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AN OVERVIEW OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT IN INDIA

DR. NIKI MALHOTRA
Principal,
College Of Computer Sciences,
Wakad Pune – 57 (MS) (**INDIA)**

ABSTRACT

India is the fourth largest country in terms of Purchasing Power Parity (PPP) and constitutes one of the fastest growing markets in the world. Globalization of businesses, infrastructural bottlenecks, increasing uncertainty of supply chain networks, shortening of product life cycles and proliferation of product variety have forced Indian firms to look beyond their four walls. They face issues related to choosing and working with the right supply chain partners (suppliers, customers and logistics service providers), fostering trust between them and designing the right system of gauging performance.
Keywords: *Globalization, Logistics, Supply Chain Management*

INTRODUCTION

In this paper, snapshot picture of logistics and Supply Chain Management (SCM) practices in India has been presented. It is borne out of the felt need by managers, expert professionals and academicians to address logistics and supply chain practices at the national level. The paper captures facts, figures as well as qualitative responses about the logistics infrastructure and supply chain practices. The focus is on supply chain collaboration and partnerships, supply chain structure, facilities network design, transportation and logistics and the role of Information and Communications Technologies (ICT). The emphasis is to analyze and assess existing logistics and SCM practices and discern emerging trends as well as areas of concern. The paper gives insights into how far the firms and their supply chains in India have come in dealing with major logistics and supply chain issues, the practices they focus on or need to focus on. It also highlights and addresses a few issues related to supply chain managers and policy makers.

Logistics and SCM practices are a set of activities undertaken to promote effective and efficient management of supply chains, including supplier partnership, physical movement of goods, meeting customer demands and information sharing throughout the supply chain. Some of the key logistics and SCM practices that impact performance are related to estimation of customer needs, efficient and effective delivery, integration and collaboration

throughout the supply chain, sharing of information and vision using ICT as well as informal methods and use of specialists for performing specific jobs across the supply chain. All of these practices impact logistics and supply chain performance.

The de-regulation of the Indian economy in the 1990s has attracted global players and has unleashed a new competitive spirit. However, a distinctive characteristic of the Indian economic environment is the inadequacy of basic inputs normally required to support organized economic activity. The UPS Asia Business Monitor Survey, 2004 (Available at: http://) finds that besides the lack of government support, poor logistics infrastructure and poor supply chain efficiency are the major obstacles to competitiveness in India. The Indian infrastructure comprising roads, railways, airports, seaports, ICT and energy production is poorer as compared to many other countries. However, things are changing for the better at a fast pace. The Growth Competitiveness Index survey conducted by the Geneva-based World Economic Forum (WEF) for 2013-14 puts India at 60th position among 148 countries in its Global Competitiveness Report, in the same manner in ear 2014-15 position at 71 amongst 144 countries, which is eleven places up from previous years ranking of 60. (Available at: http:// /www.weforum.org/)

A few years ago, logistics and SCM were seen as necessary evils in India; today they are seen as a matter of survival and competitive advantage. As companies look at logistics and SCM strategically, they turn to specialized service providers to cut out non-core activities from within. A rising focus on outsourcing is leading to a surge in business performance for logistics service providers. One offshoot of the demand for logistics services is that many companies are changing their names to include 'logistics' somewhere as well, much like the dot-com boom times in the early 1990s.

Worldwide, best-in-class companies have invested in enabling infrastructure and technology to realize their supply chain vision into a reality. These include integrated supply chain cost models for decisive inventory management, technology for handling supply chain throughput and information systems capable of fostering visibility across organizational boundaries. Dell Computers and Wal-Mart were able to achieve leadership positions because of their efficient and effective supply chain management practices. Both of these have invested enormously in ICT to help them have continued focus on customer needs and supply chain efficiencies. Many instances of novel and innovative supply chain practices such as cross-docking, Collaborative Planning, Forecasting and Replenishment (CPFR), extensive use of bar-codes and now RFID, and direct-to-home delivery have been introduced by these firms. Wal-Mart had its own satellite communication system as early as 1983. Wal-Mart's PoS data is shared with its suppliers to reduce the dependence on forecasts.

Similarly, there are multi-billion companies which have shifted focus from courier and cargo to logistics and supply chain; from being freight forwarders to integrated shippers; and from

customs clearances to consultants. Indian SCM service providers are also evolving rapidly. The shift in service providers from just movers of material to logistics to supply chain services has quickened in the past few years. Truckers are moving up into integrated haulers; large Indian companies with multi-million spends on logistics are hiving off entire divisions into service providers who handle not just the parent's logistics but also of others; others are forming joint ventures to leverage skills. IT companies now provide not just the hardware and software, but consultancy for solutions, examples being *Satyam*, *Wipro*, *Infosys* and *TCS*. Big players like *DHL to invest* US $ 100 million in India and more is on the way. It has already acquired *Blue Dart*, the top firm in air logistics business. Container Corporation of India (*Concor*), at US$ 380 million, the largest listed firm in logistics in India is diversifying. Others, like *Gati*, *XPS* and *Safexpress*, are expanding to UAE, Sri Lanka, Singapore and Bangladesh as well as into new areas like modern warehousing.

LITERATURE

Literature portrays logistics and SCM practices from a variety of different perspectives with a common goal of ultimately improving performance and competitiveness. Based on literature, we find that the important supply chain practices concerns are mainly related to:

- Supply Chain Collaboration and Partnership with various stakeholders such as the product developers, suppliers, channel partners and end-users.
- Supply Chain Structure including facilities network design taking into account Related transportation and logistics.
- Forecasting and Demand Management to cope with supply chain complexity in a cost-effective and delivery-efficient way.
- Use of Information and Communication Technologies (ICT) to facilitate the above.

While there is plenty of published literature that explains or espouses SCM, there is a dearth of empirical studies examining logistics and SCM practices. Galt and Dale (1991) study ten organizations in the UK and find that they are working to reduce their supplier base and to improve their communications with the suppliers. Fernie (1995) carries out an international comparison of SCM in the grocery retailing industry. He finds significant differences in inventory held in the supply chain by the US and European grocery retailers, which could be explained by difference in degrees of their SCM adoption. Tan and Wisner (2000) compare SCM in the US and Europe. Tan (2002) relates SCM practices and concerns to firm's performance based on data from US companies. He lists nine important supply chain concerns such as lack of sophisticated ICT infra-structure, insufficient integration due to lack of trust and collaboration among the supply chain stakeholders and thereby lack of supply chain effectiveness and efficiencies. Basnet et al. (2003) report the current status of SCM in New Zealand, while Sahay et al. (2003) discuss supply chain strategies and structures in India. These surveys rank the perceived importance of some SCM activities, types of

hindrances and management tools on the success of SCM using representative samples mostly from manufacturing. Quayle (2003) surveys supply chain management practice in UK industrial SMEs (Small Manufacturing Enterprises) while Kemppainen and Vepsalainen (2003) probe current SCM practices in Finnish industrial supply chains through interviews of managers in six supply chains. They analyze the change of SCM both in terms of operational practices and organizational capabilities. Chin et al. (2004) conduct a survey that examines the success factors in developing and implementing supply chain management strategies for Hong Kong manufacturers. Moberg et al. (2002) state that there is little literature on information exchange. Feldmann and Muller (2003) examine the problem of how to establish an incentive scheme to furnish reliable and truthful information in supply chains.

There is little literature on logistics and SCM practices in India. Available literature focuses either on the best practices (Joshi and Chopra, 2004) or on re-engineering of internal operations of the firms (Deshmukh and Mohanty, 2004, Kankal and Pund, 2004). In context of ICT, Saxena and Sahay (2000) compare the manufacturing intent to be an agile manufacturer and their Information Technology (IT) infrastructure in terms of scope of use, extent of use and integration of IT-based systems. The more recent studies are mainly based on questionnaire surveys and secondary data sources (Sahay and Mohan, 2003, www.etintelligence.com, Sahay et al., 2006). Vrat (2004) discusses some issues and challenges as well as the potential of SCM in India. All these studies find Indian firms generally lagging behind their counterparts in the developed countries.

DISCUSSIONS

To succeed today and to pave the way for a better future, firms in India need to create strong linkages with their logistics and supply chain partners. More and more of them today are realizing the importance of developing and implementing a comprehensive logistics and supply chain strategy – and then linking this strategy to the overall business goals. Adopting these initiatives first and foremost requires taking a long-term view and having an extensive focus on all the channels in the total transformation process to create a productive and reliable supply chain. Technology, which was earlier taken to be a driver for doing business in a particular fashion, has become a "necessary enabler" for aligning business to consumer demand. It can change the way we capture and analyze information, differentiate products and services, configure and sell existing products, crash order cycle times, introduce new products and so on. ICT can thus achieve breakthroughs in the area of supply chain design, configuration and planning, which otherwise can never be thought about. There's a concerted move to use ICT for data collection and forecasting.

Successful logistics and supply chain management depends heavily on the state of the infrastructure scenario in the country. Undoubtedly, the state of infrastructure in India has been hampering the industrial and economic performance for long. Infrastructure is the most quoted factor hindering supply chain competitiveness. This needs urgent remedy: most other

bottlenecks of regulations and capital are falling away and it's only roads, ports and airports that hold Indian logistics back. Higher fuel cost in India lead to high inland movement cost. Poor conditions and low load-bearing capacity of roads lead to more wear and tear of vehicles, and slower movement. Imposition of load restrictions, permits for inter-state movement, lengthy and cumbersome documentation, large number of public holidays make lead-times larger with higher variability. Transportation costs to go up. It requires a concerted effort by the industry and government to dismantle bottlenecks in the completion of infrastructure-related projects and creation of demand-aligned capacities in sectors of logistics and information technology. The government is planning to set up 13 inland ports at a cost of US$ 190 million. The project is to be implemented through the *public-private partnership* model. To improve the productivity of wagons, railways are going to reduce terminal detention below the national average of 16 hours. At present, 25% rakes take more than 24 hours and 50% rakes take more than 16 hours in loading and unloading. Similarly, plans have been laid down to reduce the wagon turnaround time from 5.0 to 4.5 days through effective implementation of new terminal incentive cum-engine on load scheme. By increasing the manufacturing capacity of wagons, it is likely to load 2.2m tons of freight on a daily basis and achieve the target of 800m tons of freight during the year. In March 2006, the railway ministry has announced the start up of double stacked container trains running on 'freight corridors'. This is a welcome step forward for Indian logistics. At least half-a dozen private companies have applied for various categories of licenses for rail containers.

CONCLUSION

Logistics and supply chain practices in India show that visibility is still limited. The companies have a realistic view on the advantages and risks of information sharing and so information is shared only selectively. Our study reveals that most Indian firms have aligned their logistics and supply chain objectives with their business objectives

There are many avenues for improvements for logistics and supply chain management practices in India. We are in total agreement with Tan (2002) that a massive commitment by important stakeholders is required for evolving truly efficient and effective supply chains. There is ample scope for facilities network redesign. Infra-structural bottlenecks need to be overcome. The golden quadrilateral project and initiatives by railways and ports administration in the last few months are good indicators that the concerned authorities are waking up. The golden quadrilateral road project will address some of the connectivity issues, but the larger problem is not so much a six-lane road as good roads. Ventures like BOT (Build-Operate-Transfer) and tolled roads all exist - but the essence is that law enforcement about technical standards must be made stringent. ICT implementation and utilization is low and needs to be spruced up. Forecasting based on PoS data is likely to come into use once there is more collaboration and trust, economies of scale and scope for supply chain entities and enabling-ICT are in place. Benchmarking and learning good practices should be

encouraged by government, industry associations and other stakeholders. Government should move from a regulator's role to a facilitator's role. A high degree of operational efficiency and cost efficiency will provide the much needed competitive edge to various supply chains in India.

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