MULTIMODAL LOGISTICS IN INDIA: AN ASSESSMENT

KNOWLEDGE PAPER
# MULTIMODAL LOGISTICS IN INDIA: AN ASSESSMENT

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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. 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 we are ranked as low as 46th among 155 countries in the World Bank International Logistics Performance Index.

PHD Chamber in association with European Business and Technology Centre (EBTC) is bringing out this Knowledge Paper presenting various aspects of Multimodal logistics sector. I sincerely hope that this report will benefit all stakeholders.

I wish the conference all the success.
It has now become a known fact that logistics infrastructure is crumbling under the weight of the ongoing economic development in the country and the process of beefing up needs to be expedited on war footing. 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.

I sincerely hope that this report will be useful for all and I wish all the success to the conference.
The transport and logistics sector is of prime importance for the development of a country. Since the 1990s, the transportation sector of India has undergone a significant change. Thus, to sustain and drive economic growth, the movement of goods associated with a mature economy will require a vastly superior service sector as well as physical logistics infrastructure.

I hope that this knowledge paper will benefit all the participants and relevant stakeholders.

PHD Chamber of Commerce and Industry operates through various Expert Committees / Task Forces like the Task Force on Logistics Management. The objective of this task force is to sensitise, suggest solutions, and to take up the issues of the industry with appropriate authority at the centre and states governments.

PHD Chamber in association with European Business and Technology Centre (EBTC) is pleased to bring out a Knowledge Paper to highlight the current scenario of Multimodal/Intermodal transportation sector of the country.

I am sure that the Conference will be huge success with the guidance and support of all the stake holders.

Mr. Saurabh Sanyal
Executive Director
PHD Chamber of Commerce and Industry

Dr. Ranjeet Mehta
Senior Secretary
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India is one of the largest economies in the world and a major emerging market that has a young population, rising investment rates, large domestic demand and globally competitive firms. Even though, the unexpected global crisis has taken its toll on the economy, it is predicted that India will become the third largest economy by the year 2025 after China and the USA and has awakened the interest of significant investors.

The transport and logistics sector are fundamental to the development of a country, especially so in India where it is estimated to provide employment for 45 million people. 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. The Planning Commission of India has stressed that focus needs to be given to ‘integrated transport solutions’ in preference to individual ‘transportation’ and ‘distribution’ services.

In this paper, EBTC and PHD outline the key issues, opportunities, best practices and the future outlook in the area of multimodal logistics. The intention of the paper is to serve as a backdrop to the conference, highlight issues and foster interaction at the conference. We hope that readers find the Knowledge Paper as a meaningful point of reference.
MULTIMODAL LOGISTICS IN INDIA: AN ASSESSMENT

Introduction

Logistics facilitates in getting products and services as and when they are needed and desired to the customer. It also helps in economic transactions, serving as a major enabler of growth of trade and commerce in an economy. The American Council of Logistics Management defines logistics as “the process of planning, implementing and controlling the efficient, cost effective flow and storage of raw materials, in-process inventory, finished goods and related information from point of origin to point of consumption for the purpose of conforming to customers’ requirements”.

In order to achieve these objectives the functionality of logistics include processing the orders received from the customers, inventory planning and management, warehousing, transportation and packaging.

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”.

Overview and Trends

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.

In a recent study by McKinsey, transport (along with affordable housing) was identified as the most capital intensive sectors in India, needed huge investments over the next several decades to sustain rapid urbanisation and growth of the Indian cities. Since freight forms an important part of the transport, the role of logistics and freight assumes importance.

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.

Objectives of organised logistics are
- Reduction of inventory
- Economy of freight
- Reliability and consistency in delivery performance
- Minimum damage to products, and quicker response.

(Ref: CII, EBTC, McKinsey)
Growth

According to the Planning Commission, over the past decade, the Indian logistics industry is witnessing a major transformation and this means an increased focus on containerisation, and constant technological upgradation of production. The Planning Commission also suggests that focus needs to be given to ‘integrated transport solutions’ in preference to individual ‘transportation’ and ‘distribution’ services.

It is estimated that while outsourced logistics accounts for 54% of total logistics spending in India, organized players have a share of only 10%. In road transportation, which accounts for the biggest portion (36%) of logistics spending, 74% of operators are small-time players owning a single vehicle. In outsourced warehousing, 92% of players are from the unorganized sector. Even among the organized logistics players, few have offerings across multiple modes (air, water, rail and road) and services (transportation, warehousing and value-added services such as packaging, cold chain and customs clearance).

(Ref: Planning Commission, Wharton, CONCOR)
According to Ministry of Civil Aviation, the forecast of air cargo traffic from 2011-12 to 2031-32, domestic air cargo will grow at the rate of 11.8% in the 12th Five Year plan and 11.3% in the 13th Five Year plan. Similarly, the international air cargo will grow at the rate of 13.4% in the 12th Five Year plan and 12.6% in the 13th Five Year plan. In the port sector, statistics from the Indian Ports Association predict a cargo forecast growth from 739 Million tons in 2011-12 to 1595 Million tons in 2025-26.
Performance

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.

Overall (1=low to 5=high) in India was last reported at 3.12 in 2010. In the worldwide list, India was ranked 46th. The numbers are shown in chart below.

![Logistics Performance Index - India](Ref: Tradingeconomics.com, World Bank)
Key Issues in Multimodal Logistics

Road Freight
- Poor quality of roads and network connectivity
- 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 trackability
- 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;
- 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
- 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 equipment
- 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.

**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.

**Containerisation**

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.

Container Traffic Handled by Indian Ports: (Both EXIM and Domestic)

- 2009- 6585 (in 000 TEUs, twenty-foot equivalent units)
- 2010- 6865 (in 000 TEUs)

(Ref: McKinsey, UNESCAP, Planning Commission)
Container Traffic handled by Indian Railways (IR) (Both EXIM and Domestic)

- 2008- 2.8 million TEUS
- 2009- 2.9 million TEUS
- 2010- 3.2 million TEUs

Cold Chain

Cold Chain is a critical component of the logistics chain in order to preserve perishable items and normally consists of pre-cooling facilities, cold storages, refrigerated carriers, and warehousing. A streamlined, well maintained cold chain helps to reduce costs, improve product integrity, increase customer satisfaction, reduce wastage and returns of expired stock. The total cold chain market in India is worth Rs. 21,375 million, which is equivalent to USD 475 million, of which the biggest chunks are emerging segments including ready-to-cook, ready-to-eat and ready-to-serve foods, followed by the ice-cream industry.

Dry Ports/ICDs

An Inland Container Depot (ICD) also referred to as Dry Ports are an effective way for handling and temporary storage of containerized cargo as well as empty containers. They are usually located where different modes of transport networks intersect, thereby reducing transport costs and transit time, and spurring investment in the surrounding areas. ICDs facilitate connectivity to the hinterland by making port services closer to them.

There are 133 functioning ICDs/CFSs against 230 letters of intent issued since 1991 by the Department of Commerce. Out of these, 61 are privately owned, 15 are owned by the state governments, 30 by CWC, and 27 by CONCOR.

Multimodal Logistics in India: An Assessment
Logistics Parks

Multimodal Logistics Park provide all types of transportation facilities at a palace for the end user or defined as a rail, road based inter-modal traffic handling facilitation complex comprising container terminals, bulk/break-bulk cargo terminals, warehouses, banking and office space and facilities for mechanized handling, inter-modal transfers, sorting/grading, cold chain, aggregation / desegregations etc. to handle freight traffic. The key components of a Multimodal Logistics Park are warehousing, transport and value-added services. The concept of multimodal logistics parks is relatively new in the country.

Benefits of Multimodal Logistics Parks include:

- 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.
- One of the main features of MMLP is that it reduces the transit time of the goods. Thus reducing the inventory cost both for logistics operators as well as for the ultimate user of the transport mode.
- It helps in the proper utilization of the assets as the transit time is less and the goods vehicles and the other hardware are free to use for the other business. Thus the per unit cost of the transportation of goods can be reduced considerably.
- Helps in the balanced growth of all the modes of transport
- Helps in optimal modal choice
- Helps in proper utilization of assets like railways or other modes of transport.

(Ref: Planning Commission, Vishwakarma)
Third-Party Logistics (3PL)

In logistics, considerable quantities of materials are required to be transported and stored at various locations. Raw materials and components are to be moved over long distances from vendor supply points to production centres. These materials have to be stored for some time as raw materials and later as finished goods. Finished goods need to be transported to the point of consumption. With so much to be done, the critical reasons why companies outsource logistics activities are:

- Better focus on core competencies
- Cost saving resulting from better management of supply chain
- Cross pollination of better available practices
- Wider and better geographical coverage by access to specialist world class capabilities
- Improved re-engineering benefits
- Lesser internal resources

The third party logistics market is still in its nascent stages in India, facing issues such as lack of infrastructure (viz, warehouses and cold storage chains), lack of economies of scale due to unorganized private truck operators, and lack of efficient processes and automated, technologically advanced monitoring systems.

Technologies and Green Logistics

“Green Logistics” refers to supply chain management policies and strategies to reduce the environmental/energy footprint of freight and focuses on material handling, waste management, packaging and transport.

Intelligent Transport Systems (ITS) are advanced applications of Information and Communication Technologies (ICT) in transport, to enable users to be safer, more coordinated, better informed and make ‘smarter’ use of transport networks. ITS integrate telecommunications, electronics and information technologies.

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(Ref: CII, KPMG)
Applications of clean technologies in logistics can be an effective way to reduce carbon footprint, help reduce dependency on fossil fuels and reduce air and noise pollution. Some of the ways include:

- **Information Management Systems**
  - Cold Chain logistics
  - Freight Operation Information System (FOIS)
  - Electronic Data Interchange (EDI), for information flow between ports, Customs, shipping lines, and users

- **Green Cold Chain practices for energy savings**
  - Efficient building design using eco-friendly & recycled materials
  - Efficient thermal insulation
  - Energy efficient refrigeration
  - Waste heat recovery
  - Use of renewable energy

- **Automated Container Transport System**
  - Improved hinterland and intermodal connectivity

- **Intelligent Transport Systems (ITS)**
  - Real-time monitoring of trucks and trains (GPS), smart ticketing (reservation, payment and invoicing systems) and management of connections with other modes of transport (fleet and parking management)

- **Environmental design in rail including hybrid trains**

**Best Practices**

Having looked at the important aspects of multimodal logistics with a focus on the Indian logistics market, we finally summarise the worldwide best practices. 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. The projects or strategies mentioned below strived to achieve some or all of these in various ways and would serve as a learning lesson as the Indian logistics market builds up momentum to take the country forward in this century.

**SmartWay**

SmartWay is an US Environmental Protection Agency (EPA) driven initiative that was launched in 2004 as a series of strategies to reduce transport emissions by creating incentives to improve supply chain fuel efficiency. It functions as collaboration between freight shippers, carriers, and logistics companies to voluntarily achieve improved fuel efficiency and reduced emissions from freight transport. SmartWay strategies include, among other things wind deflectors to reduce aerodynamic drag, fuel-efficient tires and tire inflation systems to reduce...
reduce rolling resistance, idle reduction equipment to power and cool the cab while the truck is not in motion, and use of hybrid powertrain systems, especially for urban operation trucks.

CIVITAS
The CIVITAS Initiative ("City-Vitality-Sustainability", or "Cleaner and Better Transport in Cities") was launched in 2002 to introduce measures and policies towards sustainable urban mobility. The goal of CIVITAS is to achieve a significant shift in the modal split towards sustainable transport, an objective reached through encouraging both innovative technology and policy-based strategies. Several of the projects under this initiative were in the logistics sector, encourage the use of cleaner freight vehicles and are developing solutions to better coordinate freight logistics, including efficient goods distribution, the PIPE$NET system for city logistics, and distribution centre for perishable goods.

Combi-Road
Combi-Road is a new concept from the Netherlands for the surface transport of containers and uses specially designed tracks which can be constructed as separate roads or as extra lanes alongside existing motorways. The containers are pulled on semi-trailers by unmanned automatically controlled electrical vehicles.

SMARTFREIGHT
SMARTFREIGHT (Smart freight transport in urban areas) was a project aimed to make urban freight transport more efficient, environmentally friendly and safe through smarter use of the distribution networks and improved delivery and return-load systems. The basic idea was to integrate urban traffic management systems with freight management and on-board systems.

Clean Urban Transport for Europe (CUTE)
The European Commission undertook the Clean Urban Transport for Europe (CUTE) project to develop and demonstrate an emission-free and low-noise transport system, including the accompanying hydrogen production and refuelling infrastructure. Between 2003 – 2005 twenty seven innovative, hydrogen-powered, fuel cell buses were built and placed in the public transport fleets of nine European cities, in seven different countries. The multimodal freight theme incorporates the movement of freight in one loading unit or road vehicle, which uses successively two or more transport modes without goods handling during modal changes. Multimodal passenger transport covers the use of different modes in a door-to-door journey chain, with the focus on modal integration in a seamless journey.

Market Opportunities
- 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. The Maritime Agenda outlines 41% investments to the East Coast ports.

**Initiatives**

Gradually, the Indian logistics industry is seeing changes that are streamlining the logistics value chain. Some of the initiatives that are being implemented or are on the anvil and are expected to make a significant impact to the state of multimodal logistics in India are:

- Several initiatives in the railways including introduction of Double Stack container rains to Pipavav and Mundra Ports. The railways industry is being gradually opening to private players, in container train operations. The Private Freight Terminal Scheme has been launched by the Railways for setting up of both containerized and non-containerized cargo terminals.
- Introduction of the uniform Goods and Services Tax (GST) to reorganize warehousing system in India and remove differential state-level taxes
- Implementation of the Port Regulatory Authority Bill, which seeks to regulate tariff rates at all major and non-major ports and to monitor performance standards of facilities and services offered at all ports in India
- Central Warehousing Corporation (CWC) to develop warehousing facilities at a goods terminal. CWC has built a state-of-the-art warehouse with a capacity of 15,000 tonnes and provided ancillary facilities in the integrated goods shed complex of the White Field Satellite Goods Terminal in Bangalore.
- Dedicated freight Corridors which are being implemented will see a major boost in implementation of ICDs/CFS. As part of the development of Western Dedicated Freight Corridor (DFC) between Delhi and Mumbai, Indian Railways have proposed development of Freight Logistic Parks at six locations to enhance rail based traffic along the DFC. These locations include Navi Mumbai, Vapi, Ahmedabad, Gandhidham, Jaipur and the National Capital Region of Delhi.
- Government of Gujarat has identified six suitable locations, compared to three locations as identified by the Ministry of Railways, for setting up Logistic Hubs in state. These short-listed locations include Dahej, Hazira, Palanpur and Surendra Nagar.
- The Viability Gap Funding Scheme is extended for public-private partnership (PPP) projects to set up modern storage capacity including cold chain storage facilities. In addition, the National

... (Ref: UNESCAP, DMIC, CONCOR, Indian Railways)
Horticulture Mission has sanctioned 24 cold storage projects with a capacity of 140,000 metric tons storage capacity

- Fresh and Healthy Enterprise Limited (FHEL) is a fully owned subsidiary of CONCOR and has been instituted to create pan-India cold storage infrastructure and end to end cold chain solutions

**Way Forward**

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.

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.

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, long-standing 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.

(Ref: CII, NTDPC)
Future Outlook

Ocean Freight
- Maritime Agenda 2010-20 objectives will be a key driver
- Growth of non-major ports, containerisation and east coast ports
- BOT terminals opened for international bidding

Rail Freight
- Rising investment in the rail will fuel growth in allied industries
- Wagon manufacturing, port handling equipment, railway electrification systems and construction companies key areas

Air Freight
- Tier-2 cities next cargo centres
- Development of 25 greenfield airports in Tier-2 and Tier-3 cities
- Modernization of 35 non-major airports

Trucking
- About 110 new logistics parks are expected to be operational
- Spread over approximately 3,500 acres at an estimated cost of USD 1 Billion

3PL Services
- Companies currently outsource an estimated 52% of logistics, and 3PL represents only 1% of logistics cost – huge potential
- Revenue expected to increase from USD 1.2 Billion (2010) to USD 4 Billion (2015)

Recommendations

- 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.

- 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 improve storage facilities, reduce transport costs, and enhance efficiency of the entire logistics network of the country.

- 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.

- There is an urgent need for state-of-the-art technologies such as Automatic Storage and Retrieval System (ASRS), Elevated Transfer Vehicle (ETV) to be deployed in the cargo terminals. Additionally, Radio Frequency Identification devices and GPS tracking should be

(Ref: McKinsey, Ministry of Civil Aviation, UPES, KPMG)

Creation of a central body to integrate and coordinate transport services of various modes will be a key strategy in development of a seamless integrated transport and logistics system.
implemented for real-time monitoring and better fleet management. Similarly, information management systems should be implemented on a wider level.

- 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 biofuels 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.

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Acknowledgements

This report is derived from an extensive secondary literature survey of the multimodal logistics in India. The primary aim of the report is to set the context for understanding the current state and future evolution of the sector in the country.

The report was authored by Dibyendu Sengupta, Transport Specialist at European Business and Technology Centre, New Delhi. He has 15 years of experience in various aspects of transport including traffic and transport, sustainability, road safety and comprehensive planning.

The report was reviewed and inputs were provided by Dr. Ranjeet Mehta, Head and Senior Secretary, Infrastructure, Energy, Logistics, Housing and Urban Development Sectors at PHD Chamber of Commerce and Industry, New Delhi. He has over 26 years of experience in Public Policy, leadership development, public relations, organizational capacity building and Strategic Management.
The European Business and Technology Centre (EBTC) supports EU companies and researchers on their market entry to India by offering long-term hands-on support with a myriad of services. With offices in India’s metros of New Delhi, Mumbai, Bengaluru and Kolkata, EBTC is well placed to offer complete end-to-end solutions to companies who want to enter and flourish in the Indian market.

EBTC’s efforts focus on 4 key sectors – Biotech, Energy, Environment and Transport – all of which offer enormous scope for closer EU-India collaboration, be it in business, science or technology. As the connecting platform between business, research, and government, EBTC ensures that EU players are well networked with a solid base from which to develop their venture.

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PHD Chamber of Commerce and Industry is 108 years old proactive and dynamic multi-State apex organization working at the grass-root level and with strong national and international linkages. PHD Chamber serves 12 North and Central Indian States along with Bihar, Jharkhand and Chandigarh, with a membership of about 48,000. PHD Chamber acts as a catalyst in the promotion of industry, trade and entrepreneurship. PHD Chamber, through its research-based policy advocacy role, positively impacts the economic growth and development of the nation.

PHD Chamber organises entrepreneurial development training programmes and through the support of its members, regularly contributes towards relief and rehabilitation of the victims of natural calamities and disasters. In keeping with the motto adopted ‘Ethics is Good Business’, PHD Chamber also confers Awards for Excellence annually.

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PHD Chamber of Commerce and Industry
is 108 years old proactive and dynamic multi-State apex organization working at the grass-root level and with strong national and international linkages. PHD Chamber serves 12 North and Central Indian States along with Bihar, Jharkhand and Chandigarh, with a membership of about 48,000. PHD Chamber acts as a catalyst in the promotion of industry, trade and entrepreneurship. PHD Chamber, through its research-based policy advocacy role, positively impacts the economic growth and development of the nation.

PHD Chamber organises entrepreneurial development training programmes and through the support of its members, regularly contributes towards relief and rehabilitation of the victims of natural calamities and disasters. In keeping with the motto adopted ‘Ethics is Good Business’, PHD Chamber also confers Awards for Excellence annually.

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