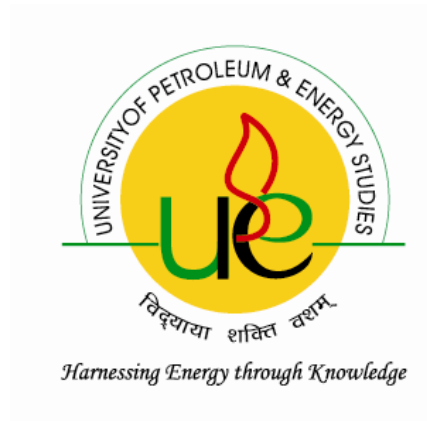


# **UNIVERSITY OF PETROLEUM & ENERGY STUDIES DEHRADUN**



Dissertation Report

On

**“Problems In Multi-Modal Transportation: affecting the  
Exports of India”**

**Under the Guidance of:**

**Prof. Aman Dua  
Logistics & Supply Chain Department, CoMES, UPES**

**Submitted by:**

**Saket Srivastava  
R600213041  
MBA (LSCM) SEM IV  
Batch 2013-15**

## **DECLARATION**

I, Saket Srivastava, MBA-L&SCM (SEM 4), College of Management & Economic Studies, University of Petroleum & Energy Studies, hereby declare that the Dissertation Report titled “Problems of Multi-Modal Transportation: affecting the exports of India” is a thesis report submitted in partial fulfillment of Masters of Business Administration (Logistics & Supply Chain), and an original work carried out by me availing the guidance of my mentor.

This report has no resemblance with any other report to any University or Institute published Earlier.

## **CERTIFICATE OF ORIGINALITY**

This is to hereby state that this report is very original in every sense of terms and conditions and it carries a sense of credibility and belief and that no shortcuts have been taken and I remained both rigorous and attentive during the research work. I have put in my level best to keep this work as informative and precise as possible.

It may also state here that during the preparation of this report some information has been taken from a gamut of professionally shared information and knowledge, a detailed description of which has been mentioned in the references chapter of this report.

Dated: 15/4/2015

## ACKNOWLEDGEMENT

*“It is not possible to prepare a project report without the assistance & Encouragement of other people. This one is certainly no exception.”*

On the very outset of this report, I would like to extend my sincere & heartfelt obligation towards all the personages who have helped me in this endeavor. Without their active guidance, help, cooperation & encouragement, I would not have made headway in the project.

I am ineffably indebted to **Mr. Aman Dua** for conscientious guidance and encouragement to accomplish this assignment.

I extend my gratitude to College of Management & Economic Studies, University of Petroleum & Energy Studies (UPES), Dehradun for giving me this opportunity.

I also acknowledge with a deep sense of reverence, my gratitude towards my parents and member of my family, who has always supported me morally as well as economically.

At last but not least gratitude goes to all of my friends who directly or indirectly helped me to complete this project report.

Any omission in this brief acknowledgement does not mean lack of gratitude.

Saket Srivastava  
MBA-LSCM  
CoMES, UPES

## **EXECUTIVE SUMMARY**

The aim of this report is to clarify the issues and issues of Multi Modal Transportation in India and its impact on Export patterns.

The report is fundamentally of a Dissertation Project and thus took after an illustrative method of examination strategy by securing data from optional sources.

The principal section of this report manages the Introduction of the Multi-modular transportation with worldwide and Indian Perspective. Additionally the pattern of MMT and the related issues with it. India Being a creating nation has extremely conspicuous issues identified with MMT.

The following section clarifies the different MMT Issues and related impact it has on the vehicle situation of India. Issues incorporate The Infrastructural, operational, specialized, budgetary, administrative and regulation system that impact the vehicle structure of India as entirety.

Section 4, is identified with fare insights of India beginning with the history to present situation. A pattern investigation is done on the fare measurements of most recent 5 years (2010-2014) to recognize the fare pattern and how the MMT issues in India is identified with pattern of fares.

The Results of the Thesis, and the examination done gave the aftereffect of between connection of the diverse issues of MMT in India. Likewise the pattern of fares is dissected.

The last section is Recommendations, which gives distinctive methodologies to lessening the MMT issues in India.

# TABLE OF CONTENTS

- Problem Definition
- Research Objective
- Research Methodology
- Literature Review
- 1. Introduction
- 2. Multi-Modal Transportation
  - 2.1 Multi-Modal Transportation : Global Scenario
  - 2.2 Multi-Modal Transportation : Indian Scenario
- 3. Issues of Multi-Modal Transportation
  - 3.1 Infrastructural Issues
    - 3.1.1 India's Current Logistics Infrastructure Plan
  - 3.2 Regulatory Issues
    - 3.2.1 MMT Act, 1993
    - 3.2.2 Private Freight Terminal Policy
    - 3.2.3 Draft Coastal Shipping Policy
    - 3.2.4 Infrastructural
    - 3.2.5 Financial incentives including subsidies
    - 3.2.6 Resolving manpower issues
    - 3.2.7 Promoting modal shift
    - 3.2.8 Database and communication infrastructure
    - 3.2.9 Cabotage Policy
    - 3.2.10 Impact of GST
    - 3.2.11 Foreign Direct Investment
  - 3.3 Technical Issues
    - 3.3.1 Cloud Computing and software-as-a-service (SaaS)
    - 3.3.2 Global Positioning System (GPS)
    - 3.3.3 RFID
    - 3.3.4 ERP
  - 3.4 Financial Issues
  - 3.5 Operational Issues
  - 3.6 Institutional Issues
- 4. Export Statistics
  - 4.1 India's Export History
- 5. Trend Analysis of Exports (2010-14)
- 6. Results
- 7. Conclusion
- 8. Recommendations
- 9. References

## **ABBREVIATIONS**

1. SCM : Supply Chain Management
2. MMT : Multi-Modal Transportation
3. EXIM : Export & Import
4. DGFT : Directorate General of Foreign Trade
5. MoC&I : Ministry of Commerce & Industry
6. GOI : Government of India
7. DoR : Department of Revenue
8. GPS : Global Positioning System
9. RFID : Radio Frequency Identification
10. ERP : Enterprise Resource Planning
11. GST : Goods & Service Tax
12. MTO : Multi-Modal Transport Operator
13. US : United States
14. EU : European Union
15. ISO : International Standards Organization
16. CFD : Container Freight Station
17. ICD : Inland Container Depot
18. USD : US Dollar
19. SaaS : Software-as-a-service
20. GDP : Gross domestic Product
21. NHAI : National Highway Authority of India
22. CONCOR : Container Corporation of India Limited
23. DGS : Directorate General of Shipping
24. PPP : Purchasing Power Parity
25. PPP : Public Private Partnership
26. CWC : Central Warehousing Corporation
27. PVT : Private Terminal
28. AMTOI : Association of Multi-Modal Transport Operators of India
29. MTD : Multi-Modal Transport Document
30. DFC : Dedicated freight Corridor
31. ABS : Analog Braking Signal
32. DC : Distribution Centre's
33. MoF : Ministry of Finance
34. LR : Lorry Receipt

## **LIST OF FIGURES, TABLES, GRAPHS AND MATRIX**

### LIST OF FIGURES

Page no.

Figure 1: India's Logistics Infrastructure comparison

Figure 2: Traffic Share

Figure 3: 7 Corridors Connectivity

Figure 4: Traffic share of Corridors

Figure 5: Freight Transportation in India

Figure 6: Inefficiencies of Logistics system in India

Figure 7: Transport mode cost in India

Figure 8: Freight Traffic Growth

### LIST OF TABLES

Table 1: Literature Review

Table 2: Trend Analysis of Exports

### LIST OF GRAPHS

Graph 1: Export Statistics (2010-14)

Graph 2: Export Growth Rate (2010-14)

Graph 3: Trend Values of Exports (2010-14)

### LIST OF MTRIX

Matrix 1: Interrelation between MMT Issues



## **PROBLEM DEFINITION**

The study focuses on the issues of Multi-Modal Transportation and its effect on export statistics.

### Business Problem

- The MMT Scenario in India: Not been Focused
- Increasing Value of Imports in comparison to exports

### Research Problem

- To identify the measures for improvement in MMT of India.
- To identify the causes for the slow growth of Exports due to MMT in India.

## RESEARCH QUESTIONS

1. How the advancement in MMT can affect the exports value?
2. How can MMT in India can be improved?
3. What are the measures for improving transportation efficiency in India?
4. What are the practices followed by developed countries for increasing exports wrt MMT?

## RESEARCH OBJECTIVE

1. To Find the Challenges faced by Indian Multi-Modal Transportation.
2. To identify a relation between MMT and Exports of India.

## RESEARCH METHODOLOGY

The Purpose is to present the research design that will be used to conduct **Descriptive Research** for this study.

Sources of Data	Secondary
Research Instrument	Documents, Government Publications, Earlier Research.

## LITERATURE REVIEW

Authors/Associations	Year	Concept Introduced	Inference
OVERVIEW OF INDIA'S EXPORT PERFORMANCE	2012	Performance of India's exports and the various economic factors which have contributed to its growth	Overview of the export performance of important commodities concludes with key policy changes which could have a bearing on the Current trends seen in these sectors.
STRATEGY FOR DOUBLING EXPORTS	2012	Strategy Statement for exports.	Trends in Export, FTP 2009-2014, Exports analysis of different commodities
ROAD TRANSPORT SERVICE EFFICIENCY STUDY: WORLD BANK REPORT	2005	Scenario of road Transport Industry	Trucking Industry, motor insurance industry
Multi-Modal Logistics in India: an assessment	2012	Various aspects of Multimodal Logistics in India	Containerization, ICD's/CFS's, Logistics Parks, DFC's
Economic Reforms, Regionalism and exports: Comparison of India & China	2012	Link between the economic reforms and exports in China and India	Policy regime in present era of both countries, exports analysis.
Growth of Multi Modal Transportation in India	2005/2006	Containerization in India, Multimodal Transportation system in India	Shortcomings and challenges India is facing because of lack of Infrastructure, policy failures, operational deficiencies
INTERMODAL AND MULTI-MODAL LOGISTICS: DELLOITE REPORT	2012	Intermodal Transport, Multi-modal Transport, Principal Issues	Focus area for Infrastructure development, Regulatory Reforms

TRANSPORT & LOGISTICS : KPMG REPORT	2013	Tax structure in transport	The impact of tax structure transport industry
TRANSFORMING NATION'S LOGISTICS INFRASTRUCTURE: McKINSEY & Co. REPORT	2010	Logistics Infrastructure of India by 2020	Perspective on how Indian transport sector should evolve to meet needs in 2020 and beyond.
LOGISTICS & MULTI-MODAL TRANSPORT	2012	Legal framework, FDI, MTO	Policy regime for MTO in India, FDI in transport sector
DFC & HIGH SPEED RAIL: MINISTRY OF RAILWAYS	2011	Rail transport scenario in India	DFC's, Structuring DFC's, complexity in rail sector
MULTIMODAL TRANSPORT RULES: REPORT BY UNCTAD	2001	MMT, National laws and regulations	Multimodal transport goods act 1993 (amended in 2000)

Table 1

## 1. INTRODUCTION

Multimodal Transport is basically the utilization of more than one method of the four methods of transport to convey merchandise from Point A to Point B. An immeasurable and geologically enhanced country like India offers a superb chance to practice the idea of Multimodal Transport in its actual structure.

India has a coast line of approx. 7,518 kilometers which is adjusted by 13 noteworthy ports (12 legislature and 1 corporate) and 187 informed minor and middle of the road ports.

Payload taking care of at Indian ports is anticipated to develop at 7.7% until 2013-14. 60% of India's compartment movement is taken care of by Jawaharlal Nehru Port in Mumbai alone.

The MMT began India in year 1853 when British rulers presented lines; the target of acquainting tracks in India was with get entrance by then frontier rulers to the tremendous supply of crude materials accessible in the hinterlands of Indian subcontinent for advantage of the Newly Industrialized England then. From that point forward the Indian Railways have stayed head method of transport inside Indian region, joining the spots of assembling and utilization in inland parts of the nation to the seaports and in this way showing multimodal transport in its true sense.

By the year 2020, Indian Logistics sector is to grow to USD 200 Billion. Loads of crude material and completed products will have to move by method for MMT and this is a solid motivation to pull in base interest in this segment, which will must be supplemented by a solid administrative system to address the issues emerging out of expanded business movement.

The Indian economy has increased impressive energy in the course of the most recent one decade, by accomplishing and supporting a yearly GDP development rate of more than 7 percent. This high development rate can be to some degree credited to the developing commitment of the fare area to the economy.

This paper examinations India's fare execution and changes in its synthesis after some time. The report additionally distinguishes India's fare pattern and how it is influenced by MMT issues. It at long last highlights key changes expected to make in the Indian MMT situation to build the fare patterns.

## 2. MULTI-MODAL TRANSPORTATION (MMT)

The International Multimodal Transport Association characterizes multimodal transport as "the chain that interconnects diverse connections or methods of transport – air, ocean, and area into one complete methodology that guarantees an effective and practical way to-entryway development of products under the obligation of a solitary transport administrator, known as a MTO, on one vehicle archive". Subsequently transportation of oil or coal can't be multi-purpose, yet multimodal in light of the fact that they will must be "took care of" at the time of evolving modes.

A MMT contract is a solitary contract for carriage of products by no less than two separate methods of transport. A MMT administrator is an individual who closes a multimodal transport contract and expect obligation regarding the execution thereof as a transporter. MMT is valuable to the shippers as far as expanding adaptability and diminishing expense of logistics.

All the more particularly, the advantages are:

- Single purpose of contact:

Shipper needs to manage and completely depend on a solitary counterparty i.e. the multimodal administrator.

- Reduces weight of documentation and conventions:

A solitary contract can be arranged with the MTO. There is a solitary obligation and uniform risk administration.

- Saves time and cuts pilferage at the purposes of transshipment:

The MTO keeps up essential correspondence connections and directions with every gathering all through the logistics chain, lessening dangers of loss of time, pilferage and harm to payload at transshipment focuses.

- Reduces cost:

The MTO, being a mediator, can figure out how to get appealing cargo rates. This cuts down the general logistics cost for the shipper and in the long haul, expands request. In a roundabout way, it likewise cuts down expense of fares making them more appealing.

- Makes the best of every mode:

It is conceivable to join the particular focal points of every mode in the outing, for example, adaptability of street haulage, bigger limit of routes and the lower expenses of water transport in the best conceivable design.

- Frees up meeting expectations capital:

A backhanded advantage to the shippers is that quicker travel times permits organizations to keep less stock close by which thusly arranges for valuable working capital .

- Better conveyance of riches:

MMT cuts down the virtual separation between the inception and destination of load. This aide in moving modern development from the generally created seaside areas to the landlocked insides of the nation.

The fundamental partners included in the multimodal arrangement of transportation are administrative powers, traditions, shippers, multimodal transport administrators, logistics middle people like sea transporters, cargo forwarders, terminal administrators, subordinate administration suppliers, and so on. The MTO goes about as an operator for the shipper. Their relationship is represented by a solitary Multimodal transport contract. The MTO, thusly, goes into divided contracts with transporters, freight consolidators, ports, air terminals and so forth., organizes traditions techniques and therefore oversees end-to-end cargo development.

Multimodal Transport can be seen as "the chain that interconnects diverse connections or methods of transport -air, ocean, and area into one complete methodology that guarantees an effective and financially savvy way to-entryway development of products under the obligation of a solitary transport administrator, known as a Multimodal Transport Operator (MTO), on one vehicle report".

In spite of the fact that the idea may not be new, it created with the appearance of containerization in the late 1950's. From that point forward, certain vital advancements have affected the current advancement of multimodal transport. Administrative deregulation of distinctive methods of transport in the late 1970s/mid 1980s allowed the different modes to coordinate with each other and to facilitate their operations in significant and creative ways. Other essential improvements incorporate the evacuation of transport limitations and the privatization of state-possessed transport endeavors in different parts of the world in the late 1980s.

Likewise, with today's element markets and progressively evolving advancements, organizations must be adaptable to react quickly to rivalry and business changes. In the course of recent decades, hyper rivalry drove business cycles to create different administration devices and methods to survive. Quality administration, time-based rivalry, benchmarking, outsourcing and change administration are all samples of such instruments which were utilized to accomplish the aggressive or relative playing point. A definitive objective is to "convey more noteworthy quality to clients or make good esteem at a lower cost.

## 2.1 MULTI-MODAL TRANSPORTATION: GLOBAL SCENARIO

The extension of this new transportation interest is driving transport foundation development also, new transportation arranging in numerous parts of the world.

The US drives the world is worldwide exchange, with the most astounding volumes of imports being gotten from China. The significant activity streams for between modular movement inside the US are from west to east from the compartment ports on the west drift to the businesses on the east drift. However, the offer for between modular movements for rail regarding tonnage is 16 %, though for mass activity it is 70 %, this rail offer is basic for the US economy. The Panama Canal confined the extent of boats that could achieve the east drift, and now the west drift ports face blockage with holding up time expanding for holder ships. Alongside US ports, rail and street limit are presently confronting limit deficiencies with extending exchange with China. Transshipment centers are foreseen to come up in the Mediterranean region pander to European and the US east drift ports.

Europe was the most punctual to add to all vehicle modes, from oceanic, inland conduit, to street and rail. Since the 1970s compartments were moved inland by canal boats to inland business focuses and stream ports like Rotterdam and Antwerp, and from that point by street. Today, containerized load included 16% of cargo took care of at ports, after fluid mass (41 % of cargo took care of at ports), and dry mass (26 % of cargo took care of at ports).

Financial development brought about increment of cargo activity, however yearly increments in street cargo are more noteworthy than volumes moved over between modular frameworks that is rail or beachfront shipping. For inland cargo, the modular shares are 76.5 % for street, 17.6 % for rail and 5.9 % for inland conduits. Most inland development of cargo is focused on streets, officially congested along vital courses particularly where there is no network of inland conduits or beachfront shipping, on the grounds that regardless of the advancement in European unification, just the street and inland conduits system has been bound together. As Europe countenances an extension in transport request with globalization and the development of the European Union eastwards, there is expanding concern over clogging, ecological contamination and vitality preservation, which have come about because of the development of street movement.

A more productive utilization of every mode and between modular network for utilization of every mode in blend was highlighted in the 2001 European White paper on Transportation. The significant test for European transport, alongside limit extension for every mode, is to bring together the rail cargo showcase with a specific end goal to enhance between modular choices, lessen blockage on European streets and ecological contamination. This requires mechanical upgradation, institutionalization of rail system, improvement of high thickness rail cargo passages and enhanced offices for multi-purpose logistics. The central point behind the development in universal exchange and increment in containerized cargo transport in the US and EU is the rise of China as a real exchanging accomplice of the US and Europe in the last 5 to



6 years. In China itself, modern advancement began along the east drift where shipments were containerized and transported to the ports by freight boats and seaside ships. Transport abroad was made conceivable effortlessly in extensive holder sends that crossed the Pacific to the US west drift prompting the improvement of the west drift ports in the US.

As a consequence of this example of improvement, monetary development in China is focused on the east drift. To have a more adjusted development, the Chinese "go west" strategy incorporates the improvement of interstates and routes to spread advancement into the inside. Notwithstanding, Chinese routes keep on being essentially mass merchandise transporters and between modular transport, as modern improvement has not entered inland to an extensive degree.

## **2.2 MULTI-MODAL TRANSPORTATION: INDIAN SCENARIO**

India has a coast line of approx. 7,517 kilometers which is adjusted by 13 noteworthy ports (12 administration and 1 corporate) and 187 informed minor and halfway ports. The most recent expansion to significant ports is Port Blair in June 2010, the 13<sup>th</sup> major port in the nation.

Interestingly significant ports and minor ports have nothing to do with the volumes handled, except that Major Ports are under the Central government organization while minor ports are administered by the state governments. This course of action is because of the elected structure of Indian Govt. Freight handling at Indian ports is anticipated to develop at 7.7% until 2013-14. Some 60% of India's container movement is taken care of by Jawaharlal Nehru Port in Mumbai alone.

The actual multimodal transport began India in year 1853 when British rulers presented routes, the target of presenting railways in India was to obtain entrance by then pilgrim rulers to the huge supply of crude materials accessible in the hinterlands of Indian subcontinent for advantage of the Newly Industrialized England then. From that point forward the Indian Railways have remained head method of transport within Indian region, connecting the places of producing and consumption in inland parts of the nation to the seaports and therefore showing multimodal transport in its true sense. Indian Railways in the introductory days and then CONCOR have played a critical come in advancing multimodal transport in India.

Indian Railway's drive to containerize load transport put India on the multi-purpose freight transport map for the first time in 1966. Given India's size (almost 3,000 kilometers from North to South and East to West), rail transport is regularly a less expensive choice for all cargo over medium and long separations, especially if the expense of between modular exchanges can be lessened.

In 1966, Indian Railways entered the market for moving way to-entryway residential freight in special DSO compartments. Despite the fact that the first ISO compartment in India had been

handled in Kochi as early as 1973, it was not until 1981 that the first ISO holder was moved inland by Indian Railways to the nation's first ICD at Bangalore, likewise overseen by the Indian Railways. Extension of the system to seven ICDs by 1988 saw an increase in holder handling capacity, while along the way a solid perspective rose that there was a need to set up a different professional active association to advance and manage the development of containerization in India. Henceforth CONCOR was incorporated in March 1988 and commenced operations in November 1989 assuming control over a current system of seven inland compartment terminals (ICDs) from Indian Railways. It now has a system of 61 ICDs/CFSS (Container Freight Stations) all through India. Interestingly India now has near to 300 private and open ICDs and CFSSs giving Multimodal Transport base

The Multimodal transport act was passed by Indian Parliament in the year 1993; the main goal of the demonstration was to establish a risk administration for Multimodal Transport operators. The Director General of Shipping was advised as a Competent Authority under the aegis of this law. The MMTG Act prepared for different Indian Logistic Service suppliers to get themselves enrolled with the powers and start issuing Multi Modal Transport Document. This helped the shipper group in India in a huge path as now they could ship merchandise from any inland point in India to any destination in the world under a solitary Contract of Carriage. After institution of the law different logistic administration suppliers got themselves enlisted as Multi Modal Transport Operators and started offering Multimodal Transport Administrations to meet the growing requirements of India Shippers. By the year 2020, Indian Logistics part is assessed to produce incomes of USD 200 Billion. Lots of raw material and completed products will need to move by method for Multimodal transport and this is a solid reason to attract base interest in this area, which will have to be supplemented by a strong administrative framework to address the issues arising out of increased business movement.

### **3. MMT ISSUES IN INDIA**

Multi-modal or between modal transport alludes to way to entryway development of products by a solitary transport administrator. It includes the transportation of cargo in a holder or a vehicle utilizing numerous methods of transportation - rail, ship or truck, with no treatment of the cargo itself at the point when evolving modes. Payload is consequently less inclined to harm and pilferage amid exchange and motorized taking care of likewise minimizes expenses of all multi-purpose exchanges. The vehicle of products from inception to destination gets to be consistent and the clients can profit of way to entryway conveyances. Multi-modal transportation hence ideally utilizes each mode's particular points of interest to in a perfect world convey the least cost transportation administration. It suggests the accessibility of distinctive transport systems – street, rail, beachfront shipping and aviation routes, offices for effective multi-modal exchanges, and administration suppliers who assume liability for conveyances from way to entryway.

#### **3.1 INFRASTRUCTURAL ISSUES**

Infrastructural foundation is a discriminating empowering influence of India's monetary advancement. Perceiving this urgent part, logistics base spend has been tripled from around USD 10 billion in 2003 to an arranged measure of around USD 30 billion in 2010. Notwithstanding this expand, the nation's system of streets, rail and conduits will be lacking as cargo development increments around 3 fold in the impending decade. This deficit in logistics base will put India's development at danger. Since an extensive part of India's future logistics system is still to be constructed, the nation has an opportunity to manufacture foundation ideally, to take care of the developing demand. Doing as such obliges a coordinated and facilitated approach in which the advancement of every mode—tracks, conduits and streets is coordinated to the needs and existing resources are better used. Specifically, India needs to build its utilization of rail, and understand the capability of its conduits. For instance, in the typical course, India's rail partake in cargo would decay to 25 every penny from the current 36 every penny. This is in respect to just about 50 every penny rail partake in China and the US, comparative mainland estimated countries. The coordinated methodology proposed in this report can build India's rail offer to 46 every penny. In the event that India neglects to attain to this, waste created by poor logistics base will increment from the current USD 45 billion proportionate to 4.3 every penny of today's GDP, to USD 140 billion then again more than 5 every penny of the GDP in 2020. On the off chance that handled in a coordinated and facilitated way, this can be diminished significantly and India's vehicle fuel necessity decreased by 15 to 20 every penny.

### 3.1.1 INDIA'S CURRENT LOGISTICS INFRASTRUCTURE PLAN: INADEQUATE

The nation's street, rail and conduits system is a legacy of pilgrim guideline, truly created to transport troops, horticultural items and crude materials. Accordingly, India's logistics base is not satisfactorily prepared to meet quickly rising cargo activity, changing utilization examples and expanding quantities of generation focuses. Throughout the most recent 60 years, restricted arranging and interests in cargo transport have brought about various inefficiencies. Further, India's financial development will just put more noteworthy weight on an officially extended system. The four angles sketched out beneath portray India's logistics system.

In the Eleventh Five-Year Plan, spend on logistics framework at around USD 160 billion is higher than spend designated to power at USD 150 billion. Yet, India's logistics system is not prepared to deal with an over two fold increment in cargo activity expected by 2020. An in a broad sense diverse methodology will be expected to fabricate India's logistics framework.

### India's logistics infrastructure lags behind global peers as well as other developing countries

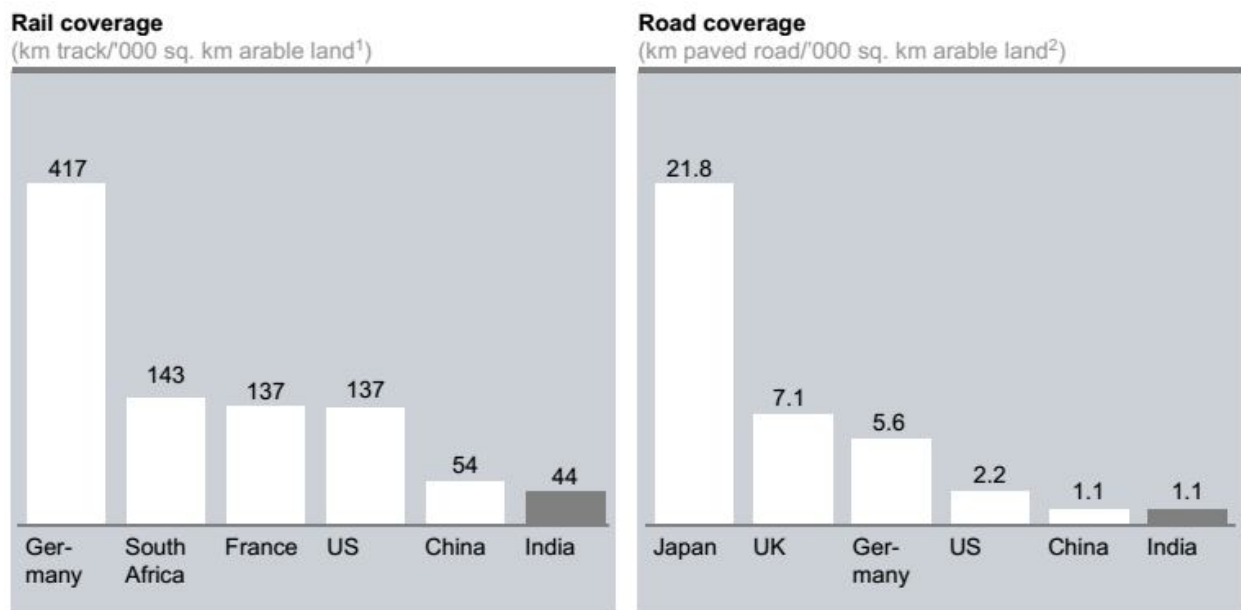


Fig.1 India's Logistics Infrastructure comparison (Source: McKinsey)

1. The logistics streams are highly concentrated.

Three segments of India's logistics system represent more than 66% of aggregate cargo movement stream in the nation.

Segment 1 – Seven long term passages that join 15 high-development groups structure the spine of India's logistics system. The seven passageways represent about 50% of the aggregate cargo movement in 2007. Hence, cargo courses through these passageways witness the most elevated activity volumes in the nation. The seven passageways represent about a large portion of the aggregate cargo movement in 2007. Hence, cargo courses through these halls witness the most astounding activity volumes in the nation.

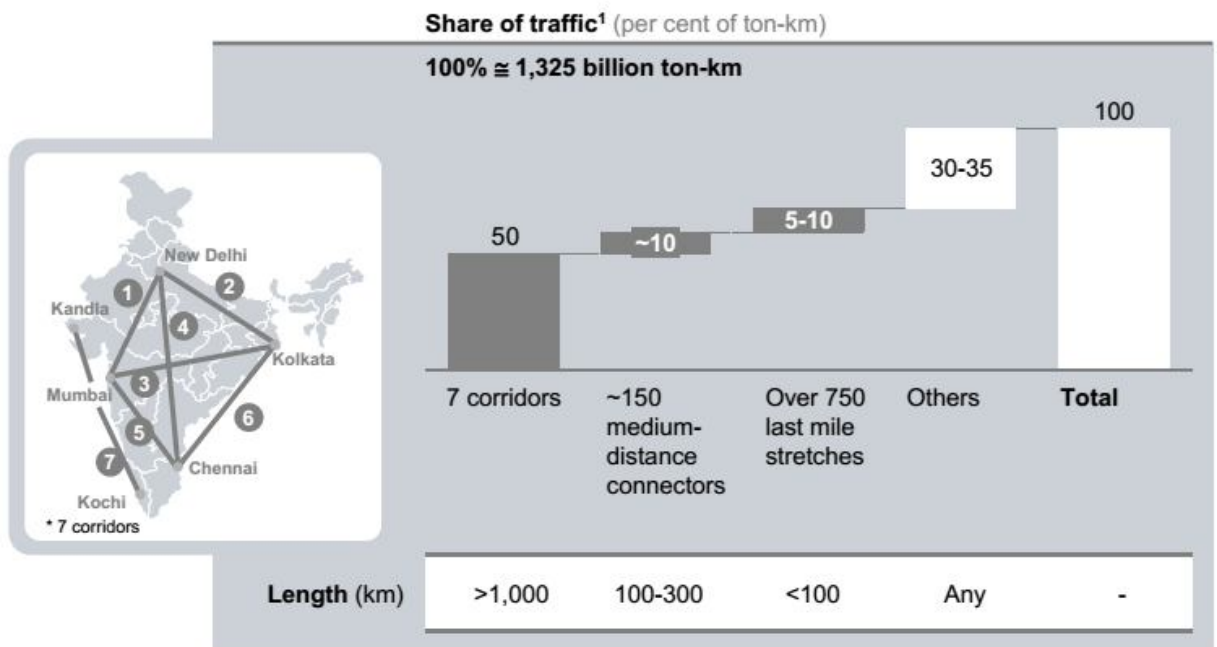


Fig.2 Traffic Share (Source: McKinsey)

## Seven corridors connect 15 high-growth clusters

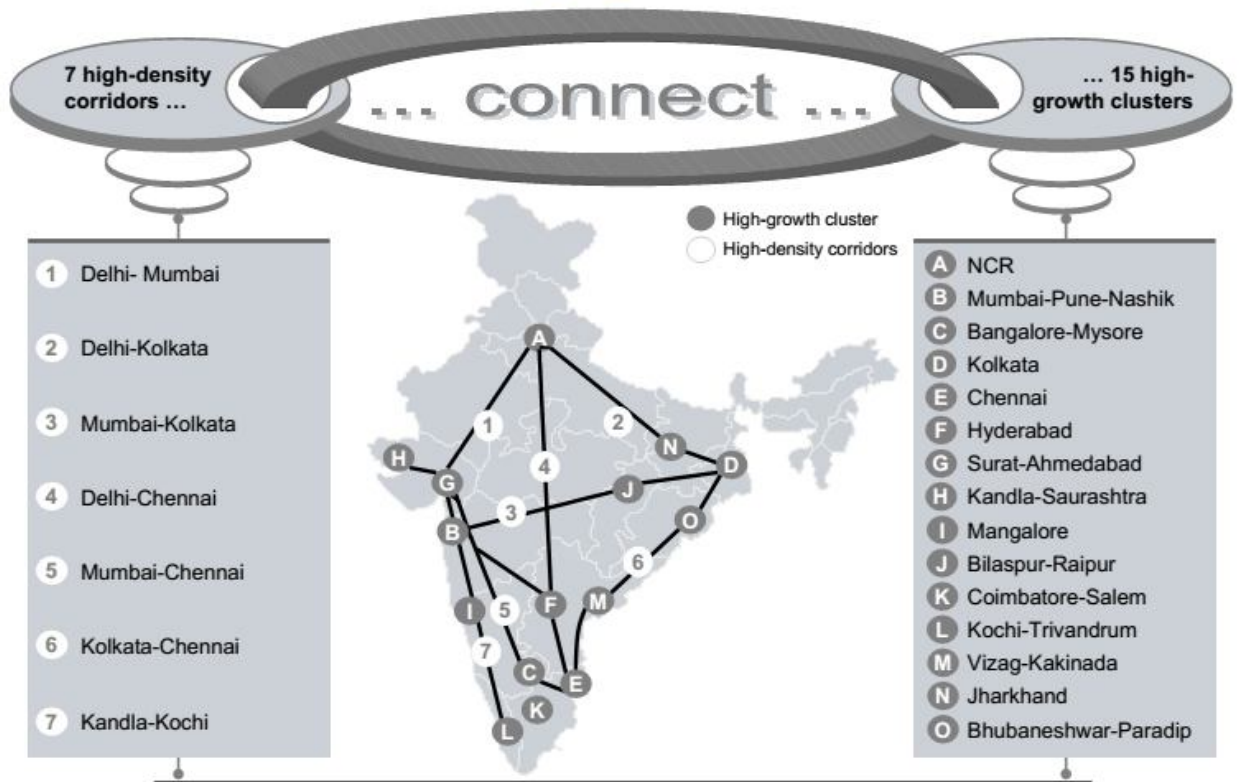


Fig.3 7 Corridors Connectivity (Source: McKinsey)

## Seven high-density corridors account for 50 per cent of freight traffic

Water  
 Rail  
 Road

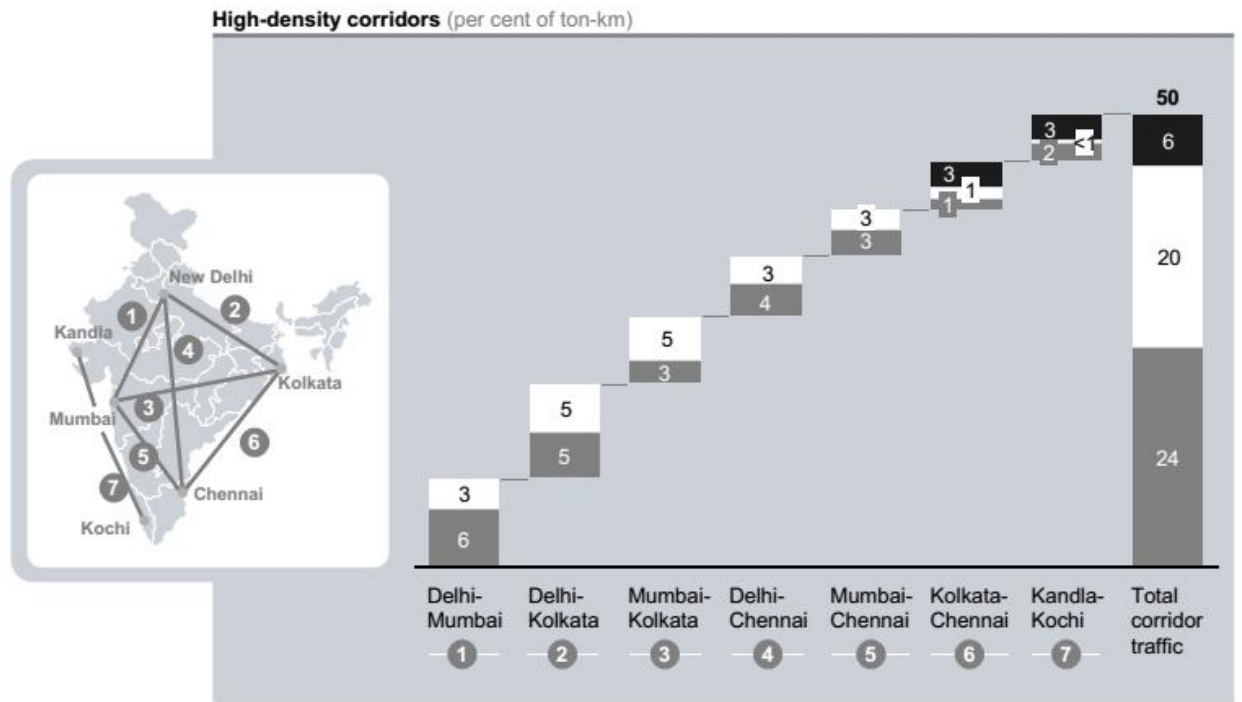


Fig.4 Traffic share of Corridors (Source: McKinsey)

Seven passageways join these real groups and represented around 50 every penny of the aggregate cargo movement in 2007 in ton-km. Looking ahead, they are liable to represent 60 every penny of the development. Inside this geographic fixation:

- National thruways (NH) along the chose courses represent under 25 every penny of the aggregate NH length (i.e., under 0.5 every penny of the Indian street system) yet handle more than 40 every penny of street cargo activity
- Rail connections embody 27 every penny of the Indian rail arrange however handle more than 50 every penny of rail cargo activity in the nation

Component 2 – Over 150 medium-distance connectors that link the corridors are key for India's logistics network.

They are 100 to 300 km long, commonly branch out from the passageways, and convey 10 every penny of cargo in ton-km. All the more imperatively, near to 30 every penny of cargo volumes go through these connectors sooner or later. These connectors incorporate rail connections and state and national parkways and in addition real locale streets that record for an unbalanced offer of intra-state movement.

Segment 3 – Over 750 last mile connections of up to 100 km structure a discriminating part of India's logistics system. These connections associate key generation, utilization and travel focuses, for example, ports, mines what's more, industry groups to the hallways and connectors. They have not commonly been the center of endeavors to fabricate the nation's logistics foundation. In any case, the low quality of these connections or their nonappearance through and through is frequently the reason for bottlenecks and poor administration levels.

Last-mile network has not normally gotten much consideration in foundation improvement or transportation arrangements. This has made discriminating difficulties. To begin with, existing connections are of low quality, and second, there is a lack of such helps that interface generation and utilization Center's with connectors and hallways. Our examination recommends the current system alone requires more than 750 last mile connections to successfully meet current prerequisite

1. India's cargo transport depends unnecessarily on streets

India's streets represent a higher offer of cargo movement contrasted with other mainland estimated nations like the US and China. India's dependence on streets is more than three times that of China.

This is in spite of the way that a vast part of India's cargo activity involves mass material and moves over long separations that can be all the more financially served by rail.



## Freight transport in India is dominated by roads

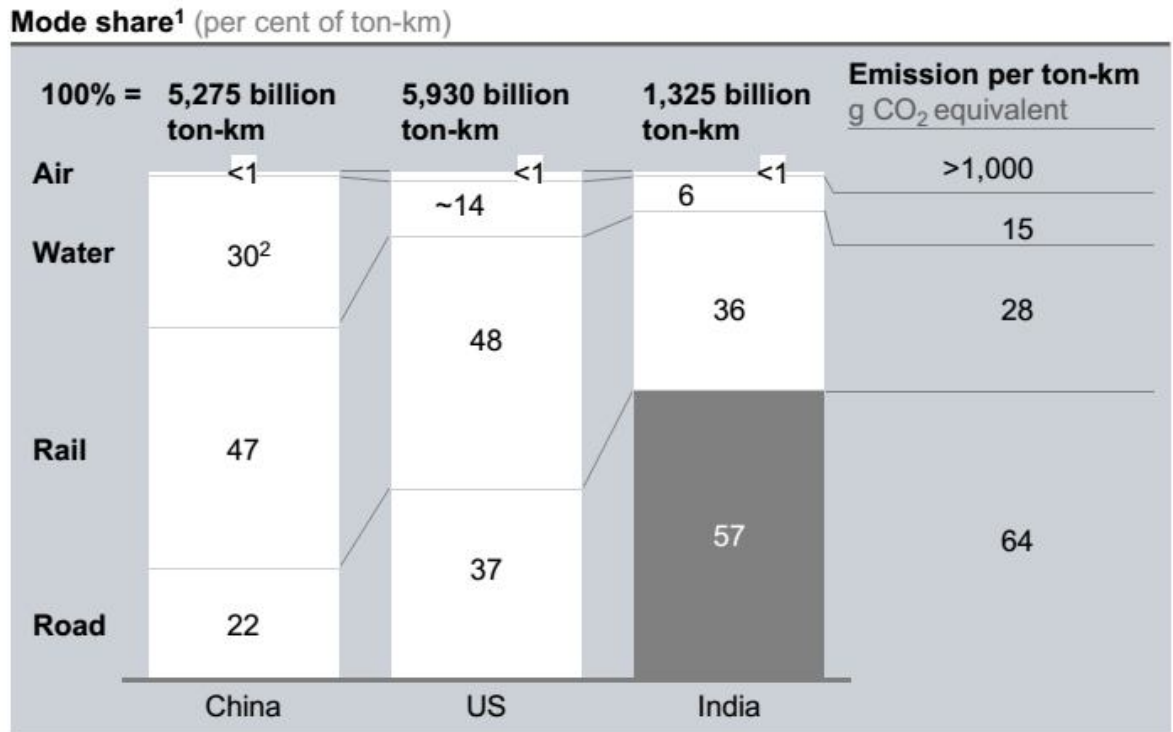


Fig.5 Freight Transportation in India

(Source: World Economic Forum; China Statistic Yearbook; Planning Commission India; NHA; Indian Railways; DG Shipping; Bureau of Transportation Statistics US; McKinsey)

Further, the higher reliance on street transport is unfriendly for nature as emanations from street transport are higher than outflows from rail and conduits. Street transport radiates 84g of CO proportionate every ton-km contrasted with 28g for lines and 15g for conduits. Yet, India keeps on transporting a lion's share of its products by means of streets including mass materials like steel, bond and coal.

A moderate movement from street to rail can help India spare near to 0.7 every penny of its aggregate business vitality utilization. While street is the minimum lavish manifestation of transport for separations up to 400 km, as separation builds rail and conduits get to be less expensive. Streams where rail is fundamentally less expensive than streets represent around 66% of the aggregate activity. While costs by mode and separation breakpoints could differ by course, sort of ware, front pull or backhaul and so forth., the breakeven separations are directionally right.

1. Around USD 45 billion is lost every year because of inefficiencies in India's logistics system

While in total terms, industry spend on logistics in India is low—the relative spend is high. India burns through 13 every penny of GDP on logistics which is more than what the US (9.5 every penny) and Germany (8 every penny) spends. The buying force equality (PPP) balanced benchmark of transportation expenses by mode with the US exhibits that India's logistics foundation is wasteful. For example, rail and seaside transportation costs in India are pretty nearly 70 every penny higher than those in the US. Similarly, street costs in India are higher by around 30 every penny. This not just results in higher costs and lower intensity, additionally hampers financial development. Our investigation proposes that poor logistics foundation costs the economy an additional USD 45 billion or 4.3 every penny of GDP every year. 66% of these expenses are shrouded i.e., not by and large viewed as logistics expenses. These shrouded expenses incorporate robbery and harm, higher stock holding expenses, assistance and exchange cost.

### Logistics users in India spent ~USD 45 billion more than required due to inefficiencies in the logistics system

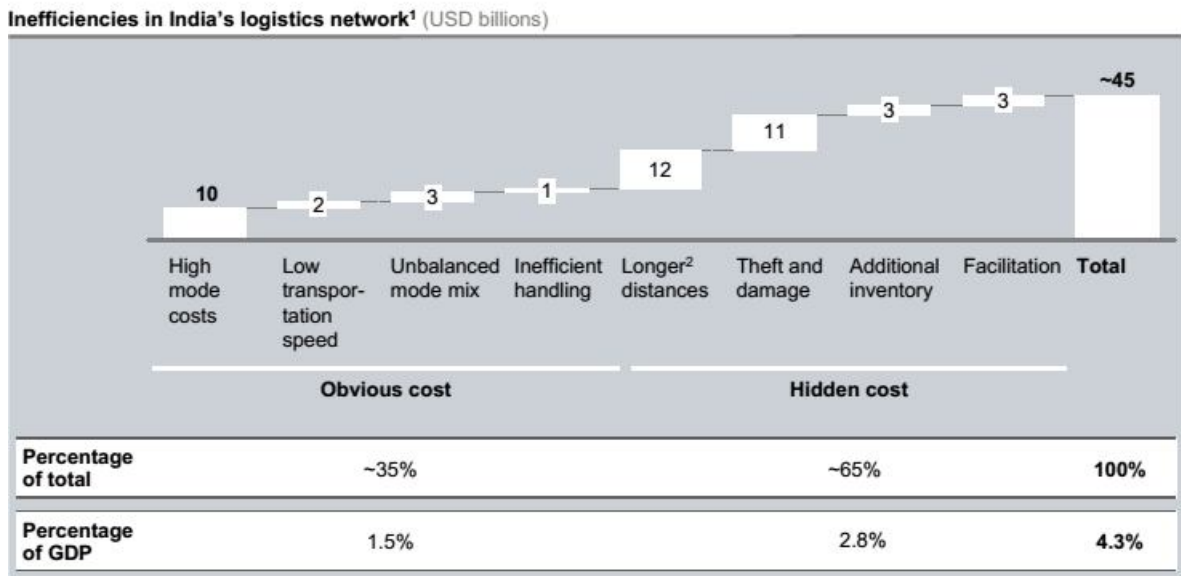


Fig.6 Inefficiencies of Logistics system in India (Source: McKinsey)

## Mode costs in India are higher than in the US

ESTIMATES

US cents per ton-km (PPP adjusted)<sup>1,2</sup>, 2007

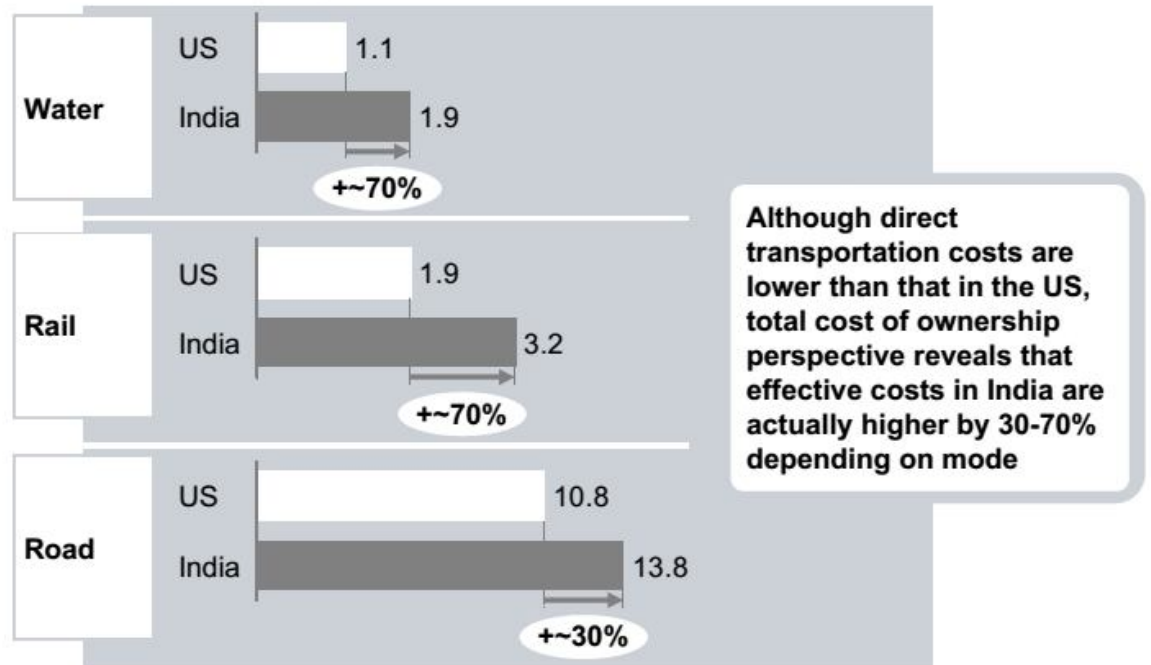


Fig.7 Transport mode cost in India

(Source: DG Shipping; Indian Railways; Bureau of Transportation Statistics US; McKinsey)

Notwithstanding mode expenses, travel times crosswise over modes in India are longer and differ broadly contrasted with created nations. This can be part of the way credited to low normal velocities.

For instance, the normal velocity of a truck is 35 km every hour on India's roadways as contrasted with more than 75 km every hour in the US. Also, the normal velocity of cargo trains is 25 km every hour in India while it is near to 45 km every hour in the US. Low normal velocities are accentuated by an assortment of elements: vulnerability in holding up times at toll stations, solidify in truck movement amid the day, high turnaround times at ports, low need agreed to cargo prepares on Indian tracks, low-quality track base and outdated trucks helpless to successive breakdowns, bringing about long travel times. These difficulties altogether expand the administration multifaceted nature for clients of India's logistics system.

Past the difficulties of long and unverifiable travel times, India's logistics system is additionally hampered by poor transportation hardware. Trucks are littler, generally questionable and the lines use higher tare load wagons with lower hub stacking (21 to 22.9 tons versus more than 25 tons in the US and China) coupled with lacking stacking

and emptying framework. Inefficiencies are further exacerbated by the unlucky deficiency of electronic tolling frameworks; constrained utilization of data innovation (e.g., in following and directing wagons) brings about higher end-to-end transportation costs, higher organization expenses furthermore expands the expenses from harm et al. Be that as it may around 65 every penny of the inefficiencies are concealed i.e., they are right now not specifically credited to logistics.

1. A 2.5 times expansion in cargo activity in the following decade will put further weight on India's logistics base

India's current framework is as of now over-extended. For instance, the vast majority of the national thruway system and rail interfaces along the Golden Quadrilateral and North-South and East-West hallways are congested. Numerous huge ports are as of now working at high usage rates. Further, even at a moderate yearly development rate of 7.5 every penny, India's cargo movement is liable to dramatically multiply from current levels by 2020. At last, interests in the current system outline will just prompt expanded inefficiencies and in misfortunes as settled before. perceiving these difficulties, the Eleventh Five-Year Plan proposed a huge increment in logistics foundation spend from USD 65 billion or 1.5 every penny of GDP in the Tenth Plan period to USD 160 billion or 2.3 every penny of GDP.

This is much more than India arrangements to spend on force amid the same period. In spite of the substantial expand, the arranged spend is inadequate. It would, best case scenario bring about a 15 to 20 every penny increment in street and rail system limit.

The development in cargo activity will out do this expanded limit. The current direction proposes that the aggregate interest in logistics base would be over USD 500 billion by 2020. In spite of this expanded speculation, our investigation recommends that administration levels, outright travel times and travel time varieties will just compound given the development in cargo activity. Subsequently, financial misfortunes, which are about USD 45 billion today could ascend to around USD 140 billion in 2020.

Current direction will bring about a venture of USD 500 billion on logistics base:

Perceiving the pressing need to quickly scale up ventures to take care of rising demand in the part, the Eleventh Five-Year Plan has allotted near to USD 160 billion towards creating streets, rail and conduits. every penny of this spend is allotted to streets, every penny to rail and 11 every penny to conduits including ports. Further, the Planning

Commission has demonstrated a conceivable increment in spend on framework as an every penny of Gross domestic product from 5.3 every penny in 2008 to 10.3 every penny in 2017.

In light of arranged and expected interests in the 11th Plan, and evaluations for tentative arrangements to elucidate GDP development at 7.5 every penny every annum through the following decade, interest in logistics framework is evaluated to be about USD 500 billion by 2020

### Freight traffic is expected to grow over 2.5 times over the next decade

Billion ton-km

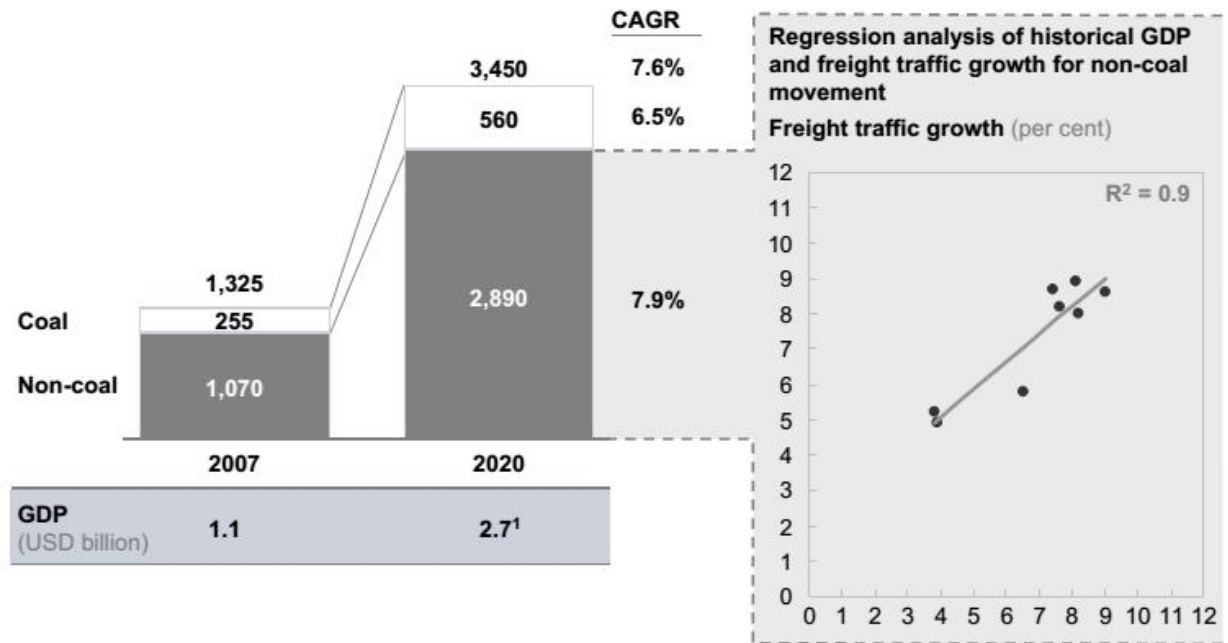


Fig.8 Freight Traffic Growth (Source: Planning Commission; McKinsey)

- The NHDP focuses on an extra 72,000 path km of national interstates by 2015. Past the NHDP, an extra 65,000 path km of national thruways are required to be assembled by 2020, in accordance with the increment in yearly spend on national roadways. This recommends a multiplying of limit on the national roadway organize by 2020. Additionally, more than 220,000 path km of state thruways are liable to be manufactured by 2020, suggesting a 30 every penny increment in the state interstate system.

- In the rail organize, two DFCs are relied upon to be finished by 2020. Further, near to 40,000 km of tracks (counting new lines, multiplying and gage transformation) are relied upon to enlarge the current system of 63,000 km. Additionally an extensive piece of the system is relied upon to enhance innovation including zap and prevalent flagging including Automatic Block Signaling (ABS). More than 1,500 million tons of port limit is required to be included amid this time

Fiscal adversities will climb despite point of confinement development:

The organization's back and forth movement hypothesis heading will realize an altogether higher offer of payload going on lanes without sufficient cutoff on rail and courses. Without a doubt, 70 each penny of payload will go on road, 25 each penny on rail and 5 each penny on channels. Consequently, the disaster to GDP from inefficient establishment is assessed to addition from around USD 45 billion to USD 140 billion all through the accompanying decade due to more congested roads, higher working capital necessities (an eventual outcome of stock in travel), extended road costs (settled costs will be passed on over a smaller detachment secured reliably) and extended potential results of thievery and waste.

## 3.2 REGULATORY ISSUES

### 3.2.1 Multimodal Transport Act, 1993

The Indian government perceived the advantages of multimodal transport route back in the mid 1990s and concocted the Multimodal Transportation of Goods Act in 1993 with the target of empowering development of fares from India. Through the Act the legislature went for creating worldwide multimodal transport which would lessen logistics expenses and subsequently make Indian items more aggressive in the worldwide business sector. The Act built authorizing necessities, contractual terms (through the Multimodal Transport Document) and obligation administration. The Act was again revised in year 2000 to give more insurance to shippers. As indicated in terms of professional career, the current variant of the Act still has a few lacunae. The Association of Multimodal Transport Operators of India have proposed a few changes including obligatory enrollment of MTOs with DGS, changes to the Customs Act to empower consistent development of merchandise, punishments for offenses among others. Exchange assesses that these changes ought to cut down travel time for transport of merchandise by 40-50%.

### 3.2.2 Private Freight Terminals Policy

The strategy plans to empower advancement of exclusive cargo terminals on private area for managing break mass merchandise, bundle activity and compartments. Indian Railways' products sheds are not in a decent condition, which is the reason they have striven for PPP method of improvement. Under this arrangement, PFTs are required to give merchandise taking care of, warehousing and other related logistics administrations to rail clients and encourage development of the 3PL division. After the tepid reaction to its unique strategy the IR patched up it as of late. CWC, CONCOR and a few private players are looking to assemble and work PFTs. In the event that this is a win, it is sure to build the offer of rail cargo transport.

### 3.2.3 Draft Coastal Shipping Policy

The proposed beachfront shipping approach is gone for boosting waterfront exchange and different bolster administrations with unique concentrate on seaside ships, River Sea Vessels (RSVs), Inland Vessels (IVs) and Cross exchange perfect vessels.

### 3.2.4 Infrastructure:

Setting up more minor ports along the coast, devoted billets for seaside ships, advancement of RoRo wharfs, boat repair offices and dry-docks, LNG supply offices, committed stockrooms for beachfront freight, rail and street integration and developing of ocean channels at minor ports.

### 3.2.5 Financial motivators including endowments:

Actualizing a forceful boat building endowment strategy, exception from specific charges, lower duties than remote boats, appropriations for Ro-Ro and repair breakwaters, financial motivations for little ports and creating a Coastal Development Fund for waterfront ships.

### 3.2.6 Resolving labor issues:

Taking care of issues with respect to labor and keeping an eye on scales to compose for accessibility of satisfactory and great quality labor. Advancing modular movement from street and rail to beachfront transportation: Improve aggressive capacity of waterfront ships and advancing the Carbon credit plan.

### 3.2.8 Data base and correspondence framework:

Securing & keeping up a strong framework/database for accumulation of exact information, distributed yearly reports on seaside transportation, adding to a cargo trade and streamlining the multi-modular transport operations. The above measures are required to give a support to the seaside transporting in India.

### 3.2.9 Cabotage Policy

The Cabotage arrangement checks the seaside exchange of a nation. Couple of nations practice total Cabotage law while others rehearse a custom-made one. In India, the Cabotage Policy is not outright. It is directed through procurements of areas 406 and 407 of the Merchant Shipping Act, 1958.

The first Cabotage approach obliged remote boats to take a permit for utilizing on the coastline of the nation. Waterfront delivering hence must be done just by Indian ships or boats contracted by Indian subjects. Because of this and a few different reasons, a significant piece of Indian transshipment payload was getting occupied to Colombo, Singapore & Jebel Ali Ports.

As of late the arrangement has been loose particularly so that ICTT, Vallarpadam would pull in transshipment load bound for Indian ports. It would permit holders landing there to be delivered to other Indian ports. Activity development at ICTT, Vallarpadam, which was particularly created to work as a transshipment center point, been need brilliance till now and essentially beneath assessments. This strategy change is required to help in development of movement at there and all the more vitally, decrease redirection of Indian payload activity to ports in different nations. Be that as it may, the flipside is that residential delivery organizations may confront extreme loss of business.



### 3.2.10 Policy to allow Operators to move holder prepares on Indian Railways

This strategy was planned to allow rail connecting of ICDs by private gatherings other than CONCOR and to permit them to move compartment prepares on the same lines as CONCOR for both worldwide and household activity. The private players would possess the trains and IR would give the motor and group. Privatization of compartment rail operation lured 16 players and got speculations of around Rs. 2,000 crore. Be that as it may, confinements have been set on private players to convey certain products, for example, coal, coke, a few minerals. The private players need to depend on IR's framework which, they contend, is not upto models. They confront serious rivalry from CONCOR, which is an IR auxiliary and has been show in this division since quite a while. Furthermore, haulage charges have been raised on numerous occasions, the late one being that for pig iron and wipe iron, pressing out net revenues of private players. IR, then again, keeps up that it takes after the cross-endowment approach by attempting to acquire more from cargo transport to have the capacity to keep giving shabby traveler transport.

### 3.2.11 Impact of GST

Backhanded Taxes are completely connected with the development of merchandise. It chooses both the rate and quantum of assessment to be collected. One of the real ramifications of the GST is that the occurrence and scope of duty for giving of administrations will rise while in the meantime there will be lesser requirement for the distribution centers because of store network efficiencies. This, thusly, may oblige organizations to reexamine their store network/ logistics procedures. GST is liable to have the accompanying effect on the logistics business overall:

1. Increase in outsourcing of the warehousing capacity to 3PL administration suppliers.
2. Reduction in number of Distribution Centre's: Post GST, state particular dispersion focuses are required to offer approach to provincial DCs. The result being less DCs of generally bigger size and system scope, more esteem stock and change in nature of administrations.
3. Alleviation of the complexities in documentation and between state obstructions
4. The test then lies in the plan of the system outline which will pack production network for GST proficiency while guaranteeing that the business destinations in and around the logistics system are additional.

### 3.2.9 Foreign Direct Investment

In rising economies like India, the budgetary assignment for advancement of base is organized stage -insightful to build up the framework and also to do equity to different areas like instruction, wellbeing, nourishment & sustenance, safeguard and so on. In such a situation and given the ordinary way of profits on interests in this division, outside speculations and credits from multilateral organizations get to be essential wellsprings of fund. The Indian Government, in 1992, casual the standards for outside interests in India and opened the base division to remote speculations. India permits 100% FDI in oceanic framework like ports, terminals, piers, harbors, shipper shipbuilding and in bolster base like warehousing, streets and Inland Water Transport. Since, then there has been critical venture particularly in the ports division by outside players the significant ones being those by DP World, APM Terminals and PSA Singapore among others. Thought ought to be given to give motivating forces to remote players to wander into creating other transport foundation also.

## 3.2 TECHNOLOGICAL ISSUES

In spite of being an imparted administration and not contributing straightforwardly to the incomes of an organization, interests in innovation harvest colossal returns in a roundabout way. Today, data accessibility, perceivability, operational adaptability and versatility are basic to a fruitful logistics capacity. A portion of the advancements in innovation relevant in the logistics part have been analyzed here.

### 3.3.1 Cloud registering and Software-as-a-Service

Distributed computing as an idea has quickly grabbed in the late years. The top logistics firms, makers and wholesalers have effectively put resources into this innovation to harvest its advantages. Hypothetically, distributed computing and SaaS are one and the same. As opposed to purchasing and setting up programming arrangements inside, organizations can lease them from an outside supplier that has the applications all alone servers. On the other hand, notwithstanding offering programming as an administration, a cloud system might likewise offer administration situated structural engineering, stage, foundation, database, or different abilities as an administration. A portion of the advantages of Cloud/ SaaS based models for logistics organizations incorporate –

1. Low expense foot shaped impression: Low in advance venture and little payback periods.
2. Enables cooperation: Entities in an inventory network including transporters, 3PLs and suppliers, can interface on the cloud to team up on logistics arranging, estimating, and acquisition administration.
3. Scalable: Because of the simplicity and nimbleness of sending these arrangements, they are versatile to meet unstable client requests.
4. Integration: It expands inventory network efficiencies by incorporating data on the same stage than having unique frameworks that don't cooperate.
5. Real-time perceivability: With all information standardized on one stage, clients get constant perceivability of inbound transportation and shipments in travel.

### 3.3.2 Global Positioning System

GPS innovation gives the points of interest of the root and destination of a shipment. Amid travel, it helps in giving the accurate position of a dispatch. There are refined GPS maps and innovation accessible through which one can track the development, and be proactive to clients by illuminating about the shipment status and expected conveyance time. GPS framework helps logistics organizations to track the area of their merchandise.

With the GPS frameworks getting to be less expensive and more progressed, by the day, a hefty portion of the substantial and medium measured logistics players have embraced GPS following frameworks for their truck. Notwithstanding following, GPS frameworks have additionally been discovered to be helpful to lessen truck breakdowns. In the occasion of a breakdown, it minimizes the measure of time spent in recouping the vehicle by sending administration faculty found closest to the vehicle to do the repair work. Likewise, certain GPS frameworks permit setting up of preventive support cautions by datebook time, motor on-time or mileage to advise the administrator when the vehicles are expected for upkeep. Additionally, GPS frameworks likewise permit compelling arranging of conveyance employments to track that the vehicle nearest to the source/destination for performing the employment. This aides in significant diminishment of fuel and support costs and in addition decreases time obliged every employment. Organizations can even consolidate hard information assembled through GPS following into representative examinations and reward/prize plans. Rewards in light of substantial execution measurements can empower gainfulness and help assurance.

### 3.3.3 Radio Frequency Identification

Radio recurrence distinguishing proof is a programmed ID strategy, depending on putting away and remotely recovering information utilizing gadgets called RFID labels or transponders. It permits following, checking, reporting and overseeing items, records, resources and individuals all the more viably and productively as they move between areas anyplace whenever. A RFID tag is joined into an item with the end goal of distinguishing proof utilizing radio waves. A few labels can be perused from a few meters away and past the viewable pathway of the peruser. These RFID labels can be dynamic or aloof and

they oblige a perusing gadget and interface PC to process data. Significance of RFID in logistics:

1. Allows the administration supplier to track things at every inventory network area, from plant to buyer.
2. Protects against duplicating and fake of merchandise by implanting an exceptional Electronic Product Code into every thing.
3. Proves the root and enhances treatment of merchandise. Shippers can utilize RFID labels to show power of a production network and to guarantee more prominent security in methods.
4. Tracks the measure of merchandise in the inventory network and serves to spare capital needed for conveyance and warehousing stockpiling expenses

RFID innovation –

1. Reduces the labor necessity extensively
2. Saves time as examining of cases/things happens quickly. RFID can check upto 1,000 crates every second though bar coding would take a couple of hours to output the same number of boxes.
3. Has an abnormal state of security as information can't be hacked

#### 3.3.4 Enterprise Resource Planning

ERP frameworks incorporate a few information sources and procedures of an association into a bound together framework. A regular ERP framework utilizes numerous parts of PC programming and equipment to attain to the mix. ERP instigates enough perceivability in the production network so that a proficient work process can be created. By pulling together and offering data from capacities, for example, buying, warehousing, and deals it serves to control costs.

### **3.3 FINANCIAL ISSUES**

India has been a communist nation with a welfare state. This outcome in financed evaluating of base. Notwithstanding this the expense base of India is exceptionally slender henceforth income era is not acceptable. Besides because of unified arranging model modern development is smothered. The agribusiness segment is hampered by reliance on yearly storm precipitation and absence of watering system and acceptable valuing instruments. All these variables put overwhelming monetary requirements on the state. To further exasperate the issue foundation improvement gets low need.

The main answer for this is to permit private accomplices to put resources into foundation advancement, allowing a sensible rate of return. Mulling over the above truths it can be reasoned that India has in reality perceived the significance of coordinated transport frameworks and has taken a few measures to start thinking responsibly. However the pace of improvement of base does not coordinate the pace of monetary development. Because of divided nation the will to seek after financial changes with energy and design is inadequate. There is no agreement about financial advancement strategies. While private venture has all the earmarks of being the main wellspring of account yet the extent of such plans is misty. The global Business group significantly more clarity and duty to advancement of framework else they will scout for better open doors somewhere else.

### **3.4 OPERATIONAL ISSUES**

This limitation highlights the nonappearance of cutting edge hardware, awful framework and solid transport administrations from the passage port to hinterland destinations which bring about lavish deferrals and higher expenses of area leg logistics bringing about loss of focused edge of Indian item. Because of the disagreeability of the MTD the administrators keep on issuing mode particular reports like bill of filling for the ocean leg and lorry or route receipts for the area leg of transport.

A few ICD's need satisfactory offices for the fare assistance organizations and phytosanitary endorsement issuing powers. Neither do all the ICD's offers trade advancement plans DEEC or the DEPS. There is no balanced rationale showed in posting sufficient custom authorities roadways. Sufficient level autos are not accessible for holder transportation nor the lines sufficiently solid to convey overwhelming burdens at high speeds.

The waterfront and short ocean delivery system is striking by its nonappearance. The vessels are old and inadequately prepared. Regardless of interest the development of waterfront delivery is confined because of deficient money and poor returns. The state of mind of the custom powers is additionally not exceptionally supportive as they are more energetic to control sneaking and income spillage.

### **3.5 INSTITUTIONAL ISSUES**

It is remarkable that Indian administration is extremely unbending and hesitant to surrender controls, the regulations and laws are unwieldy which add to postpones and costs. There are a few focal services managing the vehicle segment with over lapping power notwithstanding state and nearby government bodies adding their bit to disorder.

## 4. EXPORT STATISTICS

### 4.1 India's Export History

India's antipathy for worldwide exchange and dependence on residential variables to fuel development amid the fifties implied that fares assumed a littler part and India's fares lost its reality piece of the overall industry between 1951-1960 and 1961-70.

Till the mid-seventies, India's arrangement was prohibitive and centered around adding to the residential business, while fixing control on remote exchange (utilizing quantitative limitations as a device). Abnormal amounts of insurance coupled with an exaggerated household coin brought about a developing interest for imports and debilitated fares. Besides, India's fares additionally endured on the grounds that fare impetuses were just accessible to a set number of assembling commercial ventures and chose agrarian fares (which were subjected to fare obligations at different rates).

Also, large amounts of expansion and plan deficiencies coupled with the India-Pakistan war extremely influenced remote support and prompted an outside trade emergency.

Because of the event of two noteworthy oil stuns in the seventies, India encountered an ascent in the import expense of oil and in this way a contracting remote trade store position. The weight to gain outside money drove the administration of India to receive trade advancement arrangements as fare appropriations, (for example, obligation disadvantage, sponsored credit and direct sponsorships).

Amid this time, the end of the Bretton Woods framework prompted a deterioration of the gliding pound sterling. The Indian rupee, which was pegged to the British pound at the time likewise devalued, a reality which presumably added to the ascent in development of Indian fares in respect to worldwide fares.

This period was likewise described by a stronger import substitution procedure and more noteworthy government control over financial exercises, a method which was kept up even after the event of the India-Pakistan war in 1971 and the first oil value stun.

India's general exchange, on the other hand, encountered a setback somewhere around 1979 and 1981, as the import expense of raw petroleum dramatically multiplied, after the oil-value stuns. The Indian rupee consistently refreshing by right around 20 percent somewhere around 1979 and 1986 and had an antagonistic effect on its fare aggressiveness.

The liberalization of the Indian economy taking after the offset of installment emergency brought about real arrangement and conversion standard changes, which had a great effect and came about sharp increment in the offer of fares and imports somewhere around 1990 and



2008. Offer of fares in India's GDP expanded from 7.13 percent to 23.48 percent in 1990 and 2008, while the offer of imports (in GDP) ascended from 8 percent to 29 percent in the same period.

The following real setback for India's fares was the worldwide emergency of 2008. The breakdown of huge speculation banks around the globe coupled with high oil costs and rising expansion prompted a worldwide subsidence. India's exchange shortfall hosed in 2009-10 with a negative import development (-0.78 percent) without precedent for over two decades while fares were additionally affected, enlisting a negative development rate of 2.9 percent in 2008-09.

The worldwide log jam had its effect on the economy of the majority of the nations, including India. Accordingly, the exchange deficiency suddenly expanded from 356448 crores in 2007-08 to 533681 crores in 2008-09, an increment by just about 50 %. Nonetheless, amid 2009-10, fare recorded minor positive development at 0.57 % and import recorded peripheral negative development at 0.78 %, which was shockingly throughout the decade. Accordingly, the exchange shortage remained at Rs. 518202 crores with a negative development of 2.9 % in 2009-10. Nonetheless, these are worldwide lull impact, as after 2009-10, when the economy began grabbing, both fare and also import recorded generous development of 34.5 % and 23.5 % separately, bringing about Rs. 546503 crores exchange shortage with 5.46 % positive development in 2010-11. The exchange shortage further exacerbate in 2011-12 with supreme quality at Rs. 879504 crores and with 60.9 % yearly development more than 2010-11. Amid 2011-12, the fares quality was Rs. 1465959 crores against the import estimation of Rs. 2345463 crores, with yearly increments of 28.9 % and 39.3 % separately for fare and import. After the worldwide stoppage, the imports and in addition trades developed in the comparable route with imports quality expanded from Rs. 1363736 crores in 2009-10 to Rs. 2345463 crores in 2011-12 with an increment of 72 %, while amid this period, the fares developed at the rate of around 73 % from Rs. 845534 crores in 2009-10 to Rs. 1465959 crores in 2011-12. In any case the exchange shortfall developed all the more in 2011-12 with 61 % in spite of the fact that from 2009-10 to 2011-12, the exchange deficiency development was around 70 %.

## 5. TREND ANALYSIS OF EXPORTS (2010-2014)

For the analysis of Export Statistics, Statistical tool Trend analysis and regression is used to find the trend of exports in India from yr. 2010-11 to 2013-2014. For this, time series data ranging from 2010-11 to 2013-14. To achieve the objectives of this study, the statistical tools

Analysis of time series as follows:

$$\sum Y = a + b \sum X$$

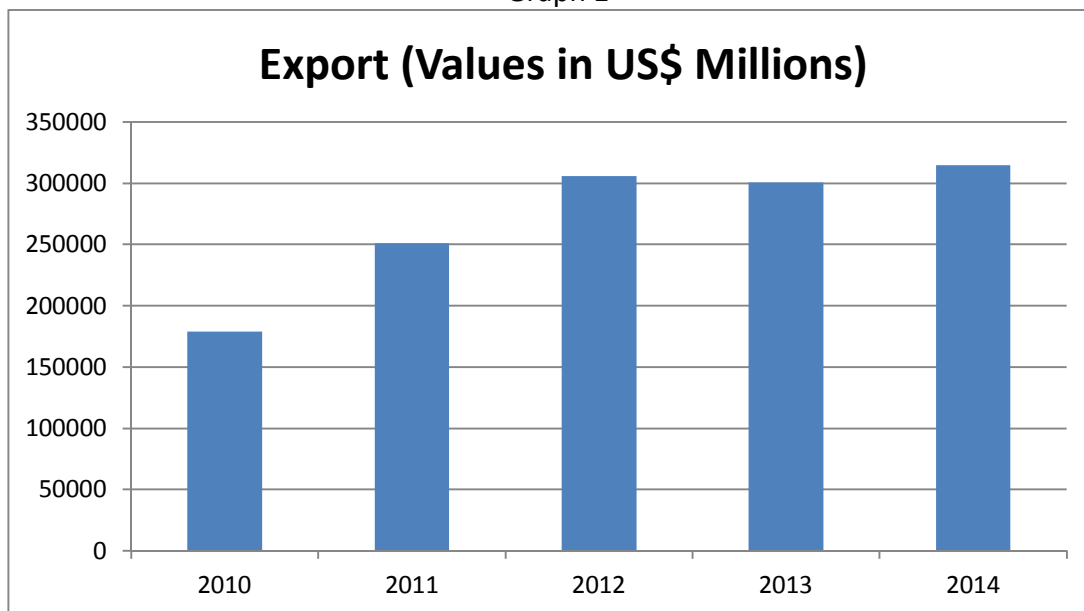
$$a = \sum Y \div N$$

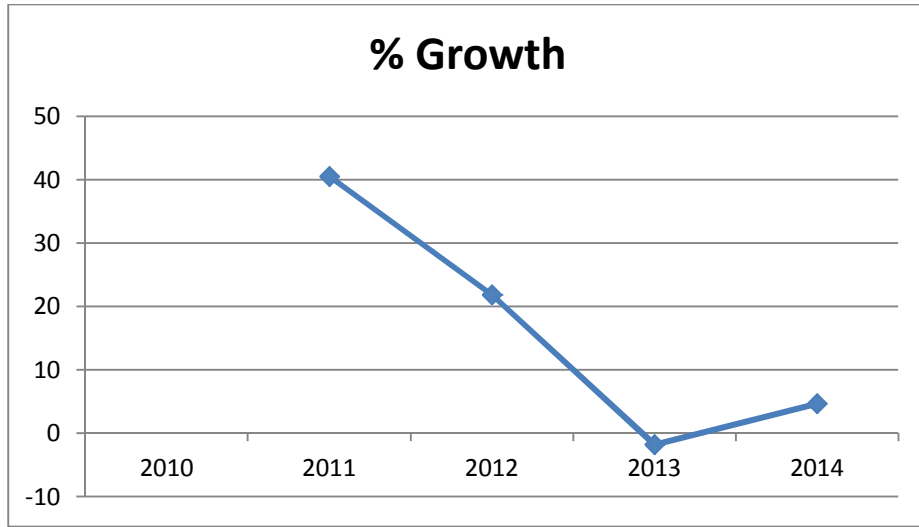
$$b = \sum XY \div \sum X^2$$

Table 2

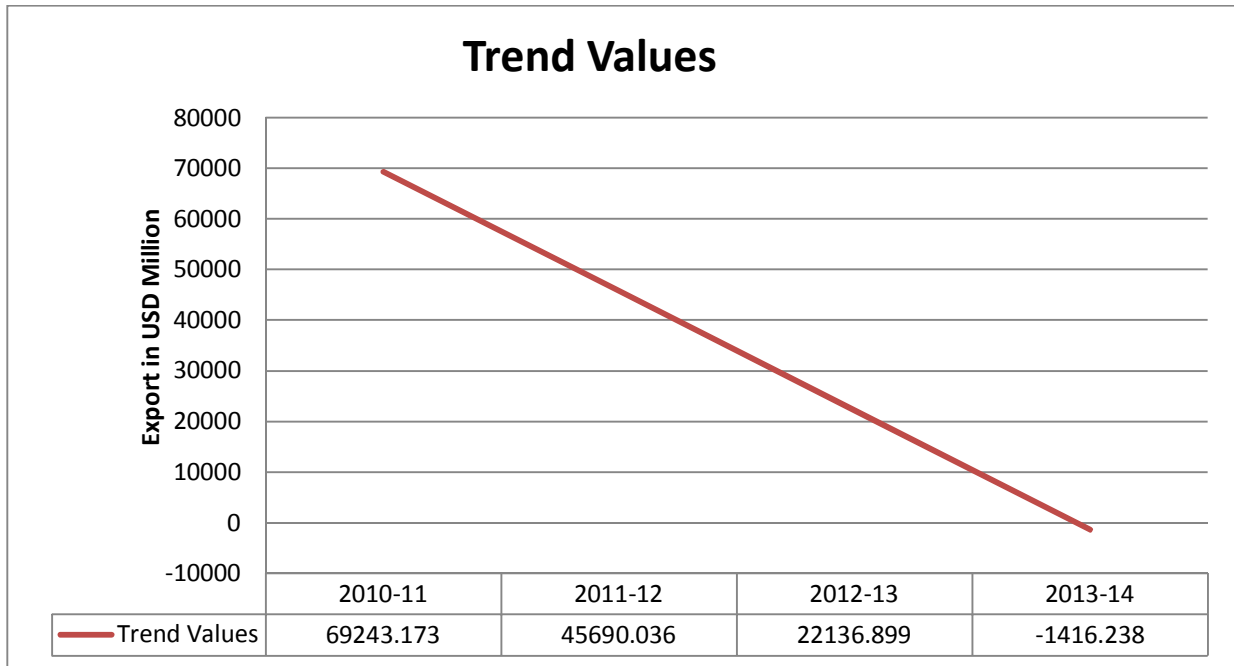
EXPORT PERFORMANCE (LAST 5 Years)			TREND ANALYSIS OF EXPORTS (2010-2014)						
Year	Export (USD Mn)	% growth	years	X	Y	xy	y <sup>2</sup>	x <sup>2</sup>	Trend values
2010	178751.4		2010-11	-3	72384.75	-217154	5239552033	9	69243.173
2011	251136.2	40.49	2011-12	-1	54827.74	-54827.7	3006081074	1	45690.036
2012	305963.9	21.83	2012-13	1	-5563.24	-5563.24	30949639.3	1	22136.899
2013	300400.7	-1.82	2013-14	3	14004.62	42013.86	196129381.3	9	-1416.238
2014	314405.3	4.66	<b>SUM (Σ)</b>	<b>0</b>	<b>135653.9</b>	<b>-235531</b>	<b>18401972446</b>	<b>20</b>	<b>135653.87</b>
			<b>a</b>	<b>33913.47</b>					
			<b>b</b>	<b>-11776.6</b>					

Graph 1





Graph 2

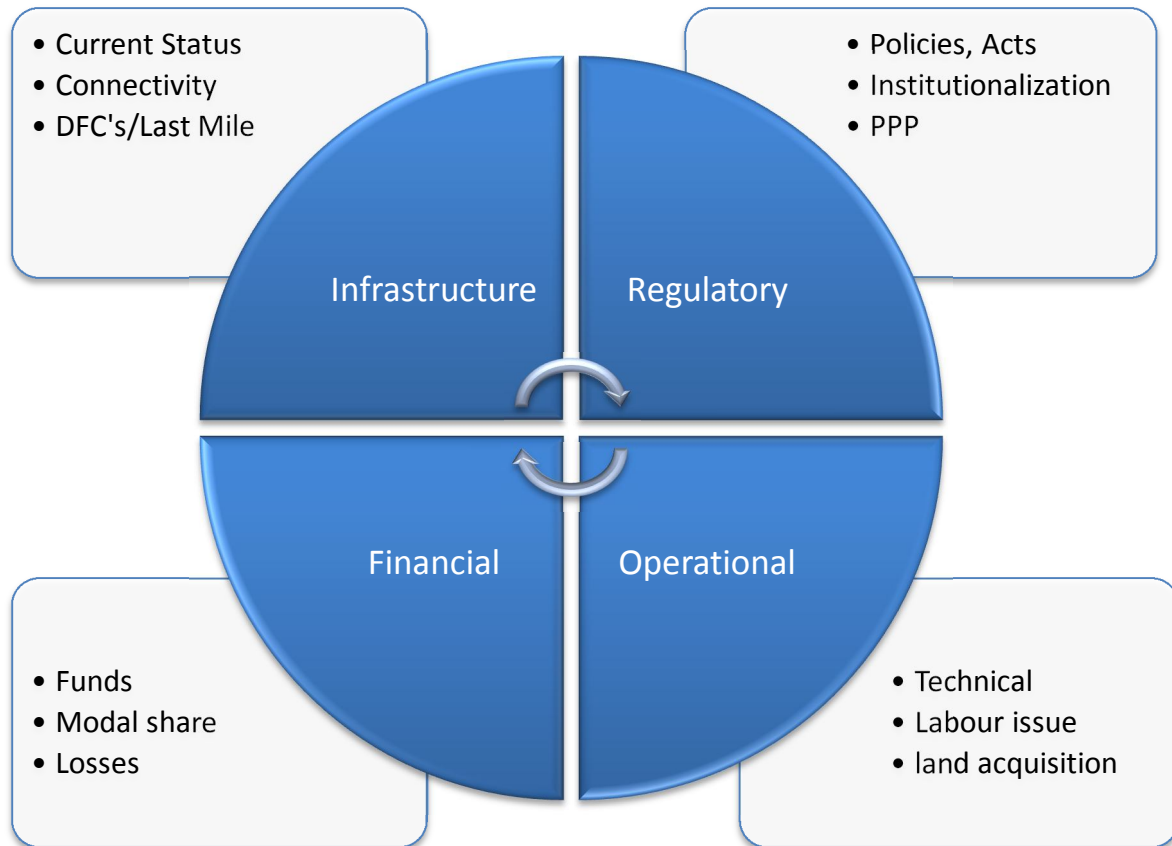


Graph 3

## RESULT

The result of this thesis is as follows:

1. The relation between the MMT Issues in India shows how issues are linked with each other in terms of affecting the overall MMT in India.



Matrix 1: Inter-relation between MMT issues

2. The trend analysis of exports of last 5 years clearly shows the declining trend which is due to the Multi-modal issues as one of the factors responsible for the decreasing rate of exports in India.

## CONCLUSION

In this world of globalization, Export of India in recent years has experienced a declining trend as has affected the India to portray itself on a world map in terms of export destination. Multi-modal Transportation is a major input to this decline as the issues related to it eventually impacted the exports also has great potential to affect exports in future and will directly leads low economic performance with almost 2.5times more imports than export values.

The conclusion of this Thesis is as follows:

1. Declining trend of exports has direct relation with Multi-modal Transportation issues in India.
2. The MMT issues responsible for various losses and decline of export values are:
  - a. Infrastructural constraints
  - b. Operational Issues
  - c. Regulatory
  - d. Technological lackness
  - e. Financial instability
  - f. Institutionalization

## RECOMMENDATIONS

The problem related to MMT in India can be reduced by adopting following strategies:

1. Shift towards balanced modal network
2. Allocation of funds within roads/rail
3. Trucking efficiency
4. Port Efficiency

## **BIBLIOGRAPHY**

- 1. Ray S.K., Transport Planning for Developing Countries, Prentice Hall of India, New Delhi, 1995.**
- 2. Report of the National Transport Policy Committee, Planning Commission, May 1980.**
- 3. Rahmatullah, Dr. M., Asian Transport Linkages and State and Institutional Involvement -Asian Transport Journal, June 1998.**
- 4. Sharma R.C., Need for National Urban Transport Policy, Urban Transport Journal, December 2001.**
- 5. Thoopal R.K., Vision 2010 Indian Railways, February 2000.**
- 6. Wilson Reginald, the Development of Transport Enterprises under Different Economic and Political Conditions -EDI World Bank.**
- 7. Thomson J Michael, Towards Better Urban Transport Planning in Developing Countries, 1983.**
- 8. India's Transport Sector: The Challenges Ahead, World Bank, May 2002.**
- 9. Repot of the Export Group on Indian Railways -Rakesh Mohan Committee, July 2001.**
- 10. Integrated Transport Policy -Planning Commission, October 2001.**
- 11. Road Development Plan, Indian Road Congress, November 2000.**
- 12. Poulouse AV, Financing Metro Rails and Metropolitan Commuter Networks, Asian Transport Journal, December 1998.**
- 13. Gupta DP, Perspective of Modernization of Road Development in India, AT Journal, December 1998.**

14. Ray SK, Planning, Growth and the Economy, Prentice Hall of India, October 2002.
15. Vankataraman N and Harbhanjan Singh -Planning for National Arterial Highways in India, RITES Journal, April 2001.
16. Anand V, International Logistic Solutions, IRT Journal, June 2002.
17. Shanti Narain, Indian Railways Program for the Century.
18. Gupta DP, Perspective on Rural Roads in India, RITES Journal, September 2001.
19. Annual Report and Accounts, Indian Railways.
20. The Economic Impact of Enhanced Multimodal Connectivity in the APEC Region, APEC Policy Support Unit, June 2010
21. IPA, 1997. Significant Ports of India: A Profile 1996-97, Indian Ports Association, New Delhi.
22. IPA, 2003. Significant Ports of India: A Profile 2002-03, Indian Ports Association, New Delhi.
23. World Bank, 2002. India's Transport Sector: The Challenges Ahead, Volume 1: Main Report.
24. Multi Modal Logistics Parks: A Key Factor for Economic Development of Country - R. K. Vishwakarma, 2010
25. Coordination of marketable strategies for significant ports in India, Indian Ports Association, Volume 1, 2007
26. Overview of Trends in Multimodal Transport, S. A. Al-Muhaisen, World Free Zone Convention-IZMIR 2005 Int'l Conference, 22nd April 2005
27. Logistics Sector: Present circumstance and path forward, Deloitte and Indian Chamber of Commerce, January 2012



- 28. Logistics distinct advantages: Transforming India's logistics industry, KPMG, 2013**
- 29. Multi-Modal Logistics in India : An Assessment, PHD Chamber**
- 30. TRANSPORT AND LOGISTICS: Water Transportation in India, KPMG.**
- 31. Review of Exports 2011, 2012, 2013, Department of Commerce, Ministry of Commerce & Industry**
- 32. STRATEGY FOR DOUBLING EXPORTS IN NEXT THREE YEARS (2011-12 to 2013-14), Department of Commerce, Ministry of Commerce and Industry.**
- 33. Export measurements, FTS(EXP)/BROCH/.Q. E./2009-2010, 2011-11, 2011-12, 2012-13, 2013-14, Directorate General of Commercial Intelligence & Statistics, Government of India, Ministry of Commerce**
- 34. Annual Report 2010-11, 2011-12, 2012-13, Directorate General of Foreign Trade (DGFT), Ministry of Commerce & Industry, GOI, New Delhi.**
- 35. Urban Transport in India: Issues, Challenges, and the Way Forward, Sanjay Kumar Singh, IIM Lucknow, 2013.**
- 36. OECD "Better Policies" Series, INDIA SUSTAINING HIGH AND INCLUSIVE GROWTH,**

