

**ICICI Lombard**



# **CORPORATE INDIA RISK INDEX**

2024

Intelligence partner

FROST & SULLIVAN

Navigating Risks, Powering India's Growth

## **SECTOR REPORT 2024**

Transportation & Logistics



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# Preface

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Corporate India Risk Index is primarily an academic exercise to understand the level of risk that companies are facing and also assist in developing a successful risk aversion plan, CIRI is a first-of-its-kind risk measurement tool to gauge the level of a company's risk exposure and preparedness. This Corporate risk comprises of various aspects of the business—spanning customer, competition, regulatory environment, business operations, technology finances, environmental factors etc. The impact of unprecedented events is significantly higher now.

This Index is a comprehensive framework that draws upon global risk management best practices and comprises of 32 risk elements across 6 broad dimensions. The Risk Index is based on the principles of Lean and Six Sigma that qualify business processes by measuring effectiveness and efficiency.

ICICI Lombard's Corporate India Risk Index provides a crucial tool for assessing and addressing risks, fostering resilience and adaptability in the ever-evolving global landscape. In the current climate of increasing macroeconomic uncertainties, it is essential for corporates to prioritize robust risk management. We believe that a proactive approach to risk management not only fortifies individual businesses but also contributes significantly to India's overall economic growth and stability.

# Executive Summary

In 2024, India's transport and logistics sector made significant strides in improving efficiency, sustainability, and infrastructure. The continued development of transportation networks, including dedicated freight corridors and national highways, enhanced connectivity and reduced logistics costs, driving smoother and more cost-effective operations. To further streamline supply chains and reduce inefficiencies, the National Logistics Policy, aims to optimize the sector and bring it closer to global standards.

A key focus for the sector was environmental sustainability, with the adoption of electric vehicles (EVs) and LNG-fueled trucks becoming a priority. These initiatives, alongside investments in automation for warehousing and inventory management, not only addressed environmental concerns but also improved operational efficiency, reduced errors, and lowered costs. Through these strategic efforts, the transport and logistics sector effectively navigated challenges, positioning itself for continued growth while advancing toward a more sustainable and resilient future.

# Introduction

ICICI Lombard Corporate India Risk Index is a one of its kind, unified, credible, standardized corporate Risk Index that spans over the country level, the industry level, and the company level. The index has a comprehensive sector coverage.

Aerospace and Defence, Agriculture and Food Processing, Automotive and Ancillary, BFSI, Biotech & Life sciences, Chemicals and Petrochemicals, Education Skill Development, Energy, FMCG, Healthcare Delivery, Infra and Realty, IT/ITES, Manufacturing, Media and

Gaming, Metals and Mining, New Age & Startup, Pharmaceuticals, Telecom and Communication Technology, Tourism and Hospitality, Transportation and Logistics.

The impact is identified across key business risk (internal and external) under the following 'Strategic Risk Areas', The ICICI Lombard Corporate India Risk Index Framework comprises of 32 risk elements across 6 broad dimensions.



## Market and Economic Risk

Corporate Risks arising due to market and economy related factors, such as internal or external political uncertainty, global slowdown, taxation-regulatory changes etc. Market and economy related risks are also identified as ‘Systematic Risks’, we have further classified the risks into below mentioned categories.

- **Inflation:** Inflation is the general increase in prices within the economy. The rising prices for businesses could result in bigger production spending and a fall in profitability. The companies should be attentive, acute, and responsive to changes in inflation to efficiently manage the prices of final products.
- **Taxation:** In a large democracy like India, complexity of multiple taxes (multiple taxes like GST, custom duties, central excise duty, etc.) is a major concern. The changing legislations, increased scrutiny by tax authorities and increasing public attention are together resulting in tax risks for organizations. There is, thus an increasing urgency for firms to manage their tax affairs efficiently to minimize tax risks.



- **Regulatory Risks:** Regulatory risk is the risk of changes in regulations and laws that might affect an industry or businesses. The regulatory changes can pertain to tariffs and trade policies, business laws pertaining to employment, minimum wage laws, financial regulation, Foreign Direct Investment etc.
- **Foreign Exchange Risk:** The exchange rate plays an important role for firms who export goods and import raw materials. The fluctuations in foreign exchange will have great impacts on the prices of traded goods. For example, if the currency depreciates (devaluation), the exporting firms will benefit. However, the firms importing raw materials will face higher costs on imports. The firms need to hedge their exposure to foreign exchange risks to insulate themselves from the impact from forex changes.
- **Geo-political Tension:** Geopolitical risk means the political and economic risks that are a potential threat to the financial and operational stability of companies.
- **Competitive risk:** Competitive risk is the risk associated with the fact that there are multiple companies competing in the market, each seeking to obtain the highest position and consumer ratings, to gain maximum benefits for themselves. The companies devise different strategies to garner a higher market share and acquire customers from competitors. Any failure in managing the competitive stand could lead to losses in business, thereby making marketing and competition a major risk in market.

## Technology Risk

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Technology risks are also identified as information technology related risks which may arise due to failure of any installed hardware or software system, spam, viruses or any malicious attack. Also delay/over/under adoption of trending disruptive technologies can lead to technology related risks. We have classified the risks in below mentioned categories.

- **Innovation Risk / Obsolete Technology:** Innovation is the key to success in all the industries. Risk of redundancy and losing out to competition on account of poor R&D is a major concern.
- **Intellectual Property risk:** Dependence on trade secrets and unpatented proprietary know-how.
- **Disruptive Technologies:** These will fundamentally alter the financial prospects of the industry.
- **Data Compromise:** Hardware failure refers to malfunctions within the electronic circuits or electromechanical components (disks, tapes) of a computer system; Software failure refers to an operating system crash. Such failures lead to stoppage of entire computer or operating systems creating substantial losses to business.

# Operational and Physical Risk

Risk of losses caused due to faulty or failed processes, systems or human resource related inefficiencies are classified as operational and physical risks. We have classified Operational & Physical risks in below mentioned categories.

- **Critical Infrastructure Failure / Machine Breakdown:** Industries with a heavy dependence on machinery consider any rise in machinery breakdowns a hindrance to their businesses operations. An untimely equipment breakdown can bring businesses to a standstill or be the root cause for fires and explosions. Mostly, human errors and deferred maintenances are the major reasons for such breakdowns. The companies should actively invest in timely maintenance of all machineries.
- **Business Continuity / Sustainability:** Non adoption of Business Continuity/ Sustainability Plans and Lack of Internal Control tools would result in: Failure of businesses, Brand Equity / Loss of reputation, Financial Loss, Business model Failure, Ineffective engagement/communication with stakeholders, Losses in productivity, Lack of opportunity monitoring.
- **Supply chain risk:** Raw Material unavailability and Heavy Dependence on Global Supply Chains / Supplier concentration risk. Unavailability of raw materials owing to disruption in the supply chain or heavy dependency on one source (company/country) which is unable to supply owing to some geo- political tensions, fires, or any other incidents. Transportation is one of the key activities for companies making it an important risk to mitigate. The loss of goods in transit and spillage is one of the major concerns as it accounts for a sizeable loss of revenue to companies.
- **Commodity Price Risk - Volatility in prices of raw materials:** The fluctuations in raw material prices creating a margin pressure / top-line pressure in the scenario of rising input costs.
- **Portfolio Risk:** Loss of key customers, Customer concentration - Key customers accounting for a larger share of revenue, Over-dependence on suppliers, Business Model Risk: Transformative changes in business model, Tail Risks: Ability to overcome or manage extreme worst-case scenarios.
- **Environmental Hazard Risk:** Any environmental hazard having the potential to affect the surrounding environment.
- **Workplace Accident:** Fire and Explosion Hazards, Containment Incidents, Workplace Injuries
- **Human Resource:** Key person risk: This risk occurs when a business or business unit becomes heavily reliant on a key individual. Talent acquisition and retention - The companies require a highly skilled labor force for R&D as well as continuous production. Accessing skilled resources and expertise on an on-going basis is one of the major challenges; moreover, retention of trained staff is imperative. Labor shortages, Union Strikes & Industrial Actions, Employee

health, safety, and security (SHE/Sustainability risk).

- **Financial Risk:** Financial Reporting Risk: Material misstatement of Financial Statements, whether due to fraud or error. Interest rates and equity prices: Interest rate risk arising out of working capital borrowings at variable rates. Equity price fluctuations affect the Company's income or the value of its holdings of financial instruments. Liquidity Risk (Credit Risk / Receivables).
- **Breaches of law (local/ international):** Voluntary/ involuntary breaches of law can lead to costly lawsuits.

## Crime & Security Risk

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Cybersecurity risks relate to the loss of confidentiality, integrity, or availability of information, data, or information (or control) systems and reflect the potential adverse impacts to organizational operations. These attacks can cause major financial losses, reputational harm, and a loss of client trust. Regarding cybersecurity, the BFSI industry in India has several difficulties, including difficult-to-secure legacy systems, a shortage of qualified cybersecurity personnel, and the requirement for ongoing system and network monitoring. There is a significant investment in cybersecurity tools like network monitoring, endpoint security, access control, and threat intelligence. Many organizations are also implementing cutting-edge technology like artificial intelligence and machine learning to strengthen their security posture.

We have classified Crime & Security risks in below mentioned categories.

- **Cyber Crimes:** Data Theft, Spam, scams and phishing, Hacking, Malwares and Viruses, Piracy, Fraud, Corruption, Malicious attacks
- **Counterfeiting:** Counterfeiting of goods/services leads to loss of revenues, profits and ultimately affects the brand equity
- **Threat to Women Security**
- **Terrorism:** Un-lawful use of violence and intimidation, especially against civilians, in the pursuit of political aims.

## Natural Hazard Risk

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A natural hazard is the threat of an event that will likely have a negative impact. A natural disaster is the negative impact following an actual occurrence of natural hazard if it significantly harms a community. Due to India's geographical structure, it is one of the most disaster-prone countries in the world. Natural hazards like floods, earthquakes, landslides, and cyclones are common risks faced by India. The situation has worsened due to rise in GHG emissions, loss of biodiversity, deforestation, and degradation of environment. Natural disasters hamper the day-to-day



operations of corporates, and it is important for them to understand that such risks cannot go unheeded. Over the years, Indian corporates have learnt to mitigate such risks by diversifying their supply chains, having multiple logistics partners, diversified geographical presence and multiple vendors.

- **Pandemic and other global epidemic diseases:** Risk to business owing to disruptions caused by global pandemic scale events like the COVID-19 pandemic

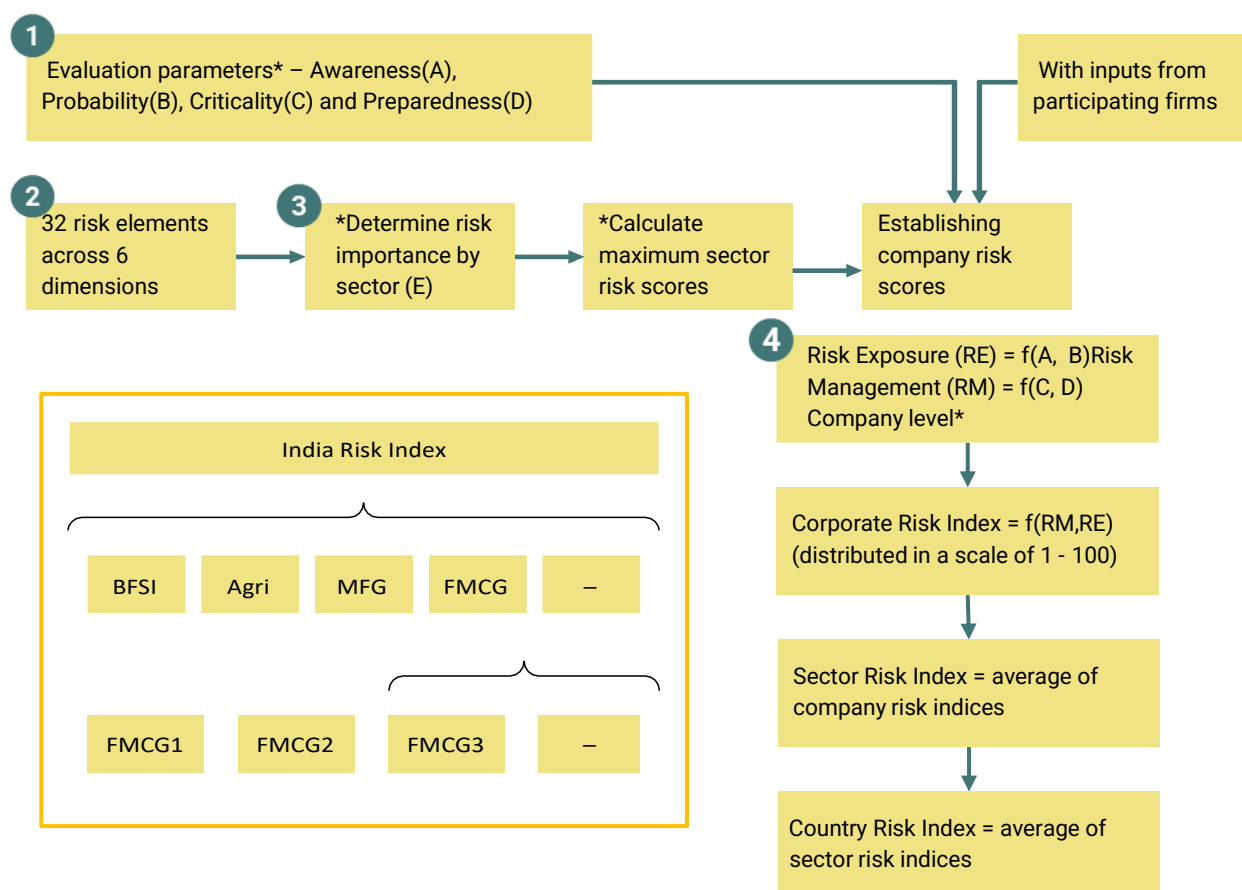
## Strategic Risk

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Strategic risk is the risk of undesirable outcomes of business decisions which may impact a company. Strategic risk is often a major factor in determining a company's worth, particularly observable if the company experiences a sharp decline in a short period of time. Several factors, such as unethical or unlawful activities, poor customer service, product recalls, data breaches, or unfavorable media coverage, can lead to strategic risk. An organization's reputation can be severely harmed by a single negative incident, such as a high-profile data breach or fraud scandal, resulting in a loss of clients, income, and market share.

- **Resource scarcity / Misutilization / Overall Utilization:** Difficulties in acquisition of land, water, fuel, or other resources for operations of business.
- **Public Sentiment:** Current events playing out in the public scene can change the public sentiment.
- **Delay in execution of projects:** Delays in execution of projects can surge in the capex.
- **Increased number of recalls and quality audits:** Impacts both the brand equity and increased operational expenses.
- **Failed / Hostile Mergers & Acquisitions:** High dependence on inorganic growth.

# Bottom-Up Risk Assessment Approach



**Figure 1: Risk Assessment Approach**

- 1. Evaluation Parameters\*:** The index maps the risks faced by any enterprise basis of Awareness, Probability, Criticality and Preparedness against the defined Risk elements. The evaluation Parameters are defined as:
  - Awareness - Level of awareness of potential risk affecting the firm.
  - Probability - Likelihood of risk to affect the business goals of the firm adversely.
  - Criticality - Level of impact of the identified risk on the success of business goals.
  - Preparedness - Risk handling practices/ mechanisms already in place to handle the risk.
- 2. Determining Risk Importance\*:** Importance/Impact of individual risk element is established against individual sector based on the published corporate risk reports, in depth sector

understanding by F&S team and SMEs.

3. **Calculating Maximum Sector Risk Score:** Weighted Sum of all risk elements based on their importance to the respective sector.
4. **Company Level\*:** All the Risk Index scores for companies in a sector are averaged to represent the sector; and sectors average to India. Risk Exposure is defined as the function of corporate's Risk Awareness and Probability of risk occurrence. Risk Management is defined as the function of an enterprise risk preparedness and criticality risk impact assessment.

# Defining the Risk Scale

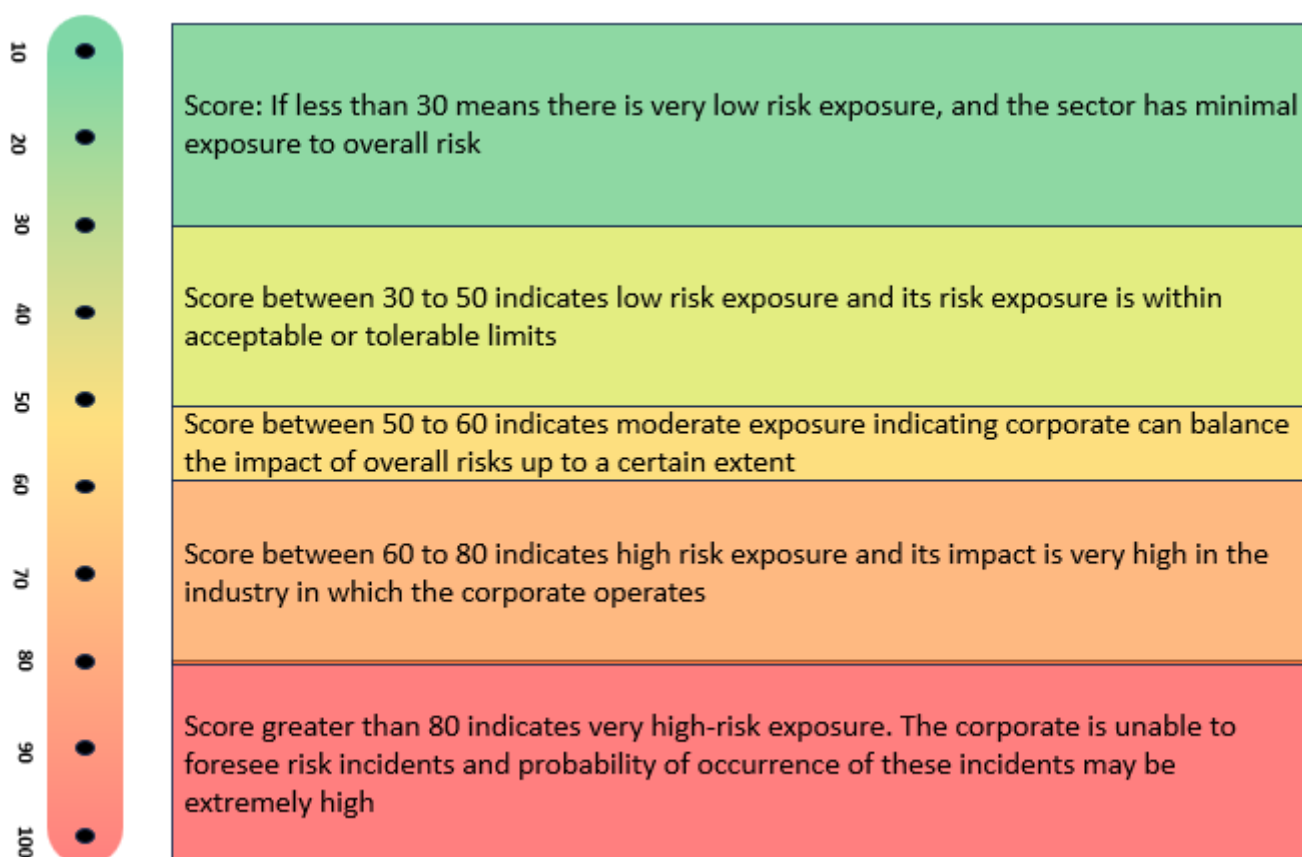
We have selected 20 sectors to understand the current stand of our country today in terms of risk. Risk for various sectors is measured on the risk exposure scale and risk management scale.

## A. ICICI Lombard Corporate Risk Exposure – Scale

**Risk Exposure:** The impact of any internal, external or strategic occurrence on the financial performance of an organization is defined as the corporate risk exposure.

Risk has traditionally been seen as something to be avoided – with the belief that if behavior is risky, it's not something a business should pursue. But the very nature of business is to take risks to attain growth. Risk can be a creator of value and can play a unique role in driving business performance.

Let's look at the risk exposure scale.

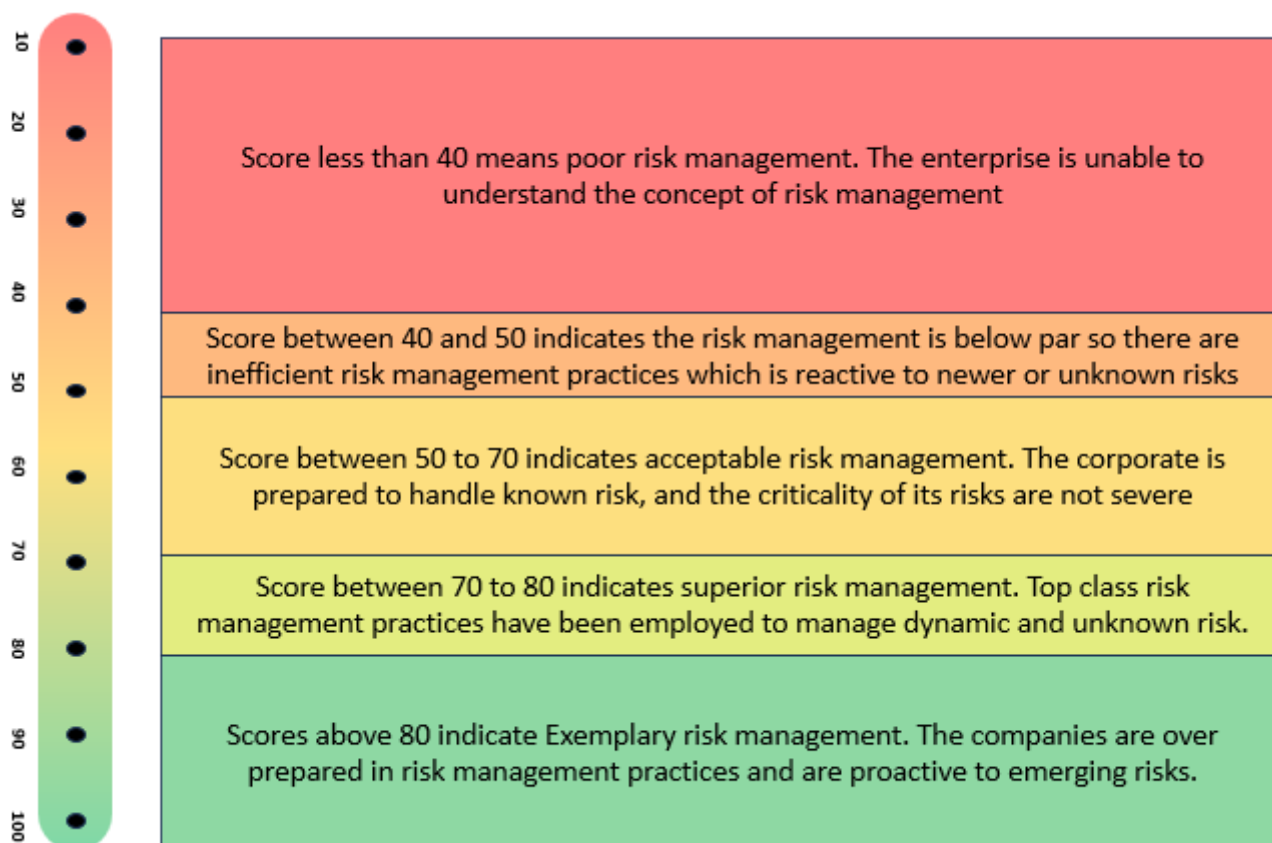


## B. ICICI Lombard Corporate Risk Management – Scale

**Risk Management:** Identification, Evaluation and Prioritization of corporate risks followed by well- coordinated steps to minimize the occurrence of uncertainties in the foreseeable future is defined as the Corporate Risk Management.

The risk management scale works in the opposite to that of the risk exposure scale.

Let's look at the risk management scale.

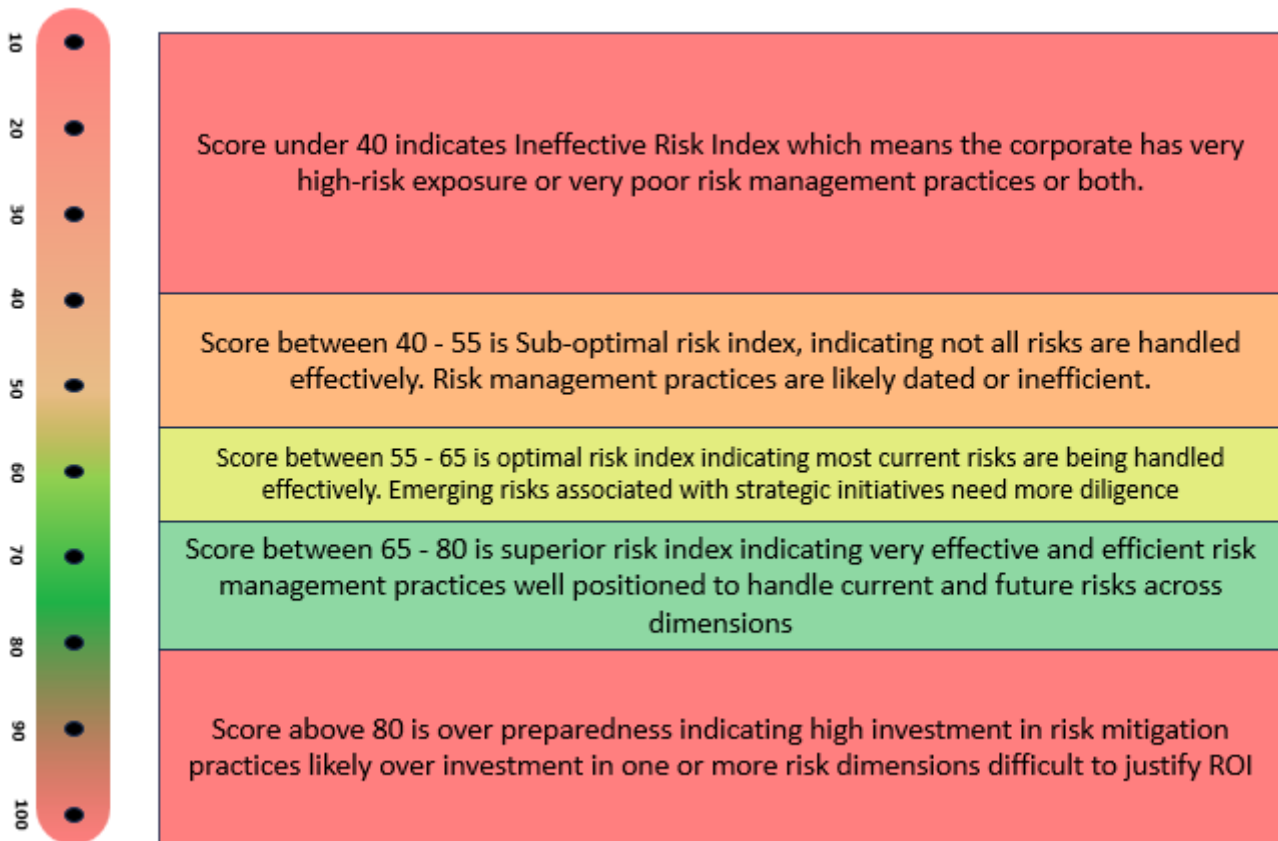




### c. ICICI Lombard Corporate Risk Index – Scale

**Risk Index:** Risk Index is a measurement tool to gauge the level of Risk Exposure against Risk Preparedness. The score intends to give companies/Sector/Country access to an extensive and quantifiable metrics of risk management.

Let's look at the risk Index scale.



# India - Resilient Growth and Superior Risk Management

In 2024, India's diverse sectors demonstrated significant growth and resilience, leveraging technological advancements, strategic reforms, and proactive risk management to navigate an evolving economic landscape. Despite global challenges, industries embraced innovation, digital transformation, and sustainable practices, positioning themselves for long-term success.

In this year, the integration of Artificial Intelligence (AI) across various sectors presented both significant opportunities and risks. While AI-driven innovations enhanced productivity, decision-making, and customer engagement, the adoption also raised concerns around data privacy, cybersecurity, and workforce displacement. India navigated these risks by implementing robust data protection regulations and promoting AI ethics in the development and deployment of technology. Additionally, the government and private sector invested in reskilling programs, ensuring the workforce was equipped to adapt to the evolving digital landscape. AI's strategic implementation across sectors like BFSI, healthcare, and manufacturing helped India enhance operational efficiency while balancing the challenges posed by rapid technological transformation. The Aerospace & Defence sector saw substantial advancements as India attracted global aerospace companies seeking to strengthen supply chains. Local firms expanded their capabilities, particularly in the growing private space sector, driving both revenue growth and global competitiveness. The Agri & Food Processing sector turned to precision farming and AI-driven analytics to enhance productivity, while renewable energy solutions like solar-powered cold storage reduced post-harvest losses, improving sustainability and efficiency.

In the Automotive sector, the shift toward electric vehicles (EVs) gained momentum, supported by government schemes aimed at promoting EV adoption. Major manufacturers expanded their EV portfolios, addressing both sustainability goals and evolving consumer demands. The BFSI sector continued its digital transformation, with AI integration enhancing fraud detection and compliance, further improving security and efficiency.

The Biotech & Lifesciences sector experienced accelerated growth, particularly in genomics and vaccine development, with India solidifying its role as a global leader in pharmaceutical manufacturing. The sector's innovation, supported by public and private investments, enhanced healthcare technology and medical devices. In Chemicals & Petrochemicals, India attracted significant investments to meet rising demand, driven by growing consumption from its expanding middle class, while the Education sector embraced AI and digital learning platforms, expanding access to quality education and equipping the workforce for future demands in emerging technologies.

The Energy sector made substantial progress towards sustainability, with a focus on renewable

energy, including ultra-mega solar parks and offshore wind projects. These initiatives were supported by favorable government policies and decreasing costs of clean energy technologies. The FMCG sector adapted to inflationary pressures by shifting focus towards premium products and e-commerce platforms, which were increasingly driving sales, particularly in rural markets.

In Healthcare, there was significant growth fueled by digital innovations such as telemedicine and AI-driven diagnostics, which helped improve access and efficiency in healthcare delivery. India also continued to strengthen its position as a global hub for medical tourism, offering competitive treatment options. The Real Estate sector benefitted from increased demand in affordable housing and infrastructure development, with commercial real estate seeing steady growth and an emphasis on sustainable building practices.

The IT sector continued to thrive despite global challenges, driven by demand for cloud services, cybersecurity solutions, and AI technologies. Tier 2 and 3 cities emerged as new tech hubs, with government support enhancing regional tech expansion. The Pharmaceutical sector saw an uptick in exports and domestic manufacturing, with reduced dependence on imports and new product launches in global markets bolstering its growth. In Manufacturing, India focused on boosting production through initiatives like the Production-Linked Incentive schemes, especially in electronics and EV manufacturing, which also contributed to job creation and supply chain resilience. The "China + 1" strategy adopted by global firms has played a pivotal role in shaping India's manufacturing sector. While it has increased risk exposure, it has also driven companies to invest in more sophisticated, globally relevant risk management practices, strengthening the sector's resilience and positioning India as a key player in global supply chains.

Media & Entertainment saw continued growth, with OTT platforms gaining popularity, especially in regional content. The Gaming industry also flourished, becoming a key revenue generator as mobile gaming gained dominance. In Steel and Mining, investments in decarbonization and digitalization allowed the sectors to reduce environmental impact and enhance operational efficiency. Startups saw substantial funding despite global slowdowns, with SaaS, fintech, and D2C brands leading the charge in innovation and market expansion.

The Telecom sector expanded 5G coverage and rural internet penetration, narrowing the digital divide and improving connectivity across the country. The Tourism & Hospitality sector rebounded strongly, attracting both domestic and international visitors, with eco-conscious travelers opting for sustainable tourism options and luxury experiences. Finally, the Logistics sector benefited from advancements in automation and multimodal connectivity, reducing costs and improving efficiency, while the government's National Logistics Policy streamlined operations, cutting transit times and enhancing cross-sector integration.

In summary, 2024 saw India's sectors display resilience and adaptability, addressing emerging risks through innovation, digital adoption, and sustainability initiatives. The country's ongoing focus on risk management, technological advancement, and strategic reforms has positioned its economy for continued growth and transformation, paving the way for India to solidify its place as a global economic leader.

# India Showcasing an Optimized Risk Handling



**Figure 2: Corporate India Risk Index 2024**

A score of 65 on the Corporate Risk Index indicates optimal handling of risk by the Indian companies. In 2024, India faced significant market, economy, and operational risks across various sectors, highlighting areas for improvement in the coming years. The year was further complicated by global events such as the ongoing Israel-Palestine conflict, which led to geopolitical instability and fluctuations in global oil prices. The rise of recession fears in major economies like the United States and Europe disrupted supply chains and created demand uncertainties, impacting Indian exports and manufacturing. Investor sentiment in India remains flat in 2024, reflecting the cautious behavior of Angel and VC investors globally. This persistent challenge, which has carried over from 2023, highlights ongoing risks in the market and underscores the uncertainty that continues to affect investment decisions in the country.

Additionally, India's national elections increased risk exposure, with political uncertainty and policy shifts potentially affecting business operations, investor confidence, and sectoral reforms. These global and domestic challenges underscored the need for stronger risk management

frameworks and adaptive strategies across India's industries to navigate future uncertainties effectively.

In response to the heightened risks in 2024, companies across India have increasingly focused on strengthening their risk management frameworks. With the backdrop of global uncertainties, such as geopolitical conflicts and economic slowdowns, alongside domestic challenges like the national elections, businesses have prioritized proactive risk identification, mitigation strategies, and resilience-building measures. This shift reflects a broader trend of embedding risk management into corporate strategy, with an emphasis on agility, digital transformation, and sustainability. As a result, sectoral risk indices have remained within the superior and optimal risk index range, demonstrating that most industries in India have effectively managed the challenges they faced. Through a combination of technological innovations, regulatory compliance, and strategic planning, sectors have been able to maintain stability and navigate both internal and external risks. This disciplined approach to risk management has ensured that, despite various pressures, India’s sectors remained well-positioned for sustainable growth and continued progress in 2024.

**Below is a broader categorization of sectors in terms of risk index:**



**Figure 3: Corporate India Risk Index 2024 Sector Score**



**Superior Risk Index**

Superior risk handling was found in nine industrial sectors: Pharmaceuticals, Healthcare Delivery, Automotive & Ancillary, Manufacturing, Metals & Mining, Telecom & Communication, BFSI, Tourism & Hospitality, and Transportation & Logistics.

**Optimal Risk Index**

Optimal risk handling was found in 11 industrial sectors: Media & Gaming, FMCG, Infra & Realty, Agriculture & Food processing, Biotech & Lifesciences, IT ITES, Energy, New Age & Startup, Aerospace & Defence, Chemicals & Petrochemicals and Education & Skill Development.

# Transportation & Logistics Sector Insights 2024

The transportation and logistics industry in 2024 underwent significant transformation, driven by technological advancements, regulatory changes, taxation updates, and sustainability efforts. As global supply chains continue to evolve, businesses are adapting to new challenges and opportunities, focusing on automation, digitalization, and green initiatives. This detailed analysis covers various aspects of the industry, including taxation policies, regulatory frameworks, and innovations shaping the future of transportation and logistics.

The logistics sector in 2024 experienced a major shift towards digitalization. Technologies such as Artificial Intelligence (AI), the Internet of Things (IoT), and blockchain are playing a crucial role in streamlining supply chain operations. AI-driven predictive analytics help businesses optimize routes, reduce fuel consumption, and enhance delivery efficiency. IoT-enabled smart tracking devices are providing real-time visibility into shipments, improving security, and minimizing losses. Meanwhile, blockchain technology is being increasingly adopted for secure and transparent documentation, ensuring fraud prevention and compliance with international trade regulations.

Taxation policies in the logistics industry are evolving to promote compliance and efficiency. Many countries have updated their Goods and Services Tax (GST) structures, making it essential for businesses to adapt. In India, for instance, the GST rate for transportation services remains at either 5% (without an input tax credit) or 12% (with an input tax credit), allowing businesses to choose a model that suits their financial strategies. The government has also tightened the rules for Input Tax Credit (ITC), requiring businesses to ensure that their suppliers file GST returns correctly. This change aims to minimize tax evasion and improve transparency in the logistics ecosystem. The enforcement of e-way bills and e-invoicing has also been made stricter, with companies required to generate electronic invoices for goods transportation above a certain value threshold. These measures enhance tax compliance, improve tracking, and reduce fraudulent transactions. Additionally, many governments have revised customs duties to support domestic industries. Import and export taxes have been adjusted to encourage local production and trade efficiency. Companies engaged in international logistics must stay updated with these changes to optimize costs and ensure smooth cross-border trade.

Regulatory changes in 2024 are shaping the transportation and logistics sector significantly. One of the most notable areas of change is environmental compliance. Governments worldwide are imposing stricter emission norms for transportation fleets, compelling companies to adopt greener alternatives. Many countries have introduced incentives for businesses investing in electric and hydrogen-powered vehicles, while also increasing taxes on diesel and petrol-based transport services.

In addition to sustainability regulations, labor laws in the logistics industry have been updated to protect workers' rights. Governments are mandating better working conditions for truck drivers and warehouse staff, enforcing regulated working hours, and ensuring fair wages. The implementation of stricter vehicle load regulations is another key focus area, with authorities penalizing companies that overload trucks beyond permitted limits. These measures aim to improve road safety and reduce the risks associated with overloaded vehicles.

Sustainability is at the forefront of the logistics industry in 2024, with companies prioritizing carbon footprint reduction. The adoption of electric and hydrogen-powered trucks is on the rise, supported by government incentives and stricter emissions regulations. Green warehousing solutions, such as the use of solar energy, energy-efficient lighting, and biodegradable packaging, are becoming standard practices.

Many logistics firms are also embracing carbon offset programs to neutralize their environmental impact. Companies are investing in tree-planting initiatives, carbon credits, and other sustainable projects to offset the emissions produced during transportation. Customers are increasingly demanding eco-friendly shipping options, pushing businesses to innovate and adopt greener supply chain practices.

Last-mile delivery is one of the most crucial aspects of modern logistics, and in 2024, companies are leveraging new technologies to enhance efficiency. The rise of e-commerce has led to increased demand for fast and reliable deliveries, prompting businesses to adopt AI-driven route optimization, automated delivery lockers, and drone deliveries.

The gig economy is also playing a major role in last-mile delivery services, with platforms like Uber Freight and Amazon Flex allowing independent contractors to participate in package deliveries. Companies are focusing on hyperlocal delivery networks to ensure faster shipments, minimizing delays and enhancing customer satisfaction.

Geopolitical tensions and global trade disruptions continue to impact the logistics industry in 2024. Trade disputes, sanctions, and changing tariffs create uncertainties for businesses engaged in international logistics. Companies are diversifying their supply chains by exploring alternative sourcing locations to mitigate risks associated with geopolitical instability.

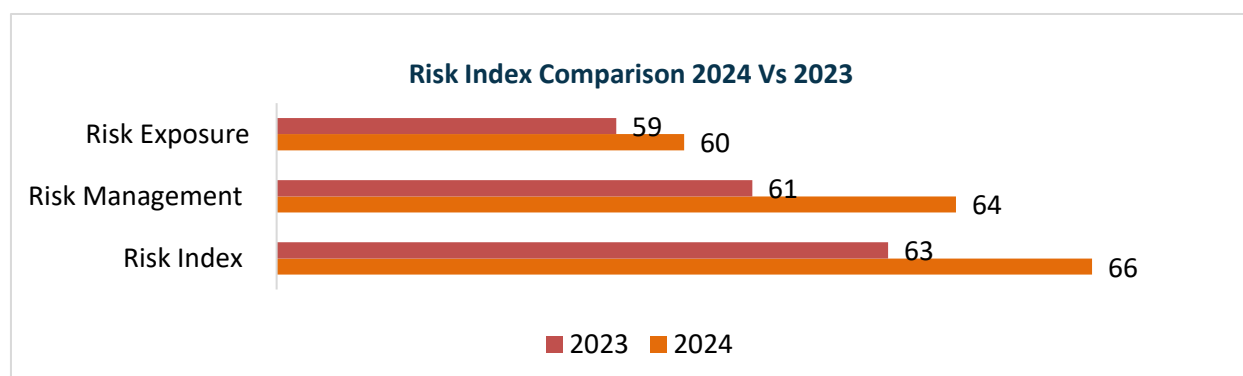
The Russia-Ukraine conflict, ongoing US-China trade tensions, and supply chain disruptions caused by climate change-related events are key factors influencing global transportation strategies. Businesses are adopting resilience strategies such as nearshoring and reshoring, bringing production and distribution centers closer to their target markets to reduce reliance on vulnerable global trade routes.

AI is playing a transformative role in the logistics industry, enabling businesses to streamline operations and improve decision-making. AI-powered predictive analytics are helping logistics firms forecast demand, manage inventory, and optimize fleet management. Chatbots and virtual assistants are being used for customer service, reducing response times and enhancing client interactions.

Machine learning algorithms are also improving fraud detection in logistics, identifying anomalies

in transactions and preventing financial losses. AI-driven autonomous vehicles and self-driving trucks are in advanced testing phases, with some logistics companies already incorporating them into operations to reduce labor costs and improve efficiency.

# Transportation & Logistics Sector Risk Index 2024 Vs 2023



*Figure 4: Detailed Comparative Analysis 2024 Vs. 2023*

## Transportation & Logistics Sector Risk Index 2024 Vs 2023

The overall Risk Index for Transportation & Logistics sector increased from 63 to 66 in 2024, moving it from optimal risk index to superior risk index.

## Transportation & Logistics Sector Risk Exposure 2024 Vs 2023

In 2024, the risk exposure in India's Transportation & Logistics sector increased compared to the previous year, driven by a range of factors that put additional strain on operations. The sector faced heightened risks due to continuing geopolitical tensions, particularly the Israel-Palestine conflict, which disrupted global trade routes and impacted fuel prices, increasing the overall cost of transportation. The global recession concerns also contributed to uncertainty in international trade, influencing demand and supply chain stability. Domestically, inflationary pressures—especially rising fuel costs—further compounded the risks, impacting operational costs across both road and air transport.

## Transportation & Logistics Sector Risk Management 2024 Vs 2023

Risk Management within the sector saw a notable increase in 2024, as companies recognized the need for enhanced resilience and risk mitigation strategies. To cope with the rise in operational and regulatory risks, companies intensified their focus on technology integration and automation, which allowed for better management of supply chain disruptions, improved forecasting, and minimized human error. There was a greater emphasis on diversifying transportation methods (e.g., multimodal logistics) and sustainability practices to mitigate the environmental impact and reduce dependency on volatile fuel markets. Additionally, companies reinforced their cybersecurity measures to protect against growing technology risks, as digital transformation within the sector accelerated.

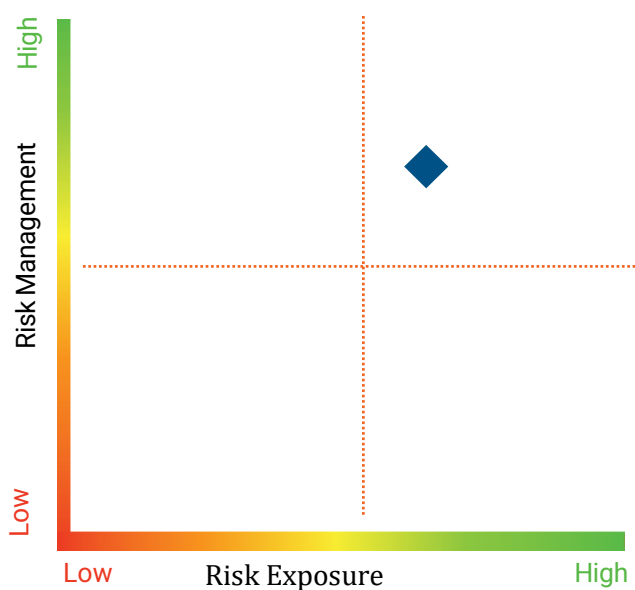


# Key Highlights

## Risk Dimension Analysis: Market and Economy

**Risk Exposure Score: 65**

**Risk Management Score: 67**



### Inflation

■ The transportation sub-index of the CPI basket in various global markets has shown an upward trend in 2024, driven by fuel price fluctuations and supply chain disruptions. In India, the fuel CPI reached 182.5 in February 2024, reflecting the continued impact of global crude oil price volatility.

■ Rising cost-including fuel, labor, and raw materials—are putting pressure on profit margins, especially when demand remains volatile. This cost-price squeeze is forcing companies to adjust service offerings, optimize

capacity, and seek alternative fuel sources to maintain operational efficiency. The ripple effects of inflation could impact customer satisfaction and long-term loyalty if cost-cutting measures reduce service quality.

■ Labor costs have surged due to inflation-driven wage hikes. Truck drivers, warehouse workers, and logistics personnel are demanding higher wages to keep up with the rising cost of living. This increase in labor expenses is particularly challenging for logistics firms operating on thin profit margins, forcing them to either pass costs onto consumers or reduce workforce sizes, leading to potential service delays.

### Taxation Risk

■ In 2024, logistics and transportation firms are grappling with higher tax rates, stricter compliance rules, and evolving GST structures. Many governments are introducing carbon taxes, higher excise duties on fuel, and import/export duties, which are driving up operating costs. In India, for example, GST on logistics services remains at 5% (without input tax credit) or 12% (with input tax credit), but stricter compliance measures are making tax filing more

complex.

- E-way bill regulations have been tightened to prevent tax evasion in goods transportation. Businesses must now generate e-invoices for shipments over a certain value threshold, ensuring transparency but also increasing the administrative burden. Failure to comply can result in penalties and shipment delays, adding operational risks.
- As sustainability becomes a priority, governments are introducing carbon taxes on high-emission vehicles and incentivizing eco-friendly fleets. Logistics firms that rely on diesel-powered trucks and ships are now facing additional levies, pushing them to invest in electric or hydrogen-powered alternatives despite high upfront costs.

### **Geopolitical Risks**

- Geopolitical tensions in 2024 are creating significant disruptions in global trade, shipping routes, and supply chain stability. Conflicts in key regions, including the Russia-Ukraine war, tensions in the South China Sea, and instability in the Middle East, have resulted in trade restrictions, sanctions, and rising fuel prices. The ongoing Red Sea crisis, where Houthi attacks on cargo vessels have forced ships to reroute around Africa via the Cape of Good Hope, has increased transit times and shipping costs for major global trade routes.
- Geopolitical conflicts often lead to port closures, naval blockades, and security risks for cargo ships. The Black Sea shipping corridor remains volatile, impacting grain and energy exports, while security threats in Suez Canal and Red Sea routes have forced vessels to take longer and costlier detours.

### **Foreign Exchange Risk**

- The transportation and logistics industry operates across multiple countries, making it highly vulnerable to foreign exchange (forex) fluctuations. In 2024, volatile currency movements due to global inflation, interest rate changes, and geopolitical instability are affecting freight rates, fuel costs, and cross-border trade expenses. When a local currency weakens against the US dollar or euro, imported fuel, vehicle parts, and logistics services become more expensive, increasing operational costs for logistics firms.
- A weaker local currency increases the cost of imported goods and spare parts, affecting vehicle maintenance, warehousing expenses, and overall supply chain costs. This forces companies to either absorb the losses or pass on the additional costs to customers. Many firms are now localizing their supply chains by sourcing vehicles, spare parts, and warehouse equipment locally to minimize exposure to forex risks and import taxes.
- Since oil prices are globally traded in US dollars, currency depreciation directly increases fuel costs for logistics providers in countries with weaker currencies. This raises freight rates and supply chain costs, affecting businesses and consumers alike. Many companies are securing long-term fuel contracts at pre-negotiated rates to ensure stability in fuel expenses despite forex fluctuations. Others are transitioning to alternative energy sources, such as electric trucks

and biofuels, to reduce dependency on dollar-priced fuels.

### Regulatory Risk

- Governments worldwide are tightening vehicle emission standards to reduce carbon footprints. In 2024, many regions, including the EU, US, and India, have introduced stricter fuel efficiency norms, carbon taxes, and electric vehicle mandates. Non-compliance leads to hefty fines, operational restrictions, and increased costs for companies still reliant on diesel-powered fleets. To mitigate this risk, logistics firms are investing in low-emission fleets, adopting electric and hydrogen-powered trucks, and using AI-driven route optimization to reduce fuel consumption. Many companies are also participating in carbon credit programs to offset emissions and comply with sustainability targets.
- Governments are constantly modifying taxation policies, GST rates, and e-invoicing mandates for logistics providers. In India, e-way bill regulations and GST input tax credit rules have been revised, requiring logistics firms to update their billing systems and compliance frameworks. Companies failing to comply face penalties, delayed shipments, and cash flow disruptions. To counter this, firms are adopting automated tax compliance software, integrating AI-driven invoice verification tools, and seeking tax advisory services to remain up to date with regulatory changes.

### Competitive Risk

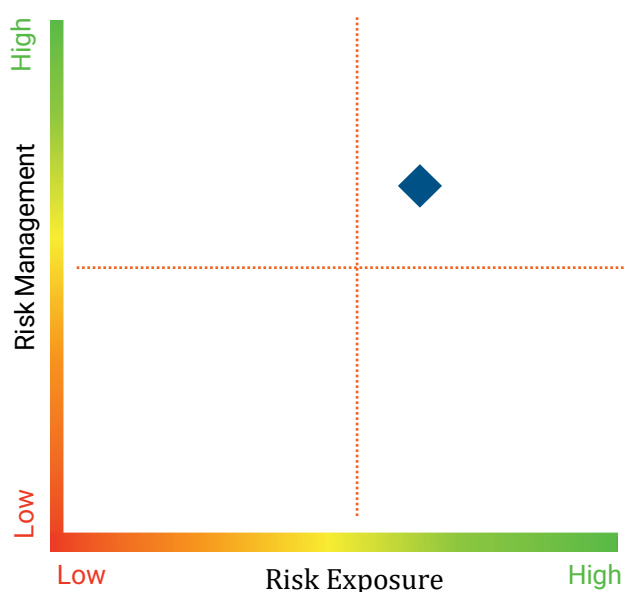
- The transportation and logistics sector is becoming increasingly crowded with both traditional players and tech-driven startups, leading to fierce price competition. Companies are being forced to lower freight rates, which reduces profit margins, especially for small and mid-sized operators. Large firms with greater financial resources dominate by offering deep discounts and premium service packages, making it difficult for smaller companies to compete. To mitigate this risk, logistics providers are diversifying their service offerings, such as providing value-added services like temperature-controlled shipping, end-to-end supply chain solutions, and last-mile delivery innovations to differentiate themselves.
- The rise of AI-powered logistics platforms, automation, and blockchain-based supply chain solutions is reshaping the industry. Companies that fail to invest in digital transformation risk becoming obsolete. E-commerce giants like Amazon and Alibaba are setting new standards with automated warehouses, AI-driven route optimization, and drone-based last-mile delivery. Smaller firms struggle to match this level of efficiency. To stay competitive, logistics businesses are partnering with tech firms, adopting AI-driven fleet management, and integrating IoT sensors for real-time tracking to enhance operational efficiency.
- India's logistics sector is highly fragmented, with over 85% of the trucking market dominated by small and unorganized players. With the entry of large corporations like Adani Logistics, Mahindra Logistics, and Reliance Logistics, smaller firms are struggling to stay competitive. The growing presence of international 3PL (Third-Party Logistics) companies like DHL, FedEx, and

Maersk has further intensified competition. To mitigate this risk, many small and mid-sized logistics players are joining hands with digital freight marketplaces like BlackBuck, Rivigo, and LorryGuru to improve efficiency, reduce costs, and gain wider market access.

## Risk Dimension Analysis: Technology

**Risk Exposure Score: 59**

**Risk Management Score: 62**



### Innovation Risk / Obsolete Technology

■ Many traditional logistics companies in India still rely on manual processes, outdated ERP systems, and paper-based documentation, making their operations inefficient compared to tech-driven competitors. With global logistics shifting towards AI-based route optimization, blockchain-powered supply chain management, and IoT-enabled tracking, Indian firms that fail to upgrade risk falling behind. To mitigate this risk, companies are embracing cloud-based logistics platforms, digital freight marketplaces, and AI-driven fleet management tools to

enhance operational efficiency and stay competitive.

- Many trucks lack GPS tracking, AI-based route optimization, and predictive maintenance tools, leading to higher costs and inefficiencies. Mitigation: Investment in telematics, AI-powered fleet management, and fuel-efficient vehicles.
- Indian ports and warehouses use manual cargo handling and outdated inventory systems, slowing down operations. Mitigation: Government investment in smart ports, AI-based supply chain monitoring, and robotics-driven warehousing.

### Intellectual Property Risk

- Logistics companies investing in AI-driven route optimization, automated warehousing, and blockchain-based tracking face risks of their technology being copied or used without authorization.
- Adoption of end-to-end encryption, multi-layer cybersecurity protocols, and AI-driven fraud detection is helping firms protect their intellectual assets.
- India's IP protection framework is evolving, but enforcement remains a challenge, allowing unauthorized duplication of software, tracking algorithms, and automation designs.

### **Disruptive Technology**

- Governments and private players are promoting domestic research in areas like AI-driven logistics optimization, sustainable transportation technologies, and advanced manufacturing processes.
- Investments in EV charging stations, energy-efficient facilities, and partnerships for green logistics are addressing the environmental impact of technological advancements.
- Continuous dialogue with regulatory authorities is helping to establish clear guidelines for the adoption of technologies like autonomous vehicles and blockchain.
- Companies are prioritizing advanced security measures such as end-to-end encryption, regular penetration testing, and real-time monitoring to counter cyber threats.

### **Data Compromises**

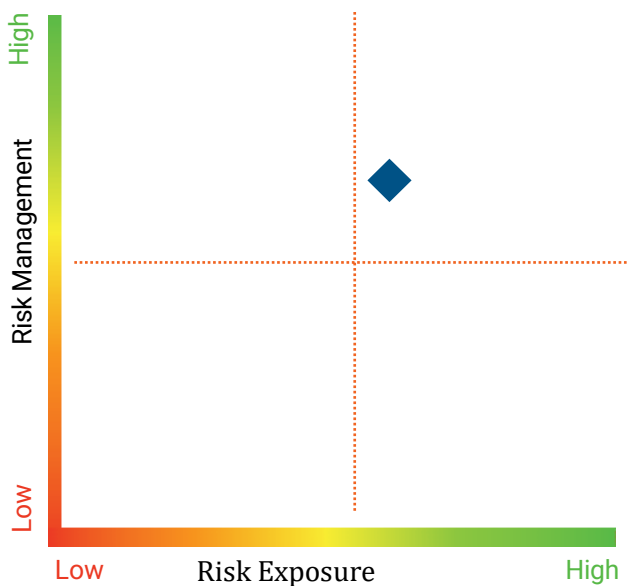
- Companies are aligning their policies with data protection laws like GDPR (General Data Protection Regulation) or ISO 27001 to maintain compliance and mitigate legal risks.
- Real-time monitoring systems and AI-driven analytics enable organizations to identify and mitigate threats proactively.
- Implementation of firewalls, encryption, and intrusion detection systems helps protect sensitive data from unauthorized access.



# Risk Dimension Analysis: Operational and Physical

**Risk Exposure Score: 62**

**Risk Management Score: 64**



## Critical Infrastructure Failure / Machine Breakdown

- Advanced technologies like IoT sensors and AI are used to monitor machine performance in real time, predicting potential failures before they occur.
- Scheduled maintenance programs ensure machinery and infrastructure remain in optimal working condition, reducing unexpected breakdowns.
- Delays in service or delivery due to critical infrastructure failure can lead to loss of customer trust and damage to a company's reputation.

- Investments in durable, high-quality equipment and infrastructure reduce the likelihood of frequent breakdowns.

## Business Continuity / Sustainability

- Governments worldwide are mandating the use of electric vehicles (EVs) and alternative fuels to reduce carbon emissions. Incentives, such as tax benefits and subsidies, are being provided to companies adopting sustainable practices.
- Regulations like the Euro 6 emission standards in Europe and Bharat Stage VI (BS-VI) norms in India enforce stricter limits on vehicle emissions. These standards aim to minimize air pollution and encourage the use of cleaner technologies.
- Regulations are promoting the use of blockchain and IoT for real-time tracking and transparency in logistics. Data-sharing protocols are being standardized to enhance collaboration across the supply chain.

## Supply Chain Risk

- Geopolitical tensions, such as the Red Sea Crisis, caused rerouting of shipping routes, increasing transit times and costs. Companies adopted multi-sourcing strategies and localized supply chains to reduce dependency on single regions or suppliers.
- The growing reliance on digital platforms and IoT devices exposed the sector to cybersecurity

threats, including data breaches and ransomware attacks. Investments in AI-driven predictive analytics, blockchain for transparency, and IoT for real-time tracking enhanced supply chain resilience

- Fuel price volatility and increased operational expenses, including higher personnel costs, strained profit margins

### **Commodity Price Risk - Volatility in prices of raw materials**

- Fluctuations in the prices of raw materials, such as metals, energy, and agricultural products, directly impact manufacturing and operational costs.
- Companies are using financial instruments like futures and options to lock in prices and mitigate the impact of price fluctuations.
- Businesses are adopting flexible pricing strategies to pass on cost increases to customers while maintaining competitiveness.

### **Portfolio Risk**

- Many logistics companies in India primarily depend on road transport, making them vulnerable to fuel price fluctuations, regulatory changes, and infrastructure bottlenecks. Firms are diversifying their logistics portfolio by investing in rail (Dedicated Freight Corridors), inland waterways, and air cargo solutions to reduce dependency on a single mode.
- Some logistics firms generate most of their revenue from a handful of major clients, making them financially unstable if those clients switch providers or face downturns. Companies are expanding their client base across industries, including e-commerce, FMCG, pharmaceuticals, and agriculture, to spread risk.
- Companies that heavily invest in a single technology (e.g., diesel fleets, traditional warehouses) risk obsolescence if newer technologies (EVs, automated warehouses) gain traction. Firms are balancing their portfolios by investing in both traditional and emerging technologies like AI-driven logistics, electric trucks, and smart warehouses.

### **Environmental Hazard Risk**

- India has witnessed increasing cyclones, floods, and heatwaves, causing road closures, port shutdowns, and railway disruptions. These events delay shipments, increase operational costs, and damage goods in transit. Companies are investing in climate-resilient infrastructure, AI-based weather prediction systems, and adaptive route planning to minimize disruptions.
- With rising concerns over air pollution, the Indian government has introduced stricter emission norms (BS-VI standards) and carbon taxes on transportation. Companies still operating diesel fleets face penalties and higher costs. Logistics firms are transitioning to electric vehicles (EVs), CNG trucks, and green warehousing powered by solar energy to meet environmental compliance and reduce emissions.

### **Workplace Accident**

- Indian truck drivers often work long hours under poor road conditions, leading to fatigue-related accidents, vehicle collisions, and cargo damage. Poor road safety measures increase fatality risks for drivers and pedestrians. Companies are implementing driver training programs, AI-based fatigue monitoring, and telematics systems to improve road safety and reduce accidents.
- Many warehouses lack proper safety protocols, leading to incidents like falls, equipment malfunctions, and forklift accidents. Inadequate protective gear and poorly maintained storage racks increase injury risks. Firms are investing in OSHA-compliant safety training, automation (robotic picking systems), and enhanced warehouse ergonomics to prevent workplace accidents.

### **Human Resource**

- The Indian logistics sector is struggling with a lack of trained drivers, warehouse staff, and supply chain professionals. Poor working conditions and low wages discourage new talent, leading to high attrition rates. Companies are investing in driver training academies, skill development programs under PMKVY (Pradhan Mantri Kaushal Vikas Yojana), and offering better salary packages to attract and retain workers.
- India's logistics sector, particularly ports, railways, and trucking associations, has faced union-led strikes over wages, working hours, and safety concerns, leading to supply chain disruptions. Companies are engaging in proactive labor negotiations, offering fair working conditions, and leveraging automation to reduce reliance on manual labor.

### **Financial Risk**

- The logistics sector in India heavily depends on diesel-powered trucks, making it vulnerable to fluctuations in fuel prices. Global crude oil price hikes increase transportation costs, directly impacting profit margins. Companies are investing in electric vehicles (EVs), optimizing routes with AI, and adopting alternative fuels like CNG and biofuels to reduce fuel dependency.
- Expanding warehouses, logistics hubs, and modern fleet management systems requires significant investment, making it difficult for small and mid-sized logistics firms to compete. Companies are leasing vehicles instead of buying, adopting asset-light business models, and securing government subsidies under PM Gati Shakti for infrastructure development.
- Many logistics firms rely on loans for purchasing trucks, setting up warehouses, or expanding operations, leading to high debt-to-equity ratios. Rising interest rates further increase borrowing costs.

### **Breaches of law (local/ international)**

- Many logistics firms fail to comply with weight restrictions, road safety norms, and driver working hour limits, leading to hefty fines, vehicle seizures, and business disruptions.

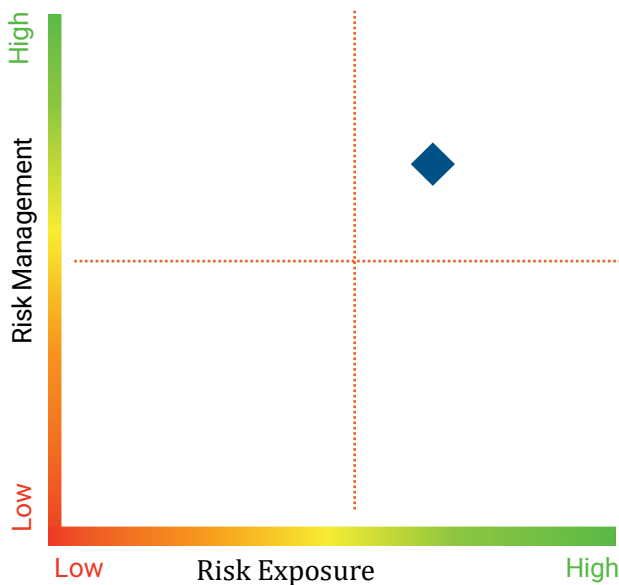
Companies are implementing GPS-based tracking for compliance, training drivers on regulations, and using automated logbooks to monitor driving hours.

- Many firms face delays, penalties, and shipment confiscation due to misdeclaration of goods, improper documentation, or non-compliance with import/export regulations. Logistics companies are digitizing trade documentation, using AI-powered customs compliance tools, and hiring legal experts for international shipments.

# Risk Dimension Analysis: Crime and Security

**Risk Exposure Score: 55**

**Risk Management Score: 61**



## Cyber-crimes

■ With the increasing digitization of supply chains, logistics firms are vulnerable to ransomware attacks, hacking, and system breaches, leading to disruptions in freight management and cargo tracking. Companies are investing in cybersecurity infrastructure, implementing AI-driven threat detection systems, and conducting regular vulnerability assessments to safeguard their networks.

■ Logistics providers handle large volumes of customer data, including shipment details,

payment information, and personal addresses. Cybercriminals target this data for identity theft and fraud.

■ Firms are encrypting sensitive data, using multi-factor authentication, and ensuring compliance with India's Data Protection Laws to prevent unauthorized access.

## Counterfeiting

■ India's logistics sector faces rising counterfeit goods in pharmaceuticals, electronics, and FMCG, leading to brand reputation damage and legal issues for logistics firms handling fake products unknowingly. Companies are implementing blockchain-based supply chain tracking, using AI-powered authentication, and collaborating with manufacturers to verify product legitimacy.

■ Criminal networks infiltrate logistics hubs, ports, and trucking routes to replace genuine products with counterfeits, impacting customer trust and increasing financial losses. Firms are using tamper-proof packaging, IoT-enabled smart tracking devices, and real-time cargo monitoring to prevent unauthorized handling.

■ Indian ports witness large-scale counterfeit imports disguised as legitimate shipments, affecting tax revenues, increasing customs fraud, and posing safety risks. Authorities and logistics providers are strengthening customs inspection with AI-driven scanners, collaborating with law enforcement, and enforcing strict documentation checks.

## Threat to Women Security

- With growing efforts to include women in trucking and warehouse roles, long-distance travel, unsafe rest stops, and lack of secure accommodation pose major safety concerns for female workers. Companies are setting up women-only rest areas, implementing GPS tracking with emergency alerts, and ensuring safe transport options for female drivers.
- Women in warehouses, sorting centers, and last-mile delivery roles often face harassment, unsafe working hours, and lack of grievance redressal mechanisms. Firms are introducing workplace safety policies, enforcing POSH (Prevention of Sexual Harassment) compliance, and deploying CCTV surveillance in work areas.
- Female delivery personnel, especially in gig economy jobs (e-commerce, food delivery, and courier services), are vulnerable to harassment and security risks in isolated or high-crime areas.  
Companies are providing SOS-enabled tracking apps, ensuring delivery assignments in safer zones, and training employees in self-defense and emergency protocols.

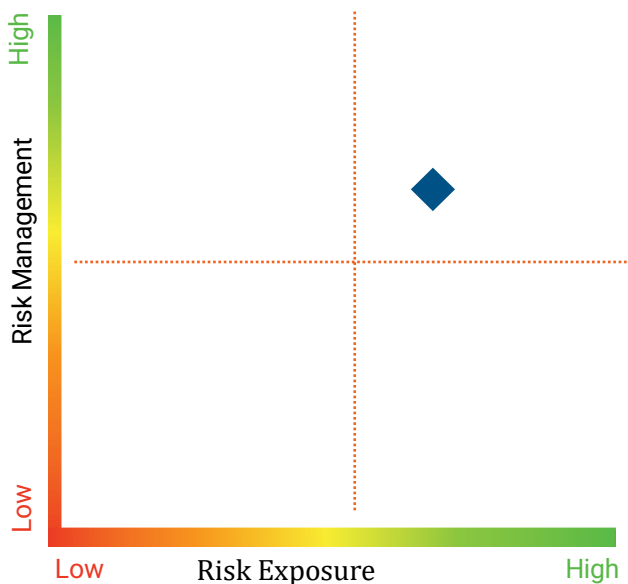
### **Terrorism**

- Terrorist groups may attack high-density logistics hubs, railway stations, airports, and highways, causing disruptions in goods movement and endangering lives. Authorities are strengthening security at key transport hubs with AI-driven surveillance, armed personnel, and stricter access controls to prevent potential attacks.
- Terror groups exploit transport and courier services to move illegal weapons, explosives, or counterfeit currency, putting logistics firms at risk of unintentional involvement in criminal activities. Companies are implementing advanced cargo screening, enhancing KYC verification for shippers, and collaborating with law enforcement for threat detection.

# Risk Dimension Analysis: Natural Hazard and Event

**Risk Exposure Score: 60**

**Risk Management Score: 65**



**Natural Hazards like flood, drought, famine, earthquake, landslide etc**

■ Seasonal monsoon flooding in cities like Mumbai, Chennai, and Kolkata often leads to waterlogged highways, damaged rail tracks, and delayed cargo movement, affecting supply chain efficiency.

Companies are using predictive weather analytics, diversifying transport routes, and maintaining emergency stockpiles to minimize disruptions.

■ Earthquakes in seismic zones like Gujarat, Himachal Pradesh, and Northeast India can cause infrastructure collapse, halting cargo movement and increasing reconstruction costs. Companies are designing earthquake-resistant warehouses, strengthening port structures, and implementing rapid-response disaster recovery plans.

## Pandemic and other Global Epidemic Diseases

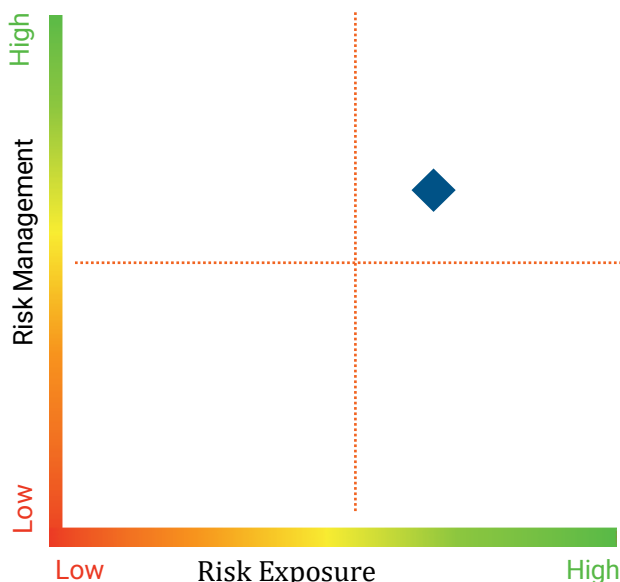
- Outbreaks of COVID-like pandemics or other global epidemics can lead to border closures, restricted movement of goods, and labor shortages, affecting supply chain efficiency. Companies are diversifying supply sources, adopting automation in warehouses, and using digital tracking systems to minimize disruptions.
- Epidemic outbreaks lead to strict customs regulations, mandatory quarantines, and delayed clearance at seaports and airports, increasing costs and shipping times. Logistics firms are investing in digital documentation, AI-powered customs clearance, and predictive analytics to avoid delays.



# Risk Dimension Analysis: Strategic Risk

**Risk Exposure Score: 56**

**Risk Management Score: 63**



## Resource scarcity / Misutilization / Overall Utilization

■ India's logistics sector heavily depends on diesel and petrol, and any supply disruptions or price hikes lead to higher operational costs and freight charges.

Companies are investing in fuel-efficient vehicles, shifting to EVs and CNG trucks, and optimizing delivery routes using AI-based fleet management systems.

■ A shortage of trained drivers, warehouse managers, and logistics experts reduces efficiency, increasing delays, errors, and service disruptions. Firms are launching skill

development programs, offering better wages, and integrating AI-powered warehouse automation to reduce dependency on manual labor.

- Poor planning leads to half-empty trucks, inefficient loading, and unnecessary fuel consumption, increasing logistics expenses and carbon emissions. Firms are using AI-based load optimization, adopting shared logistics networks, and implementing real-time fleet tracking to maximize vehicle capacity.

## Public Sentiments

- Increasing carbon emissions from trucks, congestion, and pollution from logistics operations have led to public backlash and stricter regulations on fuel usage and emissions. Companies are transitioning to electric and CNG vehicles, adopting green logistics practices, and investing in carbon offset programs to improve public perception.
- Poor last-mile delivery performance, damaged goods, late shipments, and poor customer service can lead to negative social media backlash and loss of brand trust. Logistics firms are enhancing real-time tracking, improving delivery efficiency using AI, and offering compensation policies for delayed shipments.

## Delay in Execution of Projects

- Large-scale projects like highway expansions, dedicated freight corridors, and new

warehousing hubs often face delays due to land acquisition issues, environmental clearances, and bureaucratic hurdles, disrupting supply chain operations. Government and private players are streamlining approval processes, using public-private partnerships (PPPs), and adopting fast-track construction methods to speed up project completion.

- Logistics firms that fail to upgrade to AI-driven tracking, IoT-enabled fleet management, and automated warehouses experience operational inefficiencies and lost competitive edge. Companies are prioritizing digital transformation, increasing investments in smart logistics solutions, and training employees in tech adoption to enhance execution speed.

### **Increased Number of Recalls and Quality Audits**

- Industries like pharmaceuticals, food & beverages, and automobiles face high recall rates due to safety concerns, contamination, or defective parts, leading to financial losses and reputational damage. Companies are enhancing quality control measures, using AI-based defect detection, and improving traceability with blockchain technology to minimize recalls.
- Authorities like FSSAI, BIS, and CDSCO have tightened inspection norms, causing frequent quality audits, shipment delays, and additional compliance costs for logistics providers. Firms are investing in regulatory compliance software, conducting regular internal audits, and training staff on evolving quality standards to avoid penalties.

### **Failed / Hostile Mergers & Acquisitions**

- Poorly executed mergers between logistics firms, e-commerce delivery providers, or freight companies lead to operational inefficiencies, cultural clashes, and financial losses. Companies are conducting thorough due diligence, aligning business strategies, and ensuring smooth integration of operations and technology before finalizing mergers.
- The Competition Commission of India (CCI) closely monitors large-scale mergers to prevent monopolies, delaying or blocking acquisitions that restrict fair competition. Firms are ensuring compliance with antitrust laws, maintaining transparency with regulators, and negotiating favorable deal structures to avoid legal roadblocks.

# ICICI LOMBARD: Key Solution Offerings

## Property

Evaluation of various risks to understand areas for improvement, such as fire preparedness, electrical safety, safety & emergency preparedness, maintenance and house-keeping, etc. By evaluating risks, we can identify potential hazards and advise on mitigating risks.

- **Property Loss Prevention:** We believe users should carry out detail risk visit followed by benchmarking of the industry good practices (Industry Risk Profiling). For instance, industries such as chemicals & petrochemicals impose a major challenge in manufacturing due to inherent risk. We recommend solutions for “Low Focus - High Loss Areas. This can help in minimizing severity losses. All the risk recommendations are grouped into four different segments based on cost-impact matrix and the priority is decided accordingly. Key decision makers at user’s end can ensure to get recommendations implemented.
- **Comprehensive Risk Assessment (CRA):** A Comprehensive Risk Assessment is a systematic approach to electrical safety specially designed for industries to evaluate potential hazards and recommend improvements, coupled with savings. It is an important tool for identifying risks, severity of hazards and avoid incidents arising out of electrical faults.
- **Electrical Risk Assessment (ERA):** An Electrical Risk Assessment is a basic solutions focused towards electrical safety designed to evaluate potential hazards and recommend improvements. Majority of fires in India are caused due to electrical installations. Ensuring safety of electrical installations of industrial unit or organization is critical to reduce risk and ensure safety compliance with Safety Standards and Regulation. ERA is an important tool which have 6 inbuilt solutions such as Electrical Audit & Thermography, etc.
- **Fire Hydrant IoT:** Fire Hydrant IoT: Fire hydrant IOT (ILGIC Patented Solution) is an automated device for monitoring key parameters such as Hydrant and Sprinkler line pressure, Main and Jockey pump on-off status, Firewater tank level. These can be interpreted to provide intelligence on unauthorized usage of water and leakage, effectively saving water. This information pertaining to breach of above-mentioned parameters is notified through dashboard & email alerts. Monitoring of such system is essential as these fire fighting systems are lifeline during any emergency.
- **Temperature & Humidity IoT:** Provides end-to-end plug & play ambient temperature and humidity monitoring Solution to manage temperature and humidity-controlled environment more efficiently. It generates - Automated reports (historical trends for different locations etc.). Intelligent Alerts - SMS & emails is sent to the concerned (one or multiple) stakeholders in case

any anomaly.

- **Electrical IoT:** Electrical IoT is a patented solution (ILGIC Patented Solution) to avoid any instances of short circuiting due to abnormal voltage & current conditions. These are mainly built for application in warehouses. This solution has been created as these locations are having huge stocks with lesser manpower during emergencies mainly during non-business hours. The device automatically cuts off power in case of abnormality & restarts back when situation is normal.
- **Ultrasound technology for Gas Leak Detection:** Use of ultrasound technology for leak detection in process lines. The methodology recommends a non-destructive way of avoiding losses with no downtime. The main objective is to identify the leakages in all pressurized systems including pipelines by using ultrasound technology and tag them for rectification. It also includes listing leaks with individual CFM losses and cost savings possible.
- **Fire Mitigation Solutions:** Solutions have been designed based on their specific needs, keeping in mind the level of awareness and complexity of the location. These best-in-class solutions which are installed at correct locations.
- **Renewable Solutions:** In line with our philosophy of recommending business solutions, we recommend efficiency measurements for wind and solar power generating assets. Drones are used to provide high accuracy and quick reach which is not possible through any traditional methodology. User get to know about the low performing module and ways to improve the same within the entire solar plant with latlong identification. We recommend advanced drone-based technology for inspection of wind turbines and solar PV modules.

## Marine

In the dynamic realm of marine insurance, cargo faces a myriad of risks, from unpredictable weather conditions to unforeseen accidents, safeguarding against potential challenges at sea and in surface transportation / INLAND movement is paramount.

- **MLCE (Marine loss control engineering):** Frequent occurring losses due to Peril such as accident, wet damage, theft, non-delivery, pilferage, hijack of consignments, mishandling shall be examined with ground inspections, to determine root cause analysis with MIS, claim assessment reports collectively in the form of logistics audit.
- **MWS (Marine warranty surveys):** Our inhouse practices of condition survey prior risk inception & post risk inceptions helps our customers to have an independent risk management of the high value / ODC (over dimensional cargo) movements conducted by the Insured so that reliance over logistics service provider is supervised with Insured's nominated risk assessment team having a worldwide presence with a supervised network. Not only marine cargo, but HULL insurance risk exposures are surveyed for risk assessment and risk management.
- **Technical engagements:** Uncertainty of the risk associated with the transit can be concluded

with marine experts. Assessing vessel's condition for SEA transit as a full chartered load on behalf of the Insured, Risk assessment of cargo from packing, handling, lifting, securing, transit and final delivery methodology shall be discussed with the logistics team. Vessel selection, stowage and securing methods can be jointly discussed with the User's logistics team for a safe transit, dispatch and delivery coverage after assessing the risk on desktop with a virtual or F2F engagement and / or a ground visit.

- **Transit Telematics:** With the government's constant agenda of upgrading to digitalized operations by introducing ULIP and NITI Aayog mode of operations, not having a visibility of transit will hamper your logistics operations. IOT and SAAS (software as a service) based products incorporating the design of a cost efficiency and loss mitigation system can help enhance delivery with safe operation. Additionally, a 24\*7 risk control is recommended to effectively monitor and mitigate theft / pilferage prone dispatches to ensure a safe transit delivery. Be it a temperature-controlled cargo, expensive cargo in transit or liquid bulk cargo in lorry tankers, it is essential to mitigate the risk and losses that might occur due to accidents caused by fatigue, unexplained conditions, or theft. We have case studies of successful recovery of stolen goods with our telematics services.

## Liability

The growing adoption of technology in organizations has not only led to crucial data being stored and processed on digital platforms but also facilitated the automation of operations, thereby enhancing business efficiency. However, this shift also amplifies cyber risk, exposing sensitive information to potential threats and rendering organizations vulnerable to financial losses, reputational damage, and legal liabilities. As organizations delve deeper into the digital realm, fortifying cybersecurity measures becomes imperative to safeguard operational integrity and protect critical data from unauthorized access or breaches.

- **Phishing Simulation:** Experience cutting-edge phishing simulation tests to fortify your organization's defenses against cyber threats. You can enable phishing attack simulations to educate your employees on identifying and handling potential risks. Through engaging and interactive scenarios, you can raise awareness and equip your team with the necessary skills to detect and thwart phishing attempts.
- **Awareness Campaigns:** With Cyber Awareness Campaigns, you can go beyond just educating organizations about cybersecurity. The campaigns are meticulously designed to empower your team with essential best practices, insights into global incident trends and a comprehensive understanding of potential risks. Interactive designs help you captivate and engage your employees, fostering a cyber-aware culture within your organization. Customized campaigns can perfectly align with your unique needs and requirements and stay informed and vigilant.
- **Incident Response and Readiness:** A bespoke service that fortifies organizations with robust processes and clear communication channels for proficient cyber-incident management. This

recommendation not only trims down the incident response time but also facilitates prompt, accurate action within the crucial initial hours. By meticulously assessing your organization's incident response policies and sculpting response systems in alignment with global industry benchmarks, this ensures you are thoroughly prepared to tackle the evolving digital threat landscape.

- **CXO's Session:** CXO's Session service provides immersive training sessions, personalized coaching & interactive discussions to empower your CXOs with cybersecurity knowledge that aligns with your business objectives. The subject matter experts recommend strategic guidance and in-depth insights into the ever-evolving threat landscape, translating technical jargon into practical language. Regular cybersecurity forums facilitate peer-to-peer learning and benchmarking against industry standards. CXO- focused approach ensures a cyber-aware leadership team that drives your organization's success securely into the future.
- **Weekly Threat Intelligence Bulletin:** Stay ahead of cyber threats with the Weekly Threat Intelligence Bulletin. We meticulously curate this comprehensive bulletin, providing timely insights on emerging threats, vulnerabilities, and attack trends. Delivered directly to your inbox, it recommends proactive advantage by promptly identifying potential risks. With continuous updates and ongoing support, you can confidently adapt your Defence strategies to combat the most sophisticated threats. It enables you to make informed decisions and protect your organization from emerging threats with Weekly Threat Intelligence Bulletin.
- **Email Security:** Safeguard your organization's communication channels with the Email Security solutions. We recommend robust measures to protect against phishing, malware & other email-borne threats. The advanced email filtering and authentication technologies prevent malicious emails from reaching your users inbox. Implementing encryption protocols to ensure the confidentiality of sensitive data in transit is a good idea. With real-time monitoring and threat intelligence, email security measures provide proactive Defence, detecting and blocking suspicious activities promptly. You can protect your organization's reputation and sensitive information with comprehensive Email Security measures, ensuring a secure and reliable email environment.
- **Agent-less Patching:** Agent-less patching platform for companies and MSMEs who want a rapid solution to distribute critical security updates and vulnerability fixes without causing system downtime. The patching platform not only assists with patch deployment, but it also enables your system administrator in understanding the patches, Adjustments & impact of the patches on the system. Before applying the patch, the software generates a warning if the system requires downtime or a reboot. You can experience a hassle-free patching process with the platform recommending enhanced security for your organization.
- **EDR/MDR Services:** Elevate your organization's cybersecurity capabilities with the Endpoint Detection and Response (EDR) and Managed Detection and Response (MDR) services. These advanced solutions provide continuous monitoring, rapid threat detection & effective incident response, safeguarding your digital assets in real-time. With EDR, proactively detect and



respond to threats at the endpoint level, while MDR service offers 24/7 monitoring and expert support. You can strengthen defenses against the most sophisticated cyber-attacks with EDR/MDR services, ensuring a resilient and secure digital environment.

- **All-in-one Operating System:** All-in-One Operating System is a true game-changing platform that provides a fortified desktop environment to foster secure collaboration and centrally managed cybersecurity resilience. Inbuilt endpoint security serves as a vigilant guard, blocking potential dangers. Effortless IT management provides with a user-friendly interface, leading to significant cost savings in IT infrastructure. It provides in-built end-point security, automated updates and patches along with extensive device reports. Organizations can unlock a secure and prosperous future by embracing the All-in-One Operating System in their IT infrastructure.
- **Cyber Risk Management & Compliance Dashboard:** Gain a clear understanding of your organization's cyber risk exposure with Cyber Risk Management & Compliance Dashboard. This powerful tool assesses your risk posture, quantifies potential financial Impact & evaluates compliance with industry standards and regulations. Armed with this information you can make informed decisions to prioritize cybersecurity investments and ensure compliance with relevant laws and regulations. The intuitive dashboard provides a comprehensive view of your cybersecurity performance enabling data-driven decision-making. This solution enables organizations to stay ahead of threats and ensure a resilient cybersecurity posture.
- **Security Score Card:** Track your organization's cybersecurity performance with a dynamic Security Score Card solution. This comprehensive rating provides a clear overview of your security posture, highlighting areas that require attention and improvement. It empowers data-driven decisions, allowing you to focus on strengthening key areas. Identify potential risks and compliance gaps with industry standards and regulations. With actionable insights, you can prioritize cybersecurity investments effectively, ensuring a robust and resilient Defence against cyber threats. This Security Score Card solution can be your strategic tool to proactively elevate your cybersecurity posture.
- **VAPT:** Enhance your organization's cybersecurity defenses with the Vulnerability Assessment and Penetration Testing (VAPT) service. Skilled professionals conduct rigorous assessments, simulating real-world attacks to identify potential vulnerabilities in your digital infrastructure. With detailed insights, you can fortify your defenses and proactively address weak points before malicious actors exploit them. This service goes beyond identifying vulnerabilities, you also get actionable recommendations to mitigate risks effectively. Organizations can be one step ahead of cyber threats, ensuring the security and resilience of your critical assets with the comprehensive VAPT service.

## Engineering

In engineering risk management, it's vital to adopt a holistic approach that extends beyond immediate concerns to proactively tackle potential risks and uncertainties. Drawing upon



considerable expertise in claims handling and risk evaluation, a robust and customized protection strategy can be ensured.

Construction endeavors face a myriad of risks such as floods, cyclones, impact damage, fires, theft, and collapse. However, the adverse effects of these risks can be mitigated through the implementation of extensive loss prevention measures specifically tailored for engineering projects.

- **Engineering Loss Prevention Exercise (ELP):** To effectively manage losses in Engineering Risk, fostering a culture of loss prevention is crucial. It's widely acknowledged that each construction project is distinct, presenting specific challenges related to geography, geology, occupancy, and construction methodology, which in turn result in unique associated risks. To cater this challenge a specific risk management framework which deals about the unique requirement of each project could be created for the loss prevention with reference to some parameters of distinctive research and industries best practices.
- **Drone Solutions for Linear Projects:** In recent years, the construction industry has undergone significant changes due to the introduction of drone-based construction solutions. These cutting-edge technologies are transforming the planning, design, and execution of construction projects. A major benefit of drone technology in construction is its capacity to conduct aerial surveys, providing extensive coverage and detail. Drones, equipped with advanced cameras and sensors, can rapidly capture precise images and data, offering project managers valuable insights into site conditions. This data can facilitate project planning, cost estimation and design optimization by providing a comprehensive understanding of the project's parameters.
- **CPM - Fleet & Fuel Management:** An advanced GPS-equipped sensor is available to precisely measure direct fuel consumption, evaluate engine efficiency, and detect potential tampering of diesel engines in both mobile vehicles and stationary machinery. This solution enables real-time alerts for service reminders and critical health issues, facilitating prompt resolutions and enhanced utilization. Additionally, it offers valuable insights into machinery and equipment performance through comprehensive analyses, resulting in optimized inventory usage and increased efficiency.

## Health

We highly recommend exploring proactive and preventive healthcare solutions, which can make a significant difference in maintaining good health. Recognizing that majority of in-patient department (IPD) admissions could be prevented with timely interventions and regular healthcare, it is important to focus on health, not just during illness.

- **Pioneering Digital Platform:** We recommend exploring digital health innovations offered by industry leaders, which provide cutting edge health solutions through the IL TakeCare (ILTC) app. Our platform has transformed the way health services are delivered by introducing a fully digital and cashless Outpatient Department (OPD) and Wellness Program.

- **Health Advisory Services:** We recommend a suite of health advisory services on the IL TakeCare app. Users can access health risk assessments, diet and exercise trackers, health parameter tracking and trends and sleep, meditation & hydration reminders. In addition, the platform recommends a feature to upload health records up to 1GB, and provides informative health blogs.
- **IL TakeCare App:** IL TakeCare app is a One-Stop-Solution for users with insurance needs. This robust user engagement is a testament to the high-value features that the app provides. Unique to the app is the innovative self-health assessment feature, which includes Face scan technology that can measure blood pressure, heart rate, cardiac variance, and SpO2 levels. The platform provides seamless teleconsultations with medical practitioners and specialists, and even recommends access to mental wellness experts to the insured. The facility for cashless OPD services and the efficient claim settlement process further enhance user experience. By encapsulating a wide range of state-of-the-art health services and solutions, the IL TakeCare platform revolutionizes corporate health management and serves as a comprehensive digital health solution.



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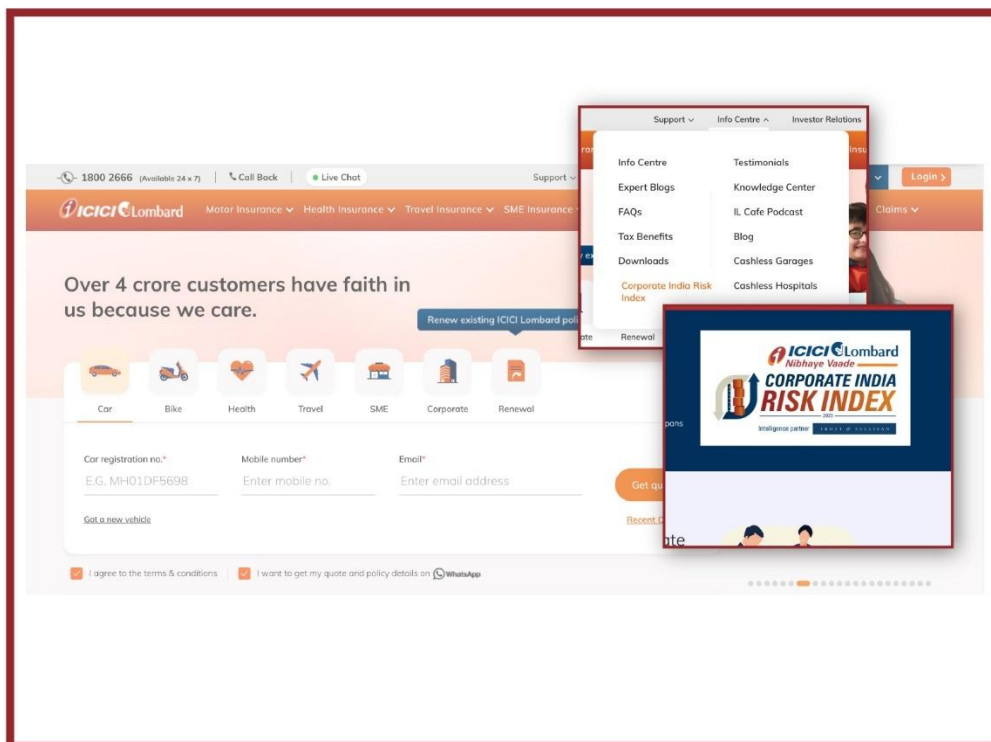
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