



## PROGRESSION AND OPPORTUNITY OF LOGISTICS INDUSTRY IN INDIA

<sup>1</sup>Ramlal Naik L, <sup>2</sup>S P Singh

<sup>1</sup>Supply Chain Professional, <sup>2</sup>Manufacturing Professional

<sup>1</sup>Mumbai, Maharashtra, India

**Abstract:** For industries, logistics has emerged as an essential pillar of the value chain, and it is essential that they have the right product in the right quantity and quality at the right time, in the right place, in the right condition, and at the right price, otherwise they wouldn't be able to compete on the market. Fulfilling these standards is becoming increasingly difficult in a continuously changing and uncertain logistic environment. New methods, goods, and services are needed to meet the requirements of exceptionally dynamic and uncertain logistics markets and extensive logistics networks. New logistics difficulties and opportunities arise as a result of today's customer behaviour. Its application obviously necessitates a rethinking of several fundamental principles in traditional logistics. The objective of this research is to identify significant barriers to the logistics sector's growth, deliberate unconventional solutions such as unified end-to-end logistics and uptake and evaluate the feasibility of establishing of industry 4.0 revolution. The Indian logistics sector certainly has problems, and more has to be done. Innovative models, new technical systems, worldwide best practices, research, and a well-thought-out implementation strategy can all assist to strengthen the sector, hence stimulating growth and employment in the country.

**Index Terms - Industry 4.0, revolution of logistics processes, digitalization, Logistics Networks**

### I. INTRODUCTION

Logistics is the management of the movement of supplies between the point of origin and the point of utilization to meet the requirements of consumers or firms. In logistics, actual commodities such as materials, equipment, and supplies, as well as food and other usable things, are controlled. In general, logistics refers to the complete preparation and implementation of a complicated task. Logistics supervision is a subsection of supply chain engineering and supply chain management that plans, implements, and monitors the efficient, actual forward and reverse stream and storage of services, goods and associated data between the point of source and the point of consumption to encounter customer requirements. Dedicated simulation software can demonstrate, estimate, envision, and adjust the complication of logistics. The desire to save resources is a typical goal in the logistics industry. Customers can use logistics service providers (LSPs) for transportation, inventory management, packaging, warehousing, freight forwarding, and crossdocking, among other things. The advent of LSPs is directly linked to the early 1980s outsourcing phenomenon. In order to focus on their core competencies, companies, typically manufacturers or retailers, have preferred to outsource all or part of their logistical services traditionally conducted in-house to one or more specialty firms or LSPs.



Figure 1: Logistics Industry [1]

The logistics industry in India is the backbone of every supply chain in any industry. Whether in the healthcare, hospitality, or industrial industries, logistics companies play a critical role in connecting businesses with their customers. Every logistics company has the same goal in mind: to reduce the time it takes for a supply chain to complete by optimizing operations. However, this does not always follow the script, which is to be expected. The logistics segment has never been so important to India's financial growth. Given that the government has launched various initiatives such as "Make in India," a strong logistics industry can help India's desire to become a manufacturing powerhouse. Companies all around the world are increasingly seeing the world as a single creation base as well as a market that a reasonable logistics segment can effectively tap into. Due to higher government planned outlays, enhanced infrastructure facilities, and more access to global markets, the industry has seen considerable expansion in recent years. However, various difficulties continue to engulf our services, preventing us from fully capitalizing on the global market opportunity.

In the coming years, efforts will be made to strengthen the country's logistics network. India hopes to unlock the sector's potential to fuel economic growth through improving infrastructure planning, increasing stakeholder cooperation, and improving operational efficiencies.

## II. CHALLENGES IN THE LOGISTIC SECTOR

Logistics is likely to be a larger role in propelling the Indian market because of globalization. Poor infrastructure is one of the most significant difficulties that the logistics industry faces today. Transportation is influenced by physical infrastructure, which makes logistics easier. The country's port and highway infrastructure are both in need of repair, which has a direct influence on commodities movement. Fuel prices and policy changes have a direct impact on the logistics industry because higher fuel prices mean higher transportation and freight cost, which have a direct impact on logistic companies and enterprises' ability to stay afloat. The sector continues to encounter difficulties in maintaining documentation, which is critical in substantiating claims during arbitrations and litigations. This difficulty is exacerbated by a lack of correct information at the time of credentials, as well as various manual processes.

The ongoing pandemic has resulted in several policy measures, including permanent and partial lockdowns, which have had a direct impact on the nation's employees and labourers, causing delays and/or work stoppages. This is a major cause of supply chain disruption and one of the causes of time overruns. Other logistical issues include many compliances that must be adhered to in a timely way, as well as maintaining import and export licensing. Insurance policies, bank guarantees, and tax compliance and repercussions are among the other legal difficulties. While this indicates that the industry is improving, various problems such as infrastructural deficiencies, a lack of integration among stakeholders, a shortage of competent people, and a tardy adoption of technology continue to hold it back.

Key Challenges	Key Legal Challenges
<ul style="list-style-type: none"> <li>• Infrastructure issues have several drawbacks.</li> <li>• A shortage of trained workers</li> <li>• Increasing fuel costs and lack of warehousing</li> <li>• Issues in the port sector and other incidents of force majeure</li> <li>• Fluctuating order intensity</li> <li>• Due to national concerns, supply chain distribution is a challenge.</li> <li>• Digital technology adoption is sluggish.</li> <li>• The difficulties of transporting and storing hazardous materials</li> <li>• Freight Rates</li> </ul>	<ul style="list-style-type: none"> <li>• Import and export compliance with regulatory requirements</li> <li>• Drafting, negotiating, and resolving conflicts</li> <li>• The multimodal operator's registration</li> <li>• Inconsistent paperwork, issues in substantiating claims</li> <li>• Inadequate paperwork due to a lack of inventory management</li> <li>• Obtaining insurance and indemnification</li> <li>• Changes in policy and regulatory compliance</li> <li>• Global laws that aren't uniform</li> <li>• Hefty arbitration fees</li> <li>• Tax compliances</li> </ul>

Table-1 : Trials in the Logistics Transportation Industry in India

In this work, only a few challenges were discussed.

- i. **Infrastructure:** This is one of the biggest hurdles in expanding the logistics segment. It is reflected in a poor and inadequate modal and terminal transport infrastructure, a sub-optimal modal combination, ineffective and poorly designed cargo and container storage facilities, ineffective maintenance operations and routines, and poor technological uptake or adaptation. As a result, freight transit times are long and inconsistent, resources are wasted, and fleet management is poor. The mode of transport, as well as the storage and handling standards of the terminals, are rarely linked to the parameters of the freight (distance of movement, parcel size, intensity, etc.). As a result, high-cost modes such as road are overused at the expense of profitable and sustainable modes of transportation such as inland waterways and trains. The long-standing sub-optimal system that appears to be in balance needs to be modified. The deconstruction of the old and the establishment of a new rational balance are the best ways to reinforce India's logistical infrastructure.
- ii. **Transportation Costs:** One of the most serious issues in the logistics industry is the high cost of transportation. Transportation costs can occasionally be so exorbitant that they are worth half as much as the product. Gasoline is a non-renewable resource, therefore it's no surprise that its prices are rising day by day, and the amount of money spent on fuel in the logistics industry is exceptionally high.
- iii. **Skill Development:** While India has a demographic advantage, finding adequately skilled labour remains an issue. This is especially true in the logistics industry, which is viewed as a support rather than a mainstream industry. Inadequate training, leadership, and support contribute to a shortage of trained workers. Seafarers, truck drivers, quality inspection supervisors and warehousing managers are along with the personnel needed by the industry. There are few soft skills,

effective and technical training institutes. Moreover, because of the disordered structure of industry, which is characterized by poor working circumstances and minimal wages, it is not a common option among experienced workers.

- iv. **Regulatory Hurdles:** The introduction of GST has the potential to totally transform the logistics industry, but such a disruptive reform demands careful execution. If several regulatory authorities are not coordinated and placed under one umbrella, the building and operation of logistical infrastructure may be slowed. Obstacles in property acquisition and consolidation, as well as changes in land usage, remain key roadblocks. The sector's troubles are exacerbated by a lack of openness in compliance.
- v. **Management Of Complex Networks:** The logistics industry is tremendously fragmented and the logistic sector's segmented nature creates network complexity that is challenging to manage. Transparency is the most common challenge when it comes to managing complex networks.
- vi. **Becoming Sustainable:** The world has become more environmentally conscious, and people want to do business with companies that are environmentally friendly or sustainable, putting a strain on the logistics industry. The logistics industry is under pressure to become more sustainable. However, becoming more sustainable can come at a cost that the logistics sector may not be able to pay. Wrapping a product in environmentally friendly packaging, for example, is usually more expensive than wrapping it in plastic.
- vii. **Information Technology:** Another important stumbling block was the slowness to accept new technologies. The economic benefits of using digital technology are not understood, and there is not enough collaboration between stakeholders. As a result, the logistics ecosystem is plagued by inefficiencies and underutilization of assets. Inadequate technical understanding and a lack of technology systems exacerbate the problem. Slow network speeds, lower performance, unstable gearing and unstable software have all contributed to exorbitant costs and insufficient performance in the technology infrastructure.
- viii. **Performance Expectation:** Customer behaviour and prospects also vary when there is a diversity of customers. Consumers, both individually and professionally, require customized services, flexibility and timeliness. Service integration is necessary to meet performance goals due to this complexity and the prevalence of fragmented suppliers. Services that are standardized, transparent, and compliant are all essential. As a result, logistics companies must align their strategies with their business models and target consumer groups. Initiatives such as real-time tracking and other value-added services will also help service suppliers reduce costs, increase productivity and optimize the supply chain.

### III. LOGISTICS INTEGRATION

Integrated logistics is a service-oriented approach that strives to improve and strengthen communication channels among the organization's numerous links. This enables businesses to better manage their resources and save money or gain a competitive advantage. Businesses can focus on consumers, products, and marketing since end-to-end, integrated logistical services are available. Businesses seek an integrated logistics service that can act as the backbone of their organization to compete in today's global and digital world. From supply chain and procurement through customer fulfilment and returns, integrated logistics systems support business operations. It entails predicting consumer requirements, obtaining, storing, and dispatching raw materials, as well as organizing delivery. A freight is a set of horizontal flows that collectively form an interlinked chain of connections, involving many investors with different business models and chain expectations. The continuous flow of freight throughout the value chain, including multiple players with different business strategies, is called integrated logistics. It aids in the most efficient completion of the activity, consequently saving movement costs and time.

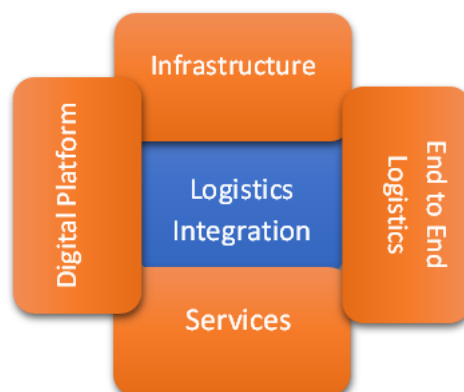


Figure 2: Elements of the Logistic Integration

- i. **Policy on Integrated Transportation and Logistics:** The Government of India is working on an combined transportation and logistics policy aimed at moving India's logistics from a "point-to-point" to a "hub-and-spoke" model, resulting in the establishment of strategically centralized networks for the distribution of shipments rather than relying on inefficient direct route operations. The government intends to build several economic corridors, multimodal logistics parks (MMLP) in all major places, and minimal intermodal stations as part of this strategy. While a policy is being discussed, numerous factors - services, infrastructure, and information - must be connected with the horizontal flow across the chain for integrated logistics to be successful.



- ii. **Integration of services and service providers:** A comprehensive range of logistical services including storage, transportation and other value-added services required for goods to move seamless from beginning to destination are executed or bundled by an end-to-end service provider on a single platform. The stakeholder groups participating in cargo flow, on the other hand, are vertically integrated enterprises with profit maximization and/or other objectives in mind. Consolidation between current investors or the creation of third-party assistance providers are the most common ways for service providers to be integrated. As a result, a complementary group of assistance providers may band together for common advantage, or a significant logistics operator could enlist the help of others from across the value chain. The logistics industry has been consolidating globally, owing to scale and operational efficiency. Parts of the chain's service providers integrate, acquire, and collaborate to deliver full third-party logistics facilities at reasonable prices. In India, besides, facility providers have moved to consolidate operations that were previously divided across domains. A combined system's goal is to improve align the vertical incorporation of different firms with the supply chain's horizontal flow. The arrival of third-party logistics assistance providers is a natural process that is tied to the country's economic progress. New logistical abilities and additional complicated solutions from third-party logistics assistance partners are being sought by Indian companies. Another part of end-to-end integration is the development of adherence performance requirements that are both feasible and acceptable to a varied group of logistics facility providers and other investors.
- iii. **Integration of Infrastructure:** The creation of a comprehensive multimodal infrastructure network, which will facilitate the seamless transfer of freight using various modes of transportation, is a prerequisite for service integration. This type of transportation system would ensure that cargo is moved in the most economical, safe, cost-effective, and pollution-free manner possible. The construction of multimodal logistics parks simplified trade and industry corridor routes for economical cargo movement, and intermodal locations to add multiple forms of transportation would be the primary drivers. Enormous uneven investments in logistics infrastructure with long growth cycles, such as rail tracks and port substructure, should remain a governmental obligation because the private sector has shown no interest in doing so. The baton should be passed via the penumbral region among the society and private sectors, encouraging more privileged investment across a variety of adequately organized models, involving public-private partnerships (PPPs). In reality, as the investment demand turns toward smaller, service-oriented infrastructure, more private sector engagement is expected to follow. In comparison, the logistics business has a low finance requirement; it mostly requires working capital financing. As a result, it can function without, or with very little, state assistance. Intermodal transfers should be efficient to ensure seamless movement across physical infrastructure. Multimodal logistics parks (MMLPs), inland container depots (ICDs), container freight stations (CFSs)/private freight terminals (PFTs), ports, and airports, among other terminal infrastructure, must be planned with freight specificity and operating conditions in mind. Such terminals cause an interruption in the logistical network, obstructing the flow. As a result, their inclusion in the supply chain is acceptable merely when they increase value to the freight or satisfy a legal obligation. The first and last mile are frequently overlooked while assessing multimodal infrastructure. This could be the end-to-end chain's stumbling barrier. The terminal plan can include port and inland terminal/warehouse interconnection, but the state must intervene when land and other regulatory hurdles occur. Its principal key to success is terminal location, and its value is dependent on adequate network connectivity.
- iv. **Integration of Digital Platforms:** Digital integration is another crucial feature of multilingual end-to-end logistics. A specific investor's visibility throughout the chain is typically confined to his particular part, or occasionally linked areas as well; nevertheless, only such a platform can provide a complete end-to-end view. The benefits of such an alliance must be plainly obvious to a stakeholder in order for him to become an inherent part of it. The goal of a single digital policy is to allow for the harmonious flow of data between different facility providers and types of transportation. A platform like this must be able to incorporate all cargo-related paperwork, enable freight visibility via track-and-trace, simplify a flawless information flow, and connect the chain to invoice and disbursement locations. In this process, the government must play a role. It can not only help to accelerate digitization through the panel, however it can also help to alleviate discomfort points for numerous participants and raise consciousness with them.
- v. **Benefits of using an integrated logistics system**
- **Alliance and prominence have improved:** An unified logistics organization permits for improved collaboration, which aids firms in improving operational management, lowering costs, streamlining operations, and shortening customer response times. Each department gets visibility into the entire process and the aspects they require to achieve their objectives by aligning and integrating the functions.
  - **Consumer demands are predicted and met:** The usage of information is one of the advantages of digitalization. These procedures are powered by technology that allows access to data in an integrated logistics system. Data is a vital asset for a business because it gives useful insights into customer trends, demand and supply gaps, and industry trends.
  - **Effective price reduction:** Every firm endeavors to decrease operational costs while maintaining customer satisfaction and product quality. Companies strive on operational efficiencies for cost savings. The supply chain function is expected to save money, and integrated logistics systems provide the means to do this. An integrated logistics provider is in charge of the entire supply chain system, and their infrastructure efficiencies in transportation, sourcing, and warehouse availability, among other things, assist companies in lowering investment and maintenance costs, as well as spotting efficiencies to generate additional savings.
  - **Revenue margins that are elevated:** By obtaining superior quality or cost-effective material or discovering efficient ways to store or transport materials and goods, a well-integrated logistics system can provide room for higher profit margins. Increased profitability can be aided by these operational efficiencies.
  - **Excess minimization:** It is a huge concern for firms, and an unified logistics organization can accurately estimate client needs, schedule raw material purchases, and ensure on-time product delivery. It is easier for firms to balance inventories and meet consumer expectations when they have integrated logistics systems in place.
  - **Flexibility:** Businesses benefit from the enhanced flexibility that integrated logistics systems provide. The COVID-19 epidemic has proven the importance of enterprises being flexible and able to scale up or down as needed in order to

stay afloat. This convenience and flexibility can be obtained by working with experienced integrated logistics providers.

#### IV. A WAY FORWARD TOWARDS THE INDUSTRIAL 4.0 REVOLUTION

The fourth industrial revolution is creating a slew of disruptive changes to company models as well as the supply networks that sustain them. These large changes will unavoidably affect logistics, which is a critical component of these operations. The speed, scale, and breadth of this fourth industrial revolution define it. The changes are so significant that they will impact how we live, work, and interact with one another, affecting governments, businesses, industries, and society as a whole. As a result, in order to remain competitive, the logistics system of the future must strive for integrated information and optimum time and resources, as well as major investment in research and development. A number of technologies currently on the market have the potential to disrupt the logistics industry, owing to their ability to integrate information and facilitate interoperability with other production and distribution systems, as well as intelligent transportation systems (ITS), thereby favouring communication among production actors, devices, and logistics infrastructure. The reduction of times, costs, and negative social and environmental externalities, as well as the provision of technological support to strengthen the facilitation of processes or co-modality, are some of the desired effects of this interoperability. This is aided by the provision of real-time information to make modal changes in a logistics operation much easier and safer, as well as information to optimise routes or encourage collaborative logistics, which allows companies to share their distribution chain in part or entirely for all products for which the distribution service is not a differentiating element of competition under a cooperation scheme.

**Evolution processes of logistics:** In the past, logistics has undergone three dramatic developments. The initial invention (Logistics 1.0) is a result of "transport mechanization" in the late 19th and early 20th centuries. The second revolution (Logistics 2.0) is fueled by the 1960s' "automation of handling systems." "The system of logistics management" from the 1980s represents the third revolution (Logistics 3.0). We are already in the early stages of the fourth logistics breakthrough, known as Logistics 4.0. IOT&S (Internet of Things and Services) is the key driving force. The evolution of Logistics is depicted in Figure-3 across time. The phrase "Industry 4.0" has been used in several recent research articles to refer to cloud computing, big data and the Internet of Things (IoT) and its functions in various industries (Hofmann and Rüscher, 2017; Witkowski, 2017). Additional new technologies, such as artificial intelligence (AI), robotics and blockchain, demand special awareness due to their significant potential in the digitalization and transformation of logistical processes. As a result, we're coining a new term: Logistics Industry 4.0, which incorporates the earlier described Information and Communication Technologies (ICT) as well as the potential and difficulties that they present for digitally transforming logistics processes as shown in the figure 4.

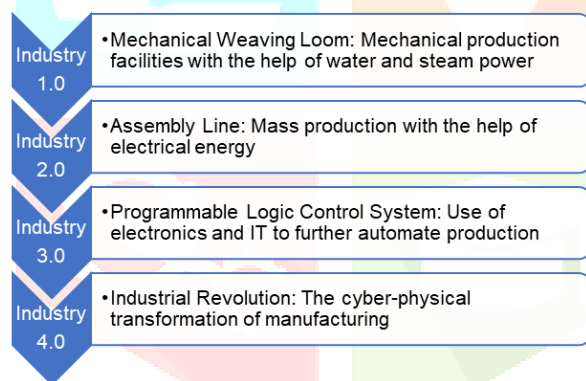


Figure 3: Definition of Industry Revolutions

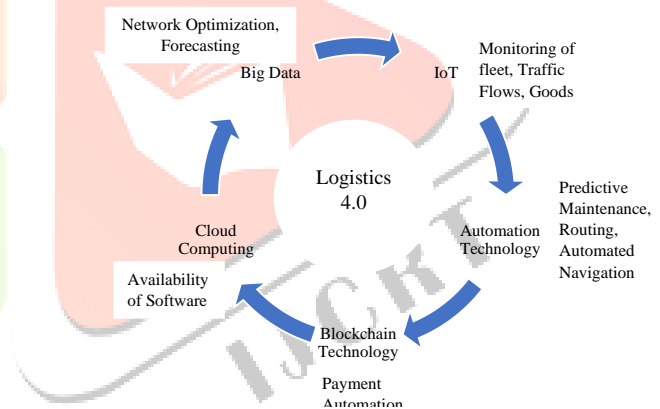


Figure 4: Logistics is being reshaped by digital technologies.

- i. **Internet of Things (IoT):** IoT solutions connect physical items with sensors, allowing them to receive, store, and transport data that can aid decision-making. The Internet of Things (IoT) can be used in logistics industry to enhance infrastructure, vehicles and services while also promoting operators and customers of transportation systems. (Lyons, 2017). The main benefit of implementing IoT is real-time connectivity, which has the ability to enhance service quality and control. However, total implementation expenses are still expensive, and concerns like as protection concerns and a absence of legal regulation are important deterrents for logistics organisations considering IoT implementation. The expansion of low-cost IoT solutions, as well as lower device prices, might affect the existing trend to shift.
- ii. **Automation Technologies** Automation solution in the logistics industry enables the use of artificial intelligence-based control systems to operate processes, vehicles, machinery, vessels, and aircraft. Automation solution can be used in the logistics industry for a variety of reasons, from robots to self-driving vehicles and drones. *Its reducing manual intervention to bring down costs*
  - **AI:** AI can be described as a gathering of technologies that work simultaneously to challenge difficult issues. Processing, sensing and learning are the three types of modules that often make up AI technology. Information acquired (typically by sensors) from the physical world is described to as detecting elements. Acquiring samples of structured and unstructured data is described to as learning segments. Across the personalization of logistics services, AI can give optimal solutions for vehicle routing and, as a result, cost savings, secure projecting forecasts for requirement, in advance decision-making, and improve customer satisfaction. For a logistics company, the most significant challenge is high implementation costs.
  - **Robotics:** It is a part of science that is familiarly connected to AI, as well as IoT, cloud computing, and big data. Robotics has a plenty of potential for use in active environments like warehousing and manufacturing. Autonomous cars are utilised to bring out transport activities in extremely automated warehouses. Autonomous vehicles hand pallet trucks, outperform forklifts, and high rack pallets in terms of precision, safety, speed, and tracking (Gu et al., 2007).

Compared to typical warehouses, fully automated warehouses recommend better flexibility and exclude the constraint for stable infrastructure construction (Vis, 2006). The execution, on the additional hand, will require a significant investment of resources. However, technological innovations may decrease the number of resources required in the near future.

- iii. **Blockchain Technology:** It can be used to construct normal arrangements between individuals who are disinclined to exchange data without exposing the data's reliability. Given the fragmented character of the sector and the lack of standard venues for information exchange, this technology becomes especially relevant in India. It can be used for a variety of things.
- **Synchronizing the multi-party logistics value chain:** By eliminating the need for multiple documentation processes, blockchain technology may be used to seamlessly synchronise activities from one point of the logistics value chain to the next. As a result, the risk of errors creeping into the system as a result of manual data entry at various points throughout the value chain would be decreased. It would also act as a catalyst for the creation of a full-fledged end-to-end logistics system. By minimising the number of exchanges between various parties and preventing data tampering, the goal is to speed up interactions between port customers such as freight forwarders, carriers, terminals, hauliers, drivers, and shippers. (Zhao, 2017).
- iv. **Cloud Computing:** Cloud computing means to internet-based access to a shared storage, servers, pool of networks and applications. This technique could be beneficial to the Indian logistics industry.
- **Data storage and access:** Logistics service providers may now access data from anywhere thanks to cloud technology, which allows them to store large volumes of data without the demand for substantial servers or hard drives. Facility providers will be able to exercise control over important procedures that involve round-the-clock examining from any location.
  - **Optimizing asset use:** As the country's logistics sector strives to become leaner, maximising asset utilisation is critical to improving operational efficiency. The Indian Road transportation industry is still growing. The vehicle fleet is greatly dispersed, and it frequently sits idle or returns empty after hauling freight. By partnering with one another to share fleets and networks, cloud computing can support facility providers use resources more economically. Sharing information in real time using cloud-based platforms can aid service providers in coordinating and collaborating for freight pickup and delivery. This will not only minimise their fleet's idle time, but it will also improve the delivery ecosystem's efficiency.
- v. **Big Data:** Another aspect of the digital revolution is big data analytics, which allows for quantity crunching and sense-making' of complicated data sets gathered by intelligent devices and stored across servers and networks. Big data is defined as "data" that has four "Vs" to it. Velocity, volume, variety, and value are the four elements. Big data has previously transformed the logistics business by turning immense amounts of organised and unstructured data into valuable data for logistics managers throughout decision-making processes (Simi and Ilin, 2017). Transforming underutilised data into a viable improvement on the market has massive possibility. Executing big data in logistics has developed in market need prediction and latest business prototypes customized to customers, to name a limited benefit. Big data analytics merged with artificial intelligence will facilitate real-time direction optimization, complete forecasting of fleet ability and requirement for goods, and probability decline throughout the supply chain network. Security concerns are the major impediment to this paradigm's widespread implementation in logistics.
- vi. **Key challenges:**
- The Logistics Business 4.0 idea offers various prospects for data-driven insights to improve the logistics industry. The need for data collecting from numerous sources, including autonomous vehicles, robotics, and other "smart" technologies, has resulted in an explosion in data size. Three major obstacles for logistics organisations have been identified.
  - Data Collection, Storage & Processing
  - Data Protection and lack of standards
  - Lack of digital strategy

## V. STRATEGY TO IMPLEMENTATION - A UNIFIED LOGISTICS POLICY

Instead of a piecemeal approach, an all-encompassing solution is required to make the Indian logistics segment universally competitive. To do this, the government can implement a comprehensive logistics policy that will result in a more comprehensive and holistic improvement in the sector. Unified logistics, regulation, human India, information technology, infrastructure - On the edge of a logistics transformation resources, and ability development, as well as the complete participant community, must all be incorporated into the national strategy. The policy should, among other things, focus on:

- Defining a long-term vision for the logistics sector,
- Planning activity steps to achieve this concept,
- Establishing a favourable ecosystem for the logistics sector's growth, and
- Identifying programmes to address all elements.
- Creating an efficient and competitive logistics industry
- Developing the sector, particularly transportation modes, in order to compete in a global marketplace.
- Expanding and updating the industry's capacity in order to improve its participation in global supply chains
- Intensifying the use of modern information and communication technologies in industry
- Ensuring enough qualified workers to meet the industry's long-term requirements
- Strengthening institutional support for the industry over inter-ministry and organization expertise in the design, execution, and supervising of guidelines and procedures



## VI. CONCLUSION

The Indian logistics sector clearly confronts issues, and there is more to be done. Innovative models, new technical systems, worldwide best practices, research, and a well-thought-out implementation strategy can all assist to strengthen the sector, hence stimulating growth and employment in the country. Many processes will be digitally altered as part of Industry 4.0, which will restructure the logistics segment. When a firm launches new technology, challenge to transformation is almost inescapable due to the compulsion to modify practices and working arrangements. High technology costs, a shortage of confidence in data security, and a lack of regulations and guidelines are all major roadblocks to the advancement of digital themes in logistics. Lack of trust in data security, corresponding to the authors, will be additional challenge to manage with because it represents risks and ambiguities. To boost the logistics business globally, India must implement a coherent, unified national logistics policy, transitioning towards an integrated and adopting digital technologies in logistics chain end-to-end logistics. Though the situation will take the advantage in implementing the policy, other stakeholders will be expected to contribute to the development and execution of this policy. The policy's scope and governance would be critical to its successful implementation.

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