some realize that outsourcing parts or all of a supply chain can be advantageous. With marketplace improvements around (1) information media and systems (2) cost and quality of global manufacturing and distribution, and (3) product design capabilities, companies are gaining additional synergies by outsourcing all or parts of their supply chain.

In fifth place where **shortened and more complex product life cycles** many MNCs, TNCs, IBCs, are under pressure to develop innovative products and bring them to market more rapidly, while minimizing cannibalization of existing products, which are still in high demand. In order to meet the needs of both customers and consumers, companies need more efficient product lifecycle management processes. This includes heavy emphasis on managing new product introduction, product discontinuation, design for manufacturability and leveraging across their entire product and infrastructure characteristics.

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In sixth place due to circumstantial cajolation many corporates are moving towards more intense **collaboration between stakeholders' customers and suppliers** for extended supply chain. The level of collaboration goes beyond linking information systems to fully integrating business processes and organization structures across companies that comprise the full value chain. The ultimate goal of collaboration is to increase visibility throughout the value chain in an effort to make better management decisions and to ultimately decrease value chain costs. With the right tools, processes and organizational structure in place, collaboration provides key people throughout the value chain with the information needed to make business-critical decisions with the best available information.

The GSCM usually involves a plethora of countries, usually comes with a plethora of new difficulties that need to be dealt with appropriately. One that companies need to consider is the overall costs, labor costs significantly lower, companies must also focus on the costs of space, tariffs, and other expenses related to doing business overseas. Additionally, companies need to factor in the exchange rate, and companies must do their research and give serious consideration to all of these different elements as part of their GSCM approach.

Time is another big issue coupled with productivity of overseas employees and the extended shipping times can either positively or negatively affect the company's lead time, but either way these times need to be figured into the overall procurement plan. Also, customs clearance time and other governmental red tape can add further delays that need to be planned and figured into big picture. Another issue that must be incorporated into a global supply chain management strategy is supplier selection. Finally, companies who choose to ship their manufacturing overseas may have to face some additional considerations as well.

Over the past three decades, customer expectations have risen by leaps and bounds (Nebel et. al., 2000), Customers continue to become more sophisticated and interested in innovative products and customized services. They are becoming more unpredictable in their wants and needs. At the same time, they continue to expect and demand more 'value' from brands. In their bid to satisfy the customer's fancy, businesses are vying with one another to service the customers with their product and service offerings. Heightened competition has given customers tremendous freedom of choice - a freedom they have been increasingly willing to exercise. Thus, to achieve sustainable advantage in this competitive scenario, it is imperative for businesses to service the needs of their customers excellently across any and all local points.

As per the year 1999 reports by both Geneva-based World Economic Forums (WEF), Global Competitiveness Report (GCR) and the Laussan. Switzerland-based International Institute for Management Development (IMD), World Competitiveness Yearbook (WCY), India continues to

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remain firmly stuck near the bottom and ranked 52 out of 59 countries by the GCR and 39 out of 47 countries by WCY. This enviable image is despite the fact that India, the fifth largest country in terms of Gross National Product (GNP) and Purchasing Power Parity (PPP) (World Bank estimates, 1999), constitutes one of the fastest growing markets in the world and is also counted among the richest in regard to cheap skilled labor, scientific and technological resources, and entrepreneurial talents.

The *supplier network* consists of all organizations that provide materials or services, either directly or indirectly. For example, a computer manufacturer's supplier network includes all the firms that provide items ranging from such raw materials as plastics, computer chips, to subassemblies like hard drives and motherboards

The *e-distribution network* is responsible for the actual movement of materials between locations. Distribution management involves the management of packaging, storing, and handling of materials at receiving docks, warehouses, and retail outlets. A major part of distribution management is transportation management, which includes the selection, and management of external carriers or internal private fleets of carriers.

E-commerce uses advanced technology to assist business transactions in a web-based environment and facilitates the transaction of information flow and fund flow. E-commerce involves business-to-business transaction (B2B) such as Covariant, business-to-customer transaction such as Amazon.com (B2C), customer-to-business transaction (C2B) such as priceline.com, and customer-to-customer transaction (C2C) such as e-Bay auction. E-commerce is conducted via a variety of electronic media.

E-procurement is a part of E-commerce. E-procurement completely revolutionizes a manufacturing or distribution firm's supply chain, making a seamless flow of order fulfillment information from manufacturer to supplier.

Supplier challenges

1. Exchange rates

Costs for U.S. buyers continue to rise because of the weakness of the dollar against other currencies, but nothing is constant. The lingering European debt crisis, the fiscal challenges here at home and China's slow revaluation of its currency all play a role in fluctuating rates. The need to purchase ingredients months in advance of manufacture can make it challenging to source

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ingredients at competitive prices."The biggest issue with overseas supply challenges is the U.S. dollar. As the euro continues to soften, the only currency of safety is the U.S. dollar," said George Pontiakos, president and CEO of BI Nutraceuticals. "But I'm concerned it will soften again. Currency is life." The strengthening of the Yuan, something long urged by some U.S. policy makers, is not necessarily good news for U.S. supplement companies, which source somewhere in the neighborhood of 60 percent of their overall ingredients supply there. The Yuan has strengthened from 7.74 Yuan to the dollar in late February of 2007 to 6.29 in late January of 2012.

"Chinese ingredient costs continue to be on the rise across the board," said Larry Kolb, president of US operations for TSI Health Sciences. "Inflationary pressures in these developing countries (primarily labor and currency costs) have been difficult to manage in 2011, and I see 2012 presenting the same challenges."

2. Agricultural conditions

Ingredients made in a factory don't rely on weather conditions for the most part. But "natural" ingredients have to come from Mother Nature, who hasn't been cooperating lately. Extreme weather events are on the rise across the globe. The summer of 2010 was the hottest ever recorded in the Northern Hemisphere, according to the National Oceanic & Atmospheric Administration, and the agency said the summer of 2011 was the second hottest on record in the US. (Thanks for coal-burning power plants and their CO₂ emissions, not to mention emissions of mercury—a significant stain on Atlantic farmed salmon). One of the effects of global warming has been the increasing unpredictability of rainfall in many agricultural regions. Extremes of flooding and drought are becoming more commonplace, further burdening water supply systems, most of which were designed with more consistent rainfall in mind. Across the globe, growers seem to be making up the difference by pumping more from wells.

The global water table is deteriorating markedly, even fields that have been clean for centuries are now showing lead traces, arsenic traces, pesticide traces, aquifers starting to become problematic and is being seen in the saw palmetto crop while the oil counts are lower and the crop is not as hardy and healthy, and it's a water problem. The more tenuous agricultural conditions can lead to commodity shortages in their own right. But there's an add-on effect; as basic food commodities become more expensive and less secure, agricultural policy makers, who still in many countries dictate what will be grown where, are motivated to move toward basic nutrition crops.

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3. Shortages of ingredients

Shortages in ingredients derived from plants or animals are almost inherently going to happen because they are both finite in quantity and supply. Factors from popularity in demand to weather conditions affect the overall supply and not all of the situations that impact supply can be foreseen. One issue that has affected the shortage picture in the U.S., still by far the biggest supplement market in the world, has been spikes in demand caused by mentions of ingredients which was evident on the Dr. Oz Show- Demand for astaxanthin, for example, skyrocketed in 2011 after a guest extolled its benefits on the show. Now Foods, which markets an astaxanthin supplement, saw sales increase tenfold. Some industry observers have speculated that the potentially overheated demand for ingredients whose supply chains cannot rapidly ramp up production could create artificial shortages.

4. Adulteration

The issue of shortages brings up the troubling issue of economically motivated adulteration. If an ingredient is pricey or in short supply, some suppliers will move to meet that demand with substitute materials. Or, in a scenario that is endemic rather than cyclical, suppliers will cut botanical supplies to meet buyers' aggressive price points. So that's the why. But who's to blame? The buyer of the ingredient bears ultimate responsibility for what's in the container. "Adulterated products are a function of the people who buy the ingredient, because they are demanding that suppliers meet impossible price points and looking the other way when they do. The majority of the US market pricing has been set at an artificially low number for years, and really the only way one can get there is to spike the product to lower the cost.

Salient Features of Indian Supply Chain Management and Steps Taken by Government of India for Improved SCM Network

India is **second largest producer** of commodities such as fruits and vegetables. One of the key issues, which require research, is the method by which we can reduce the post harvest loss, which is quite substantial at present. This would need design of cost effective, efficient, environment friendly storage system. Also, there is need for value addition to agricultural produce to maximize the agriculture return.

India is likely to become the **food basket** to the world considering 52% of total land under cultivation as compared to global average of 11%. India is also having the labor cost advantage; organized research is growing very speedily. Because of these developments, farmers would get

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latest market prices and various products, weather reports and best farming practices. India is being touted as the **land of opportunity** for logistics service providers all over the world. According to Frost & Sullivan's report Industry-railway-road and sea Indian logistics market represents \$50 billion and is growing at a rate of 7% annually. A number of small-integrated players are also in the fray making this sector more efficient- to make the Indian economy more vibrant and radiant.

Transportation costs account for nearly 40% of **production costs**. **Logistics costs** around 13% of GDP, compared to 8% in the US. Growth in Indian economy is the major driving factor for the demand in logistics industry. Chemicals, metals, FMCG, cement and textiles have been identified as the top five contributors to logistics revenues.

India has the **second highest largest road network**-3.3 million km. US has the largest road network with 6.4 million km & China-1.8 million km. National highways-2% of total road length. But carry 40% of goods traffic of India. Road Network carries nearly 65% of freight and 85% of passenger traffic. Vehicle ownership is firmly in the hands of individual truck owners. 67% of vehicle owners have fleets of less than five vehicles.

Traffic on roads is growing at a rate of 7 to 10% per annum. Government spends-12 per cent of capital and 3 per cent of total expenditure on roads. The Golden Quadrilateral (GQ; 5,846 km) connecting the four major cities of Delhi, Mumbai, Chennai and Kolkata. The North-South and East-West Corridors (NS-EW; 7,300 km) connecting Srinagar in the north to Kanyakumari in the south and Silchar in the east to Porbandar in the west.

The **Indian Railways** boasts of being the world's **2nd largest rail network** spread over 81,511 km and covering 6896 stations. The freight segment accounts for roughly two thirds of railway's revenues. The tonne/kilometre costs for Indian rail freight at three times that of China. Rail services have been liberalized Reliance Industries, P&O ports, APL Logistics, Maersk, Central Warehousing Corporation and Adani Logistics have shown interest in this sector.

Indian Ports: India has **12 major and 184 minor / intermediate ports** spread across the vast coastline of 7517km The 12 major ports handle about 76 per cent of the traffic. India's West Coast ports handle almost 70% of traffic. India now has the largest merchant shipping fleet among the developing countries. India ranks 17th in the world in shipping tonnage. Indian share of maritime transport services is 1% of world market. The container traffic has registered an impressive growth of 15 per cent over the last five years. **Port traffic to grow to a level of 650 Million Tonnes Per Annum** by 2008-Ministry of Shipping. Port Privatization is picking up

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momentum--USD1.39 billion worth projects approved. Players ---P&O, PSA, Maersk, Gammon India, CWC and the Dubai Port Authority.

Aviation holds a **small share of India's freight market**. Air Freight is very expensive in India in comparison to road and rail. The size of the world air cargo market is estimated at 27 million tonnes valued at \$200 billion. India accounts for meager 3% of the global air cargo market, As per an expert estimate, Indian air cargo industry is going to be double by the year 2010.

Contents of Air Cargo-garments, machinery, components, pharmaceuticals, dyes, chemicals and perishables [fruit, vegetables, flowers, fish and meat. Major International cargo airports- Mumbai, Chennai, Bangalore, Trichy, Hyderabad, Delhi, Coimbatore, Cochin. Major domestic cargo airports –Ahmedabad, Goa, Lucknow Vizag (Visakhapatnam), Madurai in addition to the above.

The **(AAI)** Airports Authority of India **planned for further development to** say Investments of USD 5.07 billion over next 5 years in Indian Airport Infrastructure. Blue-Dart, the only dedicated freight carrier in domestic sector. Air India plans to increase cargo revenue from current 10% to 15-20% in 3yrs. Jet Air, GoAir, Kingfisher Airlines charting out plans to play bigger role in Indian domestic air cargo. International Airlines-Cathay Pacific and BA increasing cargo capacity to and from India.

3rd Party Logistics (3 PL) imply that one company acts as an agent to look after the logistics aspect of another company or group of companies. 3RD party logistics entails a study of the customer's business, supply chain and distribution network, in order to formulate a comprehensive integrated logistics strategy, which will help render all supply-related services from a single window.

India's 3PL sector represents 3 percent of the country's total logistics spend. The Indian 3PL market is expected to grow at around 20 percent per annum in the next 3-5 years. The practice in India reveals that warehousing and outbound transportation, custom clearing and forwarding are the most frequent outsourced activities. Activities such as packaging, fleet management and consolidation have started gaining attention for outsourcing.

A survey by the Transport Corporation of India (TCI) and the Management Development Institute (MDI) shows less than 55% of Indian companies subscribe to 3PL, compared to more than 75% globally. About 57% of the companies plan to outsource reverse logistics within the next five years. 54% plan to outsource inventory management. 53% order processing. More than

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50% of the companies have outsourced activities like transportation, warehousing & customs clearing/forwarding.

Information Technology should be used for maintaining an updated and enriched database of region specific agricultural information and timely dissemination of the information pertaining to soil enrichment, seed selection, actions relating to arrival of monsoon etc. to the farmers. In addition, information regarding agricultural products, demand-supply status in respect of different products and the current price should be made available on-line to the farmers for taking timely decisions on crop product diversification strategies and positioning of the same in right market to get optimum revenue. With agile, demand-driven supply, focusing on reducing end-to-end supply network time by building a flexible and responsive supply network is the need of the time.

The educational and professional institutions should take for guiding the latest information using IT as a tool and make it available to the farmers. The need of the day is to harness the vast potential of agriculture in Indian economy.

Challenges before Indian Logistics Companies

1. Logistics and supply constraints for e-retailers.
2. Competition from Indian and Foreign logistics companies.
3. Technology to keep pace with demand for real time information.
4. Corporatization and lack of skill sets.
5. Shedding local mindset and move to a global mindset.
6. Integration of services and value added services.
7. Funds to fuel expansion & growth.
8. Inadequate infrastructure and complex tax laws.

Logistics and supply constraint for e-retailers:

There are orders from metro cities and also from far off places. Increase in supply of products and lack of logistics in far off places can be a challenge for e-retailers. Few e-retailers have their own logistics network for intra-city and rely on third party services for inter-city. Others depend totally upon Third Party Service Providers (TPSP). Having warehouse at all places is also not cost effective solution. TPSP mostly use surface network to deliver the goods as this is the

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choice provided by e-retailers to keep their distribution cost low. Utilizing air network for delivery would be more costly.

The challenge for e-retailer is to provide timely delivery at far off places. Each TPSP have their own strength based on their delivery network and serviceable locations. Some pin codes can only be serviced by few TPSP. It would make sense for the e-retailer to tie up with 3 or 4 service provider based on his serviceable location pin code. E-retailers can carry out a one to one mapping for pin-code and service providers, which would be unique. Hence when the customer places the orders, based on his address pin-code automatically a delivery request will be directed to the concerned TPSP. Customer could eventually track their orders in third party service provider's website by providing the Way Bill number or Order number.

Competition from Indian and Foreign logistics companies

The global logistics industry is estimated to be worth USD 300 billion, most of the large service providers are headquartered in Europe, the biggest market is the US, which captures about one-third of the world market, characterized by high costs of operations, low margins, shortage of talent, infrastructural bottlenecks, demand from clients for investing in technology and providing one-stop solutions to all their needs, and consolidation through acquisitions, mergers and alliances. In India the industry is still in its infancy, there is immense potential for growth, currently plagued with low demand, poor infrastructure, high costs, government regulations etc. However, it is going to turn around on the back of robust GDP growth, globalization, FDI in logistics and increasing government support.

Technology to Keep Pace with Demand and Real Time Information

There is need for revamping the logistics companies in India in their investments, infrastructure development and alliances. Indian Logistics Companies are looking for strategic alliances and funds to: Improve their technology for value added services such as real time information.

Corporatize and attract talent, to build logistics infrastructure and to integrate services and thus become a multi-modal player.

Future Projected Trends: The Indian logistics market is likely to grow at a CAGR of 7% during the next five years. The unorganized sector may find it difficult to exist at national level due to its inability to keep pace with technology & customer demand Transportation costs are

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bound to come down in future with improvement in infrastructure and growth in cargo movement.

In future party trends the 4th party logistics the logistics entirely controlled by service provider that does not own assets to carry out the logistics activities but out-sources to sub contractors- the 3rd Party Logistics.

Current Challenges

All of us are aware about the **current challenges** that are being faced by the industries mainly the global competition-as well as the problem of price rise which is disturbing both the common people as well as the government. And this is also pinching the industry. Because after it becomes double digit it will definitely eat up and shops for common people. In the process of globalization also Indian manufacturing industries are under tremendous pressure to compete with China and other countries. And they have to compete on quality – price and do deal with the onslaught of China in the global markets or inside internal markets Indian industries have to identify the area in which the costs can be minimized or the costs can be curtailed.

And the second major problem which is disturbing both the society and the government that is **price rise problem** and it is mostly related to the wastage in the distribution process from the producers to consumers and India probably in the world is having one of the highest level of wastages particularly in the food crops like vegetables, food grains, fruit etc. Roughly people estimate that 30% of our fruit production or horticulture production wastage intangible. And the intermediaries are taking most of the benefits. And both producers and final consumers are suffering. Government has thought that the permission to grant **FDI in multi brand retailing** will lead to the problem of the price rise particularly in the food items.

I cannot say that price rise mainly attributed by this problem but it has direct correlations. To work for industries and government as well as for consumers there are big issues ranges how to make our supply chain efficient? And till now it has been maintained and managed by the intermediaries who are not professionally trained to manage the supply chains. Transporters or owners of ware houses or owners of cold storages so India is currently at the cusp of making big overhauls of its logistics and supply chain management. It is the need of the industry and it is the need of the society and need of consumers and of the government. And the current decision was taken only a year ago will create many changes definitely will pressurize all the players to contribute in mainstreaming or making our supply chain more efficient, all kinds of wastages,

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will be groped into and ultimately the knowledge in this area will become very crucial for the top management to correct their bottom line and correct their top line.

In this world the ultimate test or queries lies in satisfying ultimate consumers and Indian consumers need better treatment. When we go abroad the quality of banana what do we find in the Hotels or in homes much better than the quality of banana we are getting here. Similarly all kinds of fruits and vegetables the way model supply chain global supply chain management the banana of Latin America is consumed all over the world. And it has freshness as if it has been procured from the farmer only two or three days back. But it is not being seen here most of the places in our country. And so I compliment the organizers of this workshop.

There is need for practitioners and theoreticians academicians to definitely help this sector to find out what kind of next generational logistics and supply chain management practices can be applied in India so that both the manufacturers and consumers are benefited. The sluggish performance in this sector mainly focuses on supply chain management warehousing, logistics international logistics and other areas ancillary to logistics industry. Thereby to identify various issues faced by all categorized them into groups. And analyze them and work out most practical solution for the benefit of this group so that we could use this solution gainfully in our place.

Carbon emissions –in Europe certainly carbon quota and stuff and compliance in come in India dealing with MNCs and companies like TESCO and WALLMART there will be requirement to keep record of carbon emissions calculations and even on labeling. Are they going in the direction of putting for a packet of chips or crisps and how many grams of carbons are coming on? So we have to be prepared for that.

The global logistics security risks with all these terrorisms and scanning of containers becoming mandatory in ports to US. And if you are in the supply in that trade- starts from ports in India. So and then complexity supply chains have become global and does bring uncertainties and complexities. We are part of that in that supply chain and be prepared in terms of the strategies in those ideas and things. In one of the surveys done by Nottingham University actually, shows that customers are driving supply chain in food and drink sector in Europe and in UK in 1985 where the availability was 90% customers were very happy.

Conclusion

Supply chain management has become not just a question of efficient logistic process, but is related to the growth and survival of organization(s). With customers becoming more demanding

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in their requirement of services from the suppliers, the construction of a efficient and integrated supply-chain has assumed paramount importance. Information technology plays a major role in the formation of the supply chain. Efficient dissemination of information upstream and downstream is a major requirement for the implementation of the supply chain, IT provides this with internet, EDI and GroupWare's and other application software's. The decision support provided by IT products (ERPs, Network construction tools etc) can help the decision makers in the development of the supply chain process and in implementation. The dissemination of the demand (forecast) information throughout the chain can lead to avoidance of the "Bullwhip" effect^[17]. The quantitative models embedded in the DSS's for supply chain management are still at a very elementary stage (in comparison to the theoretical developments), for decision support in the construction of an integrated demand-supply chain, use must be made of these advanced techniques. Organizations can gain supply chain related benefits through the use of internet, namely:

- more collaborative, timely product development through enhanced communication between functional departments, suppliers, customers and even regulatory agencies;
- reduction of channel inventory and product obsolescence owing to closer linkage across the supply chain and better insight into the demand signals to drive product schedules and ultimately achieve build-to order capability;
- reduction in communication costs and customer support costs with more interactive, tailored support capability inherent with internet technologies;
- new channel capabilities to reach different customer segments and further exploit current markets; and
- ability to enhance traditional products and customer relationships through customisations driven by internet connectivity and interactivity.

The SCM paradigm can provide the mechanism for the survival of the public sector enterprises in the changing global scenario, where the globalization of the world economy and the liberalization of the Indian economy is no longer a buzzword, but a fact. The failure of these enterprises can be traced to the ad-hocism and the non-application of efficient managerial practices. This is not to say that these enterprises have lost their relevance in the present scenario. These enterprises have to adopt "change management" i.e. to change their style of functioning, and to form strategic alliances with partner public sector enterprises

Seven principles of SCM needs to be revitalized as SCM sector is facing fierce competition. They are group customer by needs, Customize the logistics network, Listen to signals of market demand and plan accordingly. Differentiate the product closer to the customer, strategically

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manage the sources of supply, develop a supply chain wide technology strategy, and adopt channel spanning performance measures.

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