Reforms Required To Improve India's Logistics System

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Abstract

India's logistics industry plays a crucial role in the country's economic growth, providing the backbone for the transportation and distribution of goods. However, this industry faces significant challenges, including inefficiencies, high costs and many more. To address these issues, Prime Minister Narendra Modi unveiled the National Logistics Policy, aimed at reducing logistics costs from 14% of GDP to around 8% and aligning India's logistics sector with global standards. The key focus of this plan is digitization and the creation of a centralized platform to streamline logistics operations. This policy paper outlines the objectives, strategies, and challenges associated with the National Logistics Plan, emphasizing the need for complementary infrastructure development to achieve its goals.

Introduction

India spends around 14% of its GDP on logistics costs and is in desperate need of reducing the cost to a global benchmark of 8-10% to meet the needs of the stakeholders and international companies. According to the World Bank Logistics Index of 2022, India is ranked 38th in logistics cost which is a significant improvement from its previous ranking of 44th in 2018 and 54th in 2014. Logistics management is an area of research that has been getting increasing attention from academicians and practitioners over the last two decades since it leads to reduced operational costs, improved delivery performance and increased customer satisfaction levels, thereby making an organization more competitive in terms of cost, quality, delivery and flexibility. The logistics sector serves as the linchpin of India's international trade, facilitating the diversification of exports and bolstering the manufacturing of products. Changing government policies on taxation and regulation of service providers is going to play an important role in this process. The paper discusses about the current Indian scenario of logistics in India, problems faced by each sector, the policy introduced to tackle all these challenges and some suggestions to improve its implementation based on learnings from other countries.

Indian Scenario: Current Scenario

Logistics is the backbone of the economy, ensuring the efficient and cost-effective flow of goods. It thrives on the foundation laid by other sectors of the country, and India's logistics industry is poised for exponential growth. Orchestrated by the symphony of infrastructure, technology, and innovative service providers, the logistics industry can empower businesses to optimize logistics costs and deliver exceptional service. The Indian logistics industry is expected to reach $563 billion by 2030, growing at a compound annual growth rate (CAGR) of 9.4%.

Despite economic challenges, with the right investments and policies the logistics and warehousing industry continues to thrive, buoyed by the growth of retail, e-commerce, and manufacturing logistics.

Problems in the Indian Logistics System

The reality of Indian logistics system is a critical nightmare for Indian businesses despite it being a critical pillar of our Indian economy. The logistics sector which appears to be highly unorganized, according to the government, there is a lot of complexity in the sector with more than 20 government agencies, 37 export promotion councils, and 500 certifications which results in delays in the services provided by the various industries.

Looking at the transporting per metric ton Kilometer Cost difference between different modes of logistics in 2021:

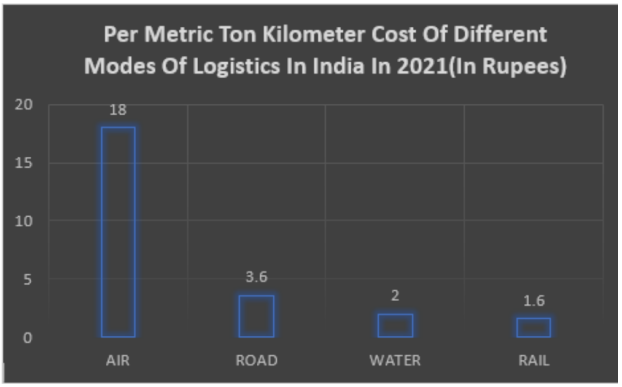

Figure 1.

It costs around ₹18 per metric ton per kilometre by Airways. By Road is ₹3.6 and Rail is by far the most economical mode of transport with just ₹1.6 per metric ton per kilometre (***Figure 1***). Looking at the statistics, it should be clear that the majority of goods are transported by rail. But the truth is around **71%** of goods are transported by road and only **17.5%** of goods are by rail and only a small segment of goods are transported by waterways (**Figure 2**). This is because the Indian government don't have enough rails or trains to cater to the demand for the quantity of goods being transported in India. Here's some data, The Indian Railways transported more than 1.29 billion tonnes of freight in 2022, up from 1.21 billion tonnes in 2021, this is a 6.6% increase; nonetheless, despite the increase in freight traffic, there was a backlog of almost 18 million tonnes of freight to be transported in 2022. Adding to this, the Indian Railways' freight utilization ratio was 95% (means that the Indian Railways was using 95% of its capacity to transport freight). The freight utilization ratio is a key indicator of the efficiency of a railway system. A high freight utilization ratio suggests that the system is operating at close to its capacity, which can lead to congestion and delays. The Indian Railways' freight utilization ratio has been increasing in recent years, which puts additional strain on the system. In order to improve the efficiency of the Indian Railways and reduce the freight utilization ratio, the government needs to invest in new infrastructure and is in need of new rail lines. According to a study by the IR Board, India will need to build an additional 20,000 kilometers of rail track by 2025. Secondly, both passenger and good trains in India run on the same track with the passenger trains being given more preference over the good train which delays freight good train

by 3 to 4 days to reach it's destination. Like this major reforms are required in each sector of logistics for the growth of this industry. Here are some of the issues discussed in particular logistics sectors:-

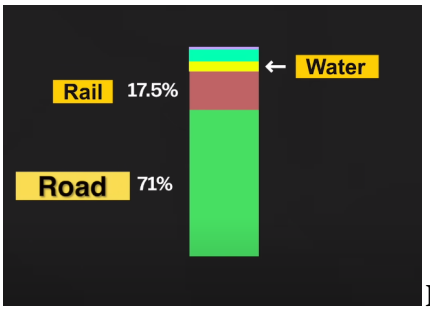

Figure 2.

Road Transport:

Road transportation accounts for approximately 60% of the freight movement in India, a significant proportion of which is interstate cargo movement. The movement is dependent on national highways, which constitute only about 2% of the road network of India but carry 40% of total traffic. The average speed of trucks in India (30 km/h) is about half compared to the average speed of trucks in the USA (57 km/h). In many developed countries, expressways have been developed to facilitate high-speed freight movement by linking important cities, ports, and industrial centres. However, in India, the expressway network is still largely in the planning stage. India's road network in major urban areas, while extensive, often suffers from poor maintenance, inadequate capacity, and limited connectivity in remote areas which leads to road congestion and inefficiencies causing delays in the movement of goods and negatively impacting delivery schedules. Frequent inter-state checkpoints, toll booths, and variations in state-level taxation create delays, increase costs, and result in a lack of uniformity in regulations. High accident rates on Indian roads are a significant concern, leading to cargo damage, injury, and loss of life. Improving road safety standards is a crucial step that must be taken.

Railways:

The Indian Railway network, which is known as the lifeline of India, is oversaturated. If rail lines were originally built to support 100 trains, now anywhere between 115 to 150 trains are using it and whenever there is a clash between the schedule of a passenger train and freight train, the Indian railway system always lets the passenger train go first leading to delays, limited cargo capacity, and challenges in scheduling freight transport. Specialized products, such as special types of steel required for automobile production, cannot be carried by special wagons, the reason being not being easily available. As a result, these high-value products have to be carried by trucks as the existing wagons do not offer the kind of protection that they require. Connectivity between railheads and cargo destinations is often inadequate, requiring additional road transportation, which can be time-consuming and costly. Many railway lines and stations

are in need of modernization and technological upgrades to improve efficiency. The average speed of trains carrying goods is **25km/h** which is way slower speeds compared to passenger trains, which can lead to longer transit times. The Indian railway industry has a preference for customers who can provide full train loads. Unlike in some other countries, railways in India no longer run mixed trains that can carry different types of cargo due to operational inefficiencies. This makes railway carriage difficult for industries that cannot provide full train loads.

Way back in 2006, India embarked on a project that would lay dedicated railway tracks, known as **Dedicated Fright Corridor (DFC)** for cargo along the length and breadth of the country. Goods would be transported at 70kmph instead of 25kmph and freight capacity would double to 13,000 Tonnes. Taking into consideration the Eastern and Western lines of the DFC, the initial deadline for completion was 2017 but it was delayed 5 times and delays led to huge costs (An estimate of ₹28,000 crores has soared to a whopping ₹1.24 lakh crores now). There is a recommendation for greater transparency in the operations of the DFCs to help build trust with logistics providers and shippers. This could include sharing data on train schedules, freight volumes and transit times

Waterways:
Vessel Turnaround Time (VTT) is the total amount of time that a vessel spends at a port. It is measured from the time the vessel arrives at the port until the time it departs. The turnaround times for ships in India are high (~62 hours in 2020-21, ~8 hours in Japan). This is because of overcrowded berths and delays in cargo evacuation due to poor infrastructure. Inconsistent regulations, safety standards, and port infrastructure across various waterways lead to inefficiencies in water-based logistics. In addition, time-consuming custom clearances add to the delay. Coastal shipping in India gets hampered due to the weak land side and port facilities. Insufficient depth at ports discourages large vessels, thus curbing the large-scale use of it for freight movements. Despite potential advantages, inland waterways in India are underdeveloped and face challenges in terms of navigability, port infrastructure, and maintenance. Adding to that, waterway transport is highly susceptible to monsoon season disruptions, resulting in the need for alternative transportation modes during adverse weather conditions. Because of all this Logistics Companies suffer.

The Sagarmala Project, initiated to modernize Indian ports and develop the inland waterways, has encountered significant challenges in its implementation. Despite a comprehensive list of 802 projects initially outlined, as of the present day, only 181 of these projects have been successfully executed. Furthermore, the connectivity between these revamped ports and their hinterlands remains a major concern, with a mere 13 out of 98 road-to-port connectivity projects completed. The primary impediment to the timely realization of these projects is the lack of efficient inter-ministerial coordination. Addressing these coordination issues is

imperative to ensure the timely and successful completion of the Sagarmala Project and the realization of its intended benefits for India's logistics and maritime sectors.

Airways:

The Indian air transport sector faces several pressing challenges. Firstly, limited dedicated cargo infrastructure at airports results in inefficiencies in cargo handling, storage, and distribution, limiting the sector's capacity to handle high volumes of goods. Additionally, airfreight in India is considerably more expensive compared to other transportation modes (₹18 per metric ton per kilometre for air), making it a less cost-effective choice for many businesses. The sector grapples with rigorous customs and security procedures, leading to delays in cargo clearance and increased operational costs. Furthermore, congestion issues, particularly at major airports, can disrupt cargo movements, as limited parking space and takeoff slots hamper the seamless flow of goods. Finally, the energy-intensive nature of air cargo contributes to environmental concerns, necessitating more sustainable practices to reduce the sector's environmental footprint. Addressing these challenges is vital to enhancing the efficiency and competitiveness of the Indian air transport sector and ensuring its growth in the years to come.

Warehousing Sector:

In addition to the poor transportation infrastructure the storage infrastructure in India also needs significant improvement. The warehousing industry in India is extremely disjointed and disorganized. Nearly 90% of the market is made up of disorganized companies, and a significant percentage of warehouses are smaller than 10,000 square feet. The total cost of logistics operations can be reduced by 15% to 20% with the help of an efficient warehouse. The warehouses often lack essential features like leak-proofing, security systems, and proper racking facilities. Most of the warehouse operators are small to mid-sized entrepreneurs with limited financial resources. The only large-scale warehousing owners are government agencies such as the Central Warehousing Corporation and State Warehousing Corporations, but their focus primarily revolves around food grain storage. Additionally, there is a shortage of warehouses due to challenges in securing suitable land at reasonable prices.

The state of infrastructure for Inland Container Depots (ICD) and Container Freight Stations (CFS) in India is in dire condition. Setting up these facilities is a challenging task due to the scarcity of suitable land, which involves overcoming various land consolidation obstacles, leading to many logistics companies with intentions to establish ICD/CFS often failing to do so. Moreover, existing facilities face several issues, including older facilities located within city boundaries, restricting truck movement during the day, poor condition of approach roads that hinder efficient cargo evacuation, and problems such as insufficient parking space and a lack of available land for expansion.

The situation is no better for cold storage. Despite a significant demand from various sectors, including retail, pharmaceuticals, chemicals, and agriculture, cold storage facilities are unable to keep up with the pace of growth. A considerable portion of the fruits and vegetables produced in India goes to waste, estimated at up to 40%, primarily due to the inadequate availability of cold storage. Moreover, the concept of multi-modal logistic parks, which were envisioned to meet the evolving requirements of integrated logistics, transportation hubs, and value addition, has failed to gain traction. The number of such facilities remains far below the actual demand, primarily due to the challenges in consolidating large land parcels and a lack of government recognition for the logistic park concept.

Lastly, the infrastructure for warehousing, cold storage, and multi-modal logistic parks in India faces various obstacles and challenges, leading to a poor state of logistics and transportation facilities. The Indian warehouse market was valued at $14.65 billion in 2019 and is expected to expand at a compound annual growth rate (CAGR) of 9.82% to reach $19.53 billion by 2025. This growth is expected to be achieved by opening the sector to private investments and ensuring that the benefits of private companies' contributions are relevant.

Tax Structure Issues:

The Indian Logistic Industry Before GST

It is important to give a glimpse of the pre-GST logistic scenario in India to understand the post-GST framework. The logistics industry comprises inbound, outbound manufacturing segments and the supply chain in India. The logistics business faces various obstacles, one of these issues was the complex tax structure; there were five taxes, namely Excise Duty, Service Tax, Sales Tax/VAT/CST, Customs Duty and Entry Tax/Entertainment Tax. Moreover, any freight that moved in 29 Indian states was taxed multiple times as per various geographical locations. Similarly, dishonest practices like bribery and corruption made the industry handicapped in terms of long delivery time, fulfilling the vested interest of various self-created groups and regional strikes due to social or political insurgencies.

The Indian Logistic Industry after GST

GST created a bigger impact on the logistics industry of India in the following fields:

1. **Burden of interstate tax:** Earlier, the pre-GST complex tax structure was a big burden for the transporters as they were asked to pay indirect taxes at different rates in all the 29 states of India. Apart from this, 2% corporate tax was levied in any inter-state good transfer. But GST has brought a unified tax structure across all the states irrespective of any geographical differences. Thus, comparatively, the previous tax burden has decreased to a large extent.

2. **Moving towards an organized sector:** GST is inspiring the large market players to emerge and control the complete supply chain. This new tax structure is discouraging the small

and medium market players but at the same time transforming the logistic sector to an organized structure.

3. **A faster logistic time:** Due to the complicated indirect tax structure, the trucks were delayed in reaching their destinations on time before GST's implementation. But the uniform tax structure of GST has decreased the transportation time. The burden of border check posts is no more a headache for the transporters. This is increasing the operational efficiency of the industry along with fast deliveries and low logistic cost. The World Bank stated that India can save upto 30-40% logistic cost by eliminating the tolls and check posts.

4. **The warehousing pattern:** A centralized warehousing and an integrated tax system is making the messy supply chain simpler than before. The warehouse optimization system is minimizing the inventory as well as logistic cost. It is expected to minimize this logistic cost by 1.5-2.00%.
5. **Developing forward:** The GST tax rate is for air freight (export), warehousing and e-commerce are 18% whereas the pre-GST indirect slab was 15%. 5% GST slab is decided for road transportation and ocean freight services. The government has introduced an e-way bill for smooth truck movement and this bill will be implemented from October 2017. The business players are changing their supply chain strategies in compliance with GST. For an unorganized sector like logistic, lots of hand holding are required to understand the gap between the compliance need and operations. A least minimum six month is an ideal time for the industry to move on to a completely new tax structure like GST.

Technology and Skills:

The logistics industry is facing challenges due to low rates of technology adoption and poor skill levels. However, the industry is now paying serious attention to technology with the use of RFID, vehicle tracking technologies, warehouse management systems, etc. While acceptance of technology is not an issue anymore, the integration of IT and domain requirements needs to be resolved. Automation in processes is still in its infancy. Further progress is dependent on a certain level of standardization which is made more difficult by the fragmentation in the industry. This drawback needs to be tackled as soon as possible. In addition to technology-related issues, skill levels in the logistics industry also require urgent upgrading. Courses focusing on the logistics industry remain few and far between. Also, the logistics industry is still not looked at as the industry of choice for young graduates, thereby making hiring quality professional manpower challenging. Some of the skills required in this sector are technology skills, driving skills including safety procedures, industry understanding, and multi-operator skills.

National Logistics Policy (NLP)

"If we have to increase our export cost, we have to decrease our logistics cost and only after decreasing our logistics cost, we can make "made in India" dream come true" - ***Nitin Gadkari (Minister for Road Transport & Highways, Government of India)***

In an effort to drive reforms in the Indian logistics sector, Prime Minister Narendra Modi unveiled the National Logistics Policy (NLP) on September 17, 2022, in New Delhi's Vigyan Bhawan. This visionary policy seeks to address the multitude of challenges faced by the sector, primarily aiming to reduce logistics costs from the current high of 13-14% of GDP down to levels comparable with global standards of 8% by 2030. The policy is a pivotal step toward making Indian products more competitive, both within the domestic market and on the global stage, with a focus on enhancing ease of doing business and improving the overall quality of life. This comprehensive reform will significantly boost efficiency and value addition across various industries.

The NLP is the outcome of eight years of dedicated development, representing a significant shift in policy formulation, where groundwork precedes implementation. The core objective is to streamline the logistics ecosystem and promote cost efficiency, underpinning economic growth, job creation, and global competitiveness.

This visionary policy is projected to stimulate remarkable growth, with estimates indicating that the Indian logistics market will expand to $215 billion within the next two years, compared to its current worth of $160 billion. Furthermore, Investment Information and Credit Rating Agency of India Limited (ICRA) estimates that this sector will grow at a Compound Annual Growth Rate (CAGR) of 10.5% through 2025 after growing at a CAGR of 7.8 per cent over the past five years, offering significant employment opportunities, particularly with an expected 5% workforce growth over the next five years with 22 million employed already with work.

The four significant steps to be undertaken for NLP include:

1. **Integration of Digital System (IDS):** There will be digital integration of different systems of seven various departments (like road transport, railways, aviation, commerce ministries and foreign trade)
2. **Unified Logistics Interface Platform (ULIP):** This ensures shorter and smoother cargo movement and enables the exchange of information confidentially on a real-time basis. This National Industrial Corridor Development Corporation (NICDC) Logistics Data Bank Project has been leveraged.
3. **Ease of Logistics (ELOG):** This will enable and ensure the ease of logistics business through transparency and accessibility.

4. **System Improvement Group:** This will monitor all logistics-related projects on a regular basis.

Objectives of National Logistics Policy

The National Logistics Policy (NLP) is expected to bring about a series of changes in the Indian logistics sector, as highlighted in the following:

1. **Cost Reduction**: The National Logistics Policy seeks to optimize costs across the entire logistics ecosystem. By implementing streamlined processes, reducing delays, and enhancing coordination, the policy aims to significantly lower logistics costs. This cost reduction will benefit businesses by making their operations more cost-effective, ultimately contributing to the ease of doing business in India.
2. **Competitiveness Boost**: By making Indian products more cost-competitive both within the domestic and international markets, the NLP is set to drive a substantial improvement in the country's industrial and trade competitiveness.
3. **Policy Development Preceded by Groundwork:** The NLP signifies a shift in policy formulation, where groundwork precedes implementation, ensuring that policies are well-informed and effectively executed.
4. **Enhanced Ease of Doing Business:** The policy focuses on expedited last-mile delivery, resolving transportation-related issues, saving manufacturers time and money, and preventing wastage of agricultural products. These improvements will make it easier to conduct business in India.
5. **Improved Coordination:** The NLP emphasizes the need for better coordination among various ministries and government agencies, reducing delays and inefficiencies in project execution.
6. **Holistic Planning and Implementation:** The NLP seeks to establish world-class infrastructure by including all relevant stakeholders in holistic planning and implementation. This approach promotes synergy and efficient project execution.
7. **Strengthening Export and Manufacturing:** The policy aims to reduce logistical problems, drive exports, and benefit small businesses and the workforce. This will foster employment generation, inter-state and international exchange of goods, and economic growth.
8. **Shift from Road Transport:** The NLP encourages a modal shift away from the current over-reliance on road transportation, promoting greater use of railways and waterways which is going to reduce the cost of transport of freights significantly.
9. **Infrastructure Development:** Significant developments in Indian ports, including increased capacity and reduced cargo ship turnaround times, will further enhance logistics infrastructure.

10. **Multi-Modal Hubs:** The establishment of 35 multi-modal hubs will enable seamless freight movement and expedite logistics operations.
11. **Environmental-Friendly Transportation:** Focusing on waterways the environmentally friendly modes of transportation align with the growing need for sustainable logistics alternatives.
12. **Logistics Efficiency Enhancement:** The policy, combined with technology adoption, will streamline logistics operations through initiatives such as the paperless export-import trade operations by the e-sanchit portal, faceless customs evaluation, E-way bills, FASTag, and the Goods and Services Tax (GST).
13. **Growth Across Sectors:** As logistics operations improve, manufacturing, production, warehousing, and infrastructure industries will experience growth, stimulating the commercial real estate and industrial parks sectors.
14. **Augmented Warehousing Capacity**: The NLP policy will boost warehousing capacity, enabling efficient storage and distribution of goods. This capacity expansion will help take products closer to their consumption points, further streamlining the logistics supply chain and catalyzing growth across various sectors.
15. **Unified Regulatory Environment:** The NLP aims to establish a unified regulatory environment and institutional framework, which will support the development of multi-modal logistics parks (MMLPs) and improve first and last-mile connectivity, ensuring efficient logistics facilitation.
16. **Alignment with Other Initiatives:** The NLP's transformational capacities further increase when combined with previous connectivity and infrastructure improvement programs like
    a. **PM Gati Shakti** - The Gati Shakti Programme's goal is to implement infrastructure connectivity, including roadways and railways projects across the nation, in a coordinated manner.
    b. **The Sagarmala** - envisions using the potential of the coastline and waterways to reduce the amount of infrastructure needed to reach their targets.
    c. **The Bharatmala** - focuses on reducing critical infrastructure gaps to increase the effectiveness of road traffic circulation across the nation.

    The above core initiatives will help create a single-window e-marketplace as a one-stop shop for relevant knowledge and information exchange that can ease logistics facilitation matters in the country.

These changes represent a holistic approach to transforming the Indian logistics sector, making it more efficient, cost-effective, and globally competitive while fostering economic growth and job creation. The National Logistics Policy is a comprehensive initiative that addresses cost and inefficiency by establishing an overarching, interdisciplinary, cross-sectoral, and

multi-jurisdictional framework for the development of the entire logistics ecosystem. Central to India's international trade, logistics plays a pivotal role in diversifying the country's exports and facilitating the movement of goods both domestically and globally. The NLP aims to promote seamless logistics, enhance the competitiveness of Indian industries, and minimize logistical challenges, ultimately fostering increased exports and benefiting small businesses and their workforce. This policy marks a significant step towards positioning India as a global manufacturing powerhouse and a prominent logistics hub. Notable advancements have already been made in Indian ports, significantly increasing capacity and reducing cargo ship turnaround times, thereby enhancing the efficiency of logistics infrastructure. Additionally, the establishment of forty air cargo ports and equipping thirty airports with cold storage facilities further underlines the commitment to bolstering logistics capabilities. The Comprehensive Logistics Action Plan (CLAP) supplements the NLP, aiming to position India among the top 25 countries by 2030 in the Logistics Performance Index (LPI). Industry observers are confident that the NLP will introduce a transformative approach, enhancing supply chain efficiency. With India's ambitious goal of becoming a $5 trillion economy by 2024-25, connectivity and robust infrastructure are crucial. As logistics improve, other industries such as manufacturing, production, automobiles, warehousing, and infrastructure development will flourish, spurring growth in commercial real estate and industrial parks.

The backbone of India's international trade is logistics, which aids in the diversification of not only the country's exports but also of products manufactured in the countries. The NLP thus aims to promote seamless movement of goods and enhance the competitiveness of Indian industries. The programme aims to ensure that logistical problems are minimized, exports increase significantly, and small businesses and the people who work in them gain profit. All this will augment the economy in various ways like employment generation, inter-state, and international exchange of goods. This policy move will bring India closer to becoming a global manufacturing powerhouse and pave its way to becoming a logistics hub.

What India Can Learn from Other Countries (Recommendations)

Globally, many countries and enterprises have undertaken initiatives to bring about a sea change in their logistics strategies to become more competitive and there is ample evidence of the significant benefits received. India can take a leaf from the book of successful case studies globally to give the NLP a quick start for a faster and more effective implementation. Defining a few of them below:

1. **Robust Integrated Platform**

Several large-scale initiatives to develop well-connected transportation infrastructure such as Gati Shakti, the National Master Plan for multimodal connectivity, a digital platform for integrated planning and implementation of infrastructure connectivity projects, the

Bharatmala Pariyojana (34,800 km) which aims to optimise the efficiency of freight and passenger movement on highways and Sagarmala's whose objective is to unlock the potential of India's coastline and waterways with port-led development at its core should be implemented in well efficient order and coordinated manner.

To bring a perspective, Germany, about one-tenth the size of India, has an integrated transportation infrastructure consisting of a rail network of 40,327 km; highways, railways and inland waterways of nearly 60,000 km; a road network of 12,000 km; and inland waterways of 7,450 km.

2. **Digital Transformation**

The pandemic accelerated tech adoption in sectors that depended heavily on logistics such as retail, e-commerce, FMCG, auto, healthcare and manufacturing. Using software tools such as Warehouse Management Systems (WMS), automated guided vehicles, robots, and automated storage and retrieval systems will further improve efficiency (labour, productivity, energy use, inventory management, route planning, order grouping, etc.) and reduce overall expenses.

3. **Large Smart Warehouses**

Very few sizable smart warehouses have been built in India due to land use regulations and the expensive cost of land. Such warehouses will promote efficiency, automation, and consolidation. Automated guided trucks, for instance, have the potential to reduce employee travel time by up to 90% and substantially improve pickup efficiency. India should actively pursue the establishment of large smart warehouses to modernize its logistics infrastructure and reap the associated benefits.

4. **Truck Fleet Modernization**

In many countries, multi-axle trucks with high payloads have played an important role in reducing logistics costs. In India, at present, more than 60 per cent of the cost of logistics is toward trucking. Formalization of the trucking industry as well as the upgradation and modernisation of the fleet needs urgent attention.

5. **Resolving Port Congestion**

India's goal of moving up the global value chain and maintaining its competitiveness in trade depends heavily on the smooth operation of its ports. However, the efficiency of Indian ports is not good. In 2021, the mean turnaround time for ships at Indian ports was 22 days, whereas in China it was only 5 days.

India can improve the effectiveness of its ports by boosting competitiveness, capacity, and connectivity, taking a cue from Singapore. After China, Singapore has the second-largest liner shipping connectivity; it has made investments in port facilities and technologies. Because of this, its ports can handle the biggest container ships and benefit from economies of scale. The

country's logistics policy should concentrate on enhancing cargo handling capability, strengthening mainland transit connectivity, and lowering logistical costs in order to increase trade competitiveness, particularly for made-in-India items.

6. Fast Railway Network

China, the Logistical superpower in the world, started building a highly advanced 350 Km/h Freight Bullet Train. In 2022, as India was moving like a snail with its corridor project which only has the capability of going 75km/h, the Chinese have already become operational with the Bullet Train. Indian Government to enhance the efficiency and capacity of the rail freight sector, should prioritize investments in dedicated freight corridors, double-stack container trains, intermodal transportation, and advanced technologies like Automatic Train Operation (ATO), Positive Train Control (PTC), and Advanced Train Management Systems (ATMS). Additionally, expanding the rail network, streamlining freight terminal operations, reducing bureaucratic hurdles, and promoting rail freight adoption among businesses through incentives can further strengthen the sector's competitiveness and contribute to economic growth by reducing transportation costs.

India Railways should be connecting towns in India as well as neighbouring countries like China does. In conclusion, it is imperative for the Indian government to prioritize the development of a higher-speed network in order to keep up with the rapid pace set by China.

7. Developing Service Providers

All things considered, logistics is a very intricate process with numerous moving components, some of which are better handled by professionals like freight forwarders and third-party logistics (3PLs). Developing and promoting 3PL and 4PL service providers might help with challenging supply chain issues. Other nations have had success with this model. For instance, DHL Supply Chain Solutions is one of the world's leading 3PL and contract logistics companies. It includes a broad range of sectors, including engineering, manufacturing, consumer retail, and automobiles. Similarly, Australia-based Healthcare Logistics is a 3PL and 4PL service provider with a focus on the healthcare industry. It provides answers for secondary packaging, clinical trial logistics, distribution, and other issues. Additionally, there are experts in other rapidly expanding fields including e-commerce, food logistics, heavy machinery, etc.

8. Capacity Building and Skills

Technology-intensive operations do not diminish the fact that logistics service providers face a shortage of human resources and talent with the requisite knowledge and skill set. The labor-intensive logistics sector employs about 22 million people but only 4.7 per cent of these are formally skilled. Having assessed the lack of adequate sector-specific skilling infrastructure, the government has identified over 100 universities across the country where relevant courses on

logistics can be integrated into regular curriculums. While Union and state governments will have to take the lead in promoting skilling in logistics to improve the service levels in the sector, there is a need to set up universities and centres of excellence that offer basic and advanced training programmes in logistics.

Conclusion

Significant advancements have already been witnessed in Indian ports, with increased capacity and reduced cargo ship turnaround times. Forty air cargo ports and thirty airports equipped with cold storage facilities have been established, along with the development of 35 multi-modal hubs across the nation. In India's pursuit of becoming a $5 trillion economy by 2024-25, connectivity and robust infrastructure are paramount. The future of the Indian Logistics Industry lies ultimately in value propositions for the customer. Value solutions can be engineered only if the complex strands of the supply chain mesh together seamlessly. These solutions are expected to command a premium but also come at a cost-conscious Indian market first has to be made to appreciate the value of premium services first. This would result a reduction in cost down the line, which can only happen when most of the deficiencies mentioned above are removed. Logistics companies can leverage further economies of scale when operations are expanded. This may require industries to collaborate with logistics service providers to nurture their businesses, possibly in a way the automobile industry in India nurtured the auto-component companies. The future is bright for logistics industry in India- the expectation is that a tipping point for the industry will soon be reached which will propel it to greater heights.

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