

## **Multimodal Transport in India – Issues and Opportunities**

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### **Abstract**

*This research reveals attributes of India has experienced fast-paced growth over the last decade. Though the growth has primarily come from the services sector, manufacturing and exports have also risen reasonably. The Indian logistics industry spends around 14% of the GDP on different types of cost incurred in logistics operation. Logistics as a function is being increasingly outsourced by manufacturers. However, the Indian logistics sector in many ways still lags behind the global standards of performance. This is evident from the fact that India ranked as low as 46th among 155 countries in the World Bank International Logistics Performance Index. Adequate road and rail infrastructure is required to support the growth as these two major modes of transportation available in the country. Policy level changes are also necessary to turnaround other modes like inland waterways and coastal shipping. Investing in and using multiple transportation modes not only bring efficiencies in the chain but also go a long way to reduce pilferage as well as overall transportation costs.*

*Multimodal logistics serves to interconnect different modes of transport – road, rail, air, water – and therefore improve efficiency and speed of goods movement. The economic growth in India has increased the demand for practically all transport services and further underlines the importance of providing an efficient multimodal logistics infrastructure in India. Multimodal transportation, which has been proven elsewhere in the world as a solution to reduce logistics costs, is touted as an efficient way of transporting goods over long distances. It is, however, struggling to make its presence felt in India today. The lack of political will to go ahead with the economic reforms and build effective road and rail transportation systems to withstand the burgeoning trade is very much pertinent to the miserable state of multimodal logistics in India. The transport and logistics sector are fundamental to the development of a country, specially so in India where it is estimated to provide employment for 45 million people.*

*In this paper, outline the key issues, opportunities, advantages and the future outlook in the area of multimodal logistics. The intention of the paper is to highlight issues in multimodal transportation and pertaining opportunities in growing economy like India. We hope that readers find the Knowledge Paper as a meaningful point of reference.*

**Keywords:** *Multimodal logistics, MTO, Freight, Logistics Infrastructure, public-private partnership.*

## 1. Introduction

Multimodal transport refers to the transport of good from one point to another via more than one mode of transport. Multimodal Logistics can be viewed as “the chain that interconnects different links or modes of transport – air, sea, and land into one complete process that ensures an efficient and cost-effective door-to-door movement of goods under the responsibility of a single transport operator, known as a Multimodal Transport Operator (MTO), on one transport document”.

The Multimodal transport act was passed by Indian Parliament in the year 1993; the main objective of the act was to establish a liability regime for Multimodal Transport operators. The Director General of Shipping was notified as a Competent Authority under the aegis of this law. The passing of the MMTG Act paved the way for various Indian Logistic Service providers to get themselves registered with the authorities and start issuing Multi Modal Transport Document. This helped the shipper community in India in a big way as now they could ship goods from any land point India to any destination in the world under a single Contract of Carriage.

The manufacturing hubs in India are located deep in the hinterland and faraway from the gateway ports. The major manufacturing hubs are located in Punjab, Haryana, Uttar Pradesh and National Capital Region and they contribute a major part of exports. The states of Gujarat, Maharashtra and Tamil Nadu sum up the remaining part. Thus, the potential for multimodal transportation (including long and short hauls) is immense. Containerisation of goods is fast increasing and many new manufacturers and products are planning to use it. Being a convenient way to transport goods over long distances, containerisation will further boost the potential for multimodal transportation. India's international trade (both exports and imports combined) is growing at a brisk pace of 10 to 12 per cent. Industry experts predict that this trend is expected to continue in the near future and may achieve 20 million TEU per year by the year 2020. Indian Railways had opened the container transportation to private players in 2006 with the intention of bringing in more cargo to rail from road. Once the private rail operators stabilise themselves from the uncertainties in the formative years, more and more container cargo is expected to shift from road to rail, thus increasing the scope for multimodal transportation. Besides, the prestigious dedicated freight corridor project undertaken by the Ministry of Railways is expected to commence operations by 2015 and once this is through, share of rail transportation is expected to catapult further.

Multimodal logistics growth rate is based on the expectation that the new government will soon implement the GST regime and the logistics companies can optimize their operations to reduce cost and

increase their margins. With the implementation of GST, the logistics companies, which are currently forced to set up many small warehouses across multiple cities can set up just a few, big warehouses region wise and can follow the hub-and-spoke model for freight movement from the warehouses to the different manufacturing plants, wholesale outlets, retail outlets and the various POS.

## 2. Literature review

International Multimodal Transport Association defines multimodal transportation as “the chain that interconnects different links or modes of transport – air, sea, and land – into one complete process that ensures an efficient and cost-effective door-to-door movement of goods under the responsibility of a single transport operator, known as a Multimodal Transport Operator (MTO), on one transport document”. Multimodal transportation is quite popular in Europe. In addition to road and rail modes, the continent is blessed with numerable waterways crisscrossing the land mass. Therefore, it has become convenient and economical to use a combination of these modes to transport goods from the gateway ports to hinterland and vice-versa. But the situation in Indian subcontinent is different. Majority of the transportation is done by road (about 60 to 65 per cent), followed by rail (about 30 per cent). The role of waterways is very negligible as they are not spread over the entire country and instead are concentrated in a few regions. Coastal shipping on the other hand is being promoted of late as an economical mode of transport.

The transport and logistics sector are fundamental to the development of a country. In India, since the 1990s, the transportation infrastructure has undergone a significant change. While in the 90s, the demand for transport grew at an annual rate of 10%, in the last decade the demand in the transport and logistics industry grew along with the accelerating Indian GDP. This growth increased the demand for practically all transport services. Various estimates put the size of the Indian logistics market at between USD 90 to 225 Billion. In addition, the Indian logistics industry is estimated to generate employment for 45 million people.

In 2012, the World Bank published logistics performance index of countries. The Logistics Performance Index overall score reflects perceptions of a country's logistics based on efficiency of customs clearance process, quality of trade- and transport-related infrastructure, ease of arranging competitively priced shipments, quality of logistics services, ability to track and trace consignments, and frequency with which shipments reach the consignee within the scheduled time.

Containerisation is the use of standardised intermodal containers for freight transport and is the single most important development in the evolution of multimodal logistics. In India, the Container Corporation of India Limited (CONCOR) was initially the sole operator of ICDs as well as Container train operator, and currently operating about 59 terminals in the country, and includes, international, domestic, rail linked as well as road fed ICDs/ CFS. Currently the market share of CONCOR is about 85%. Ministry of Commerce is the nodal agency and Addl. Secy/Infrastructure is the chairman of the Inter Ministerial Committee (IMC). Containerised tonnage aggregated about 105.11 million MT and constituted 14.32 per cent of the total traffic handled (732.76 million MT) in 2008–09 by the Indian ports. For the major ports, this ratio is higher at around 13 per cent.

Multi-modal transport in India was a monopoly of the Container Corporation of India till 2005. With licenses being given to 13 new private players, rail trade should improve considerably. In order to encourage trade by small scale industries, Indian Railways has started a “road-railer” system where container vehicles are capable of running both on highways hauled by trucks and on rail. In 1998-99, the Konkan Railway (one of the railway zones in South-Western India) pioneered the 'roll-on, roll-off' ('RO-RO') concept between Mumbai (Kolad) and Goa (Verna). Privately owned trucks are loaded with their goods which are driven on to a rake of flat cars and are carried (trucks and their cargo) to the destination.

The World Economic Forum and Confederation of Indian Industry (CII) host the India Economic Summit in New Delhi from 4 to 6 November 2014. The government is committed to achieving a target of building 30 kilometres of roads and highways a day within two years, taking the rate up from three kilometres a day currently. The government is working to solve problems associated with land acquisition, creating a multi-modal transport policy and reducing the cost of capital to make investment in infrastructure viable internationally, confidence in India is high; country needs to ensure predictability in policy, process and growth

### **3. Advantages of Multimodal Transportation**

The economic growth in India has increased the demand for practically all transport services and further underlines the importance of providing an efficient multimodal logistics infrastructure in India. MMLPs can help in saving of cost in transportation. In other words these services help in the reduction of costs which are incurred in the transportation of goods. This is possible because of use of right modal choice for the movement. As mentioned earlier in the report, logistics aims to achieve reduction of inventory, economy of freight, reliability and consistency in delivery performance and minimum damage to

products. Learning from the worldwide state of the art practices would help in reducing costs, increase the overall efficiency within the system and reduce the environmental impacts of logistics. Association of Multimodal Transporters of India (AMTOI) says that the biggest advantage for a shipper in using a multimodal transport operator is that they get a single document for their shipments. "This means a single responsibility and uniform liability regime".

**i) Minimises time loss at trans-shipment points:**

Multimodal transport, which is planned and coordinated as a single operation, minimises the loss of time and the risk of loss, pilferage and damage to cargo at trans-shipment points. The multimodal transport operator maintains his own communication links and coordinates interchange and onward carriage smoothly at trans-shipment points. This avoids documentation and verification time from one agency to other. Also advance planning can be done by MTO because knowing status from initial stages.

**ii) Provides faster transit of goods:**

The faster transit of goods made possible under multimodal transport reduces the disadvantages of distance from markets and tying-up of capital. In an era of Globalization the distance between origin or source of materials and consumer is increasing thanks to the development of multimodal transport.

**iii) Reduces burden of documentation and formalities:**

The burden of issuing multiple documentation and other formalities connected with each segmented of the transport chain is reduced to a minimum.

**iv) Save cost:**

The savings in costs resulting from these advantages are usually reflected in the through freight rates charged by the multimodal transport operator and also in the cost of cargo insurance. As savings are passed onto the consumer, demand increases. The inherent advantages of multimodal transport system will help to reduce the cost of exports and improve their competitive.

**v) Single window operation:**

The consignor has to deal with only the multimodal transport operator in all matters relating to the transportation of his goods, including the settlement of claims for loss of goods, or damage to them or delays in delivery at destination.

#### 4. Key Issues in Multimodal Logistics

Logistics in India is dominated by a large number of fleet operators and warehouses and therefore small capacities and poor technologies. In addition, poor maintenance of equipment and facilities including roads result in low average trucking speed of 30–40 kmph, overloading of trucks, inefficient turnaround times at ports and airports and poor intermodal connectivity. All these issues hinder an efficient multimodal logistics network around the country.

Multimodal transportation, which has been proven elsewhere in the world as a solution to reduce logistics costs, is touted as an efficient way of transporting goods over long distances. It is, however, struggling to make its presence felt in India today. It faces a myriad of constraints in enabling smooth and seamless operations and is left at the mercy of reluctant regulatory and bureaucratic mechanisms.

The Multimodal Transportation of Goods Act 1993 was enacted with the purpose of developing this segment of logistics and regulating the MTOs. But industry experts consider that the Act has many lacunae that render it inefficient in achieving its objectives. “There are many shortfalls in the Multimodal Transportation of Goods Act. Adequate logistics infrastructure and policy level changes in this direction can go a long way in providing competitive advantage to multimodal transportation in India.

#### Road Freight

- ❖ Poor quality of roads and network connectivity.
- ❖ Goods vehicle run only 250-300 km a day in India as compared to 800-1000 km in developed countries (Sanyal, 2006b).
- ❖ Inter-state check posts, surprise checks and unauthorized hold ups on highways (some due to security reasons while others are to establish the authenticity of the cargo as declared) create bottlenecks.
- ❖ Entry taxes into cities for goods also create procedural bottlenecks.
- ❖ National highways constitute only about 2% of the road network but carry about 40% of total traffic resulting severe conjunctions.
- ❖ Stoppage of vehicles at State border check posts are a major cause of delays. It is estimated that 40% of the time lost are due to these stoppages.
- ❖ No stringent requirement or regulations for starting a trucking business
- ❖ Large number of small and unorganised players, with no industry consolidation and intense competition.

### **Rail Freight**

- ❖ Freight tariffs in India are among the highest in the world.
- ❖ Rail freight lacks reliability and track ability.
- ❖ Minimum chargeable distance.
- ❖ Critical process of documentation and refunds.
- ❖ In privatizing the operations of container traffic through rails, new entrants are expected to face serious problems. Because of limited manufacturing capacity for producing wagons, these firms will have to import wagons at high cost.
- ❖ The tariff structure and revenue sharing is still a hindrance for public-private partnership projects to succeed in infrastructure development.
- ❖ Monopolistic approach in various operational issues like weighment etc.
- ❖ It is deficient in terms of quality of operations, speed, and customer orientation.

### **Air Freight**

- ❖ There is absence of integrated cargo infrastructure;
- ❖ There are inadequacies in gateway and hinterland connectivity through rail and road;
- ❖ There is a need for streamlining of Customs procedures in air cargo;
- ❖ Less connectivity to tie two cities by cargo;
- ❖ There is a need of technological up-gradation of cargo handling processes;
- ❖ There is a need to formulate a performance based service.
- ❖

### **Port Freight**

- ❖ There are inefficiencies in berthing, and delays in loading and unloading. i.e. high turnaround time of vessels. This causing low productivity of operations attributed mainly to slow evacuation of cargo leading increasing transaction costs & losses of competitiveness.
- ❖ There are delays in co-ordination between ports and the Customs authorities.
- ❖ There is poor hinterland connectivity and poor port- and land-side infrastructure and outdated equipments.
- ❖ Inadequate depth at ports causing non placement of large vessels for berth.
- ❖ Navigation channel restrictions do not allow bigger vessels to be berthed keeping these key issues in mind, some of the areas of multimodal logistics that gain importance in Indian market include costs, cold chain, containerisation, ancillaries like ICDs, CFSs and dry ports and integrators like logistics parks.

- ❖ Coordination across various government agencies require approval from multiple ministries and is a road block for multi modal transport in India (e.g., ports, roads, railways, container freight operations etc. are all managed by different ministries in the Government of India. At the firm level, the logistics focus will have to move towards reducing cycle times in order to add value to their customers. These are few of the issues one need to take account before the logistics industry can boom significantly in India.

## Costs

The Indian logistics market suffers from higher costs due to poor infrastructure, mentioned in the previous section. Analysis suggests that poor logistics infrastructure costs the economy an extra USD 45 billion or 4.3 per cent of GDP each year. Two-thirds of these costs are hidden i.e., not generally regarded as logistics costs. These hidden costs include theft and damage, higher inventory holding costs, facilitation and transaction costs.

## 5. Opportunities in Multimodal Logistics

Despite these issues, logistics has a bright future in India. India has the geographical advantage of being well positioned to emerge as a hub for a variety of products. However, for a strategic growth in this industry, longstanding issues like abolition of octroi levy, improvement in road and rail infrastructure, creation of modern warehouse facilities and streamlining of customs formalities need to be improved. Provision of value added service, which are basically unique and add efficiency and effectiveness to the basic service capabilities of the firm. These value added services have evolved due to forced innovation due to differentiated offering, for growing and surviving in competitive markets. End of life regulations of vehicles also need to be implemented to encompass cargo vehicles and ensure better efficiency and reliability.

As the central government is keen on increasing power generation capacity in India, many power plants are being set up across the country. From industrially-rich Gujarat to the remote Arunachal Pradesh, power plants are being set up in almost every state in India. As part of this, there is immense scope for moving power plant equipment through multimodal transportation. Mostly, roads and inland waterways are used for the purpose. "There is big potential over the next ten years for moving ODC by multimodal transportation, National Maritime Development Program (NMDP) with an investment of USD 11 Billion would address the challenges of the growing international traffic demand of the country along with developing the port facilities at par with world class standards. There are plans of upgrading NMDP with



Maritime Agenda 2010-20. Foreign investment is an important way to attract infrastructure development. 100% FDI under the automatic route is permitted for all logistic services except for courier services from which FDI up to 100% subject to FIPB approval, while FDI up to 49% under the automatic route is permitted for air transport services, including air cargo services. The east coast is expected to contribute to the development of non major ports with new development including the ports at Dhamra, Gopalpur, Gangavaram, Kattupalli and Karaikal, some of which are being developed in PPP mode



Fig. 01 Future outlook of Multimodal Logistics

Multimodal Logistics has a bright future in India. India has the geographical advantage of being well positioned to emerge as a hub for a variety of products. However, for a strategic growth in this industry, longstanding issues like abolition of octroi levy, improvement in road and rail infrastructure, creation of modern warehouse facilities and streamlining of customs formalities need to be improved. Provision of value added service, which are basically unique and add efficiency and effectiveness to the basic service capabilities of the firm. These value added services have evolved due to forced innovation due to differentiated offering, for growing and surviving in competitive markets. End of life regulations of vehicles also need to be implemented to encompass cargo vehicles and ensure better efficiency and reliability.

## 6. Conclusion and Recommendations

A country's economic growth depends on the availability of a robust and seamless multimodal logistics infrastructure. Transportation, warehousing, handling of material, inventory management and order processing are the major logistics activities, which impact the customer cost and operation. The speed of the movement of goods depends to a great extent on the various modes of transportation like rail, road, air, and sea. An integrated approach to logistics i.e. multimodal logistics helps in reducing costs and enhancing the customer service level.

- There should be continued focus on the growth of road network to improve last-mile connectivity.
- Development and integration of multimodal logistic parks to the pan- India connectivity will be improve storage facilities, reduce transport costs, and enhance efficiency of the entire logistics network of the country.
- A McKinsey study recommends instituting a national level policy to shape the vision of India's logistics infrastructure and define the blueprint of infrastructure development in order to achieve holistic and balanced multimodal mix. In the air freight sector, in order to meet the growing demand and improve efficiency of existing facilities, it is essential to lay down a comprehensive policy framework, governing air cargo operations in the country. On an operational level, there is a clear need for improvement to the off-airport facilities for cargo processing, handling for clearance and customs procedures.
- Large scale projects such as the development of large container terminals should be integrated with hinterland connectivity projects and emphasis should be placed on last-mile connectivity network. Privatisation of container operation by Indian Railways should be continued.
- Along with growth and infrastructure development, emphasis should be paid on sustainability and use of strategies and technologies that reduce carbon footprint and toxic air emissions. Technologies that offer promise as effective means to achieve a reduced carbon footprint include alternative vehicle technologies like electric vehicles and alternative fuel technologies like LNG and bio fuels should be considered for the short- and long-term sustainability. LNG terminals successfully developed in Kochi and Dahej can serve as examples in the port sector
- Attention of government on war footing is to plug the infrastructure gaps. As government alone cannot meet these objectives, it needs to encourage more and more private participation through PPP route.
- Introduction of the uniform Goods and Services Tax (GST) to reorganize warehousing system in India and remove differential state-level taxes. As the GST bill still pending with parliament approval and Modi government should clear the bill as early as possible to push growth in sector.

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