ICICI Lombard

CORPORATE INDIA RISK INDEX

2024

Intelligence partner FROST & SULLIVAN

Navigating Risks, Powering India's Growth

SECTOR REPORT 2024

Manufacturing

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Preface

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 manufacturing sector faced a challenging environment shaped by global economic fluctuations, regulatory changes, and supply chain vulnerabilities. Despite these headwinds, the sector demonstrated resilience and adaptability, supported by strategic government interventions, technological advancements, and evolving business practices. The global economic slowdown and reduced global demand hindered the sector's recovery to pre-pandemic growth levels. Additionally, disruptions in international trade and supply chains, exacerbated by geopolitical tensions and the lingering effects of the COVID-19 pandemic, added to the operational challenges faced by manufacturers.

To counter these challenges, the Indian government introduced several policy reforms aimed at bolstering the sector.. The sector also accelerated the adoption of digital technologies, including artificial intelligence and automation, to improve supply chain resilience, optimize decision-making, and enhance operational efficiency. This shift towards digitalization, coupled with the government's Production Linked Incentive (PLI) scheme, encouraged domestic manufacturing and attracted foreign investments, further strengthening the sector's foundation.

Technological innovation played a significant role in transforming the manufacturing landscape, driving increased efficiency and positioning India as a competitive player on the global stage. Despite the challenges, the sector's ability to adapt and innovate ensured its continued resilience in 2024, laying the groundwork for sustainable growth and greater global competitiveness in the years ahead.

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.
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

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

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

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

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

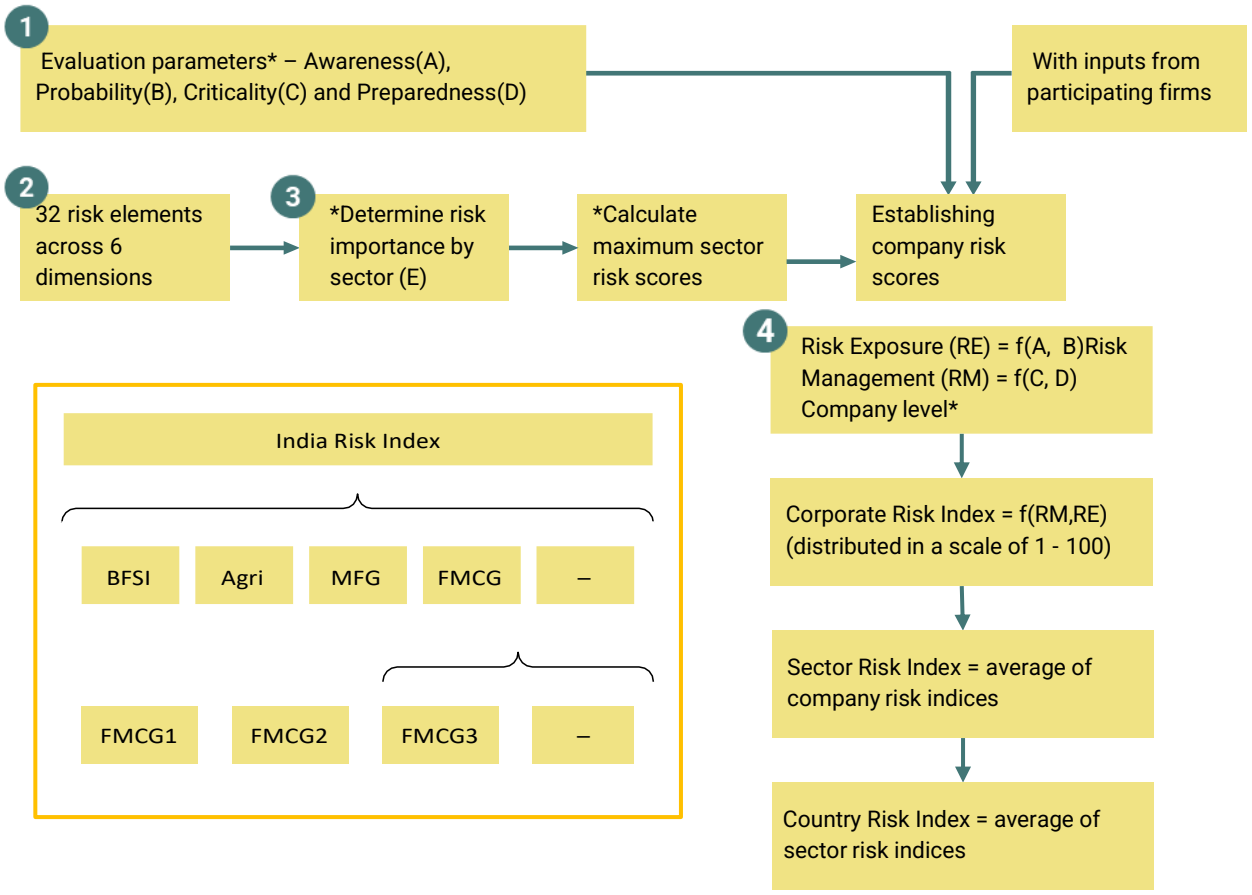


Figure 1: Risk Assessment Approach

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

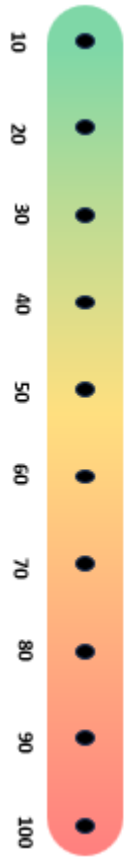
We have selected 20 sectors to understand the current stand of our country today in terms of risk. Risk for various sectors is measured on the risk exposure scale and risk management scale.

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.



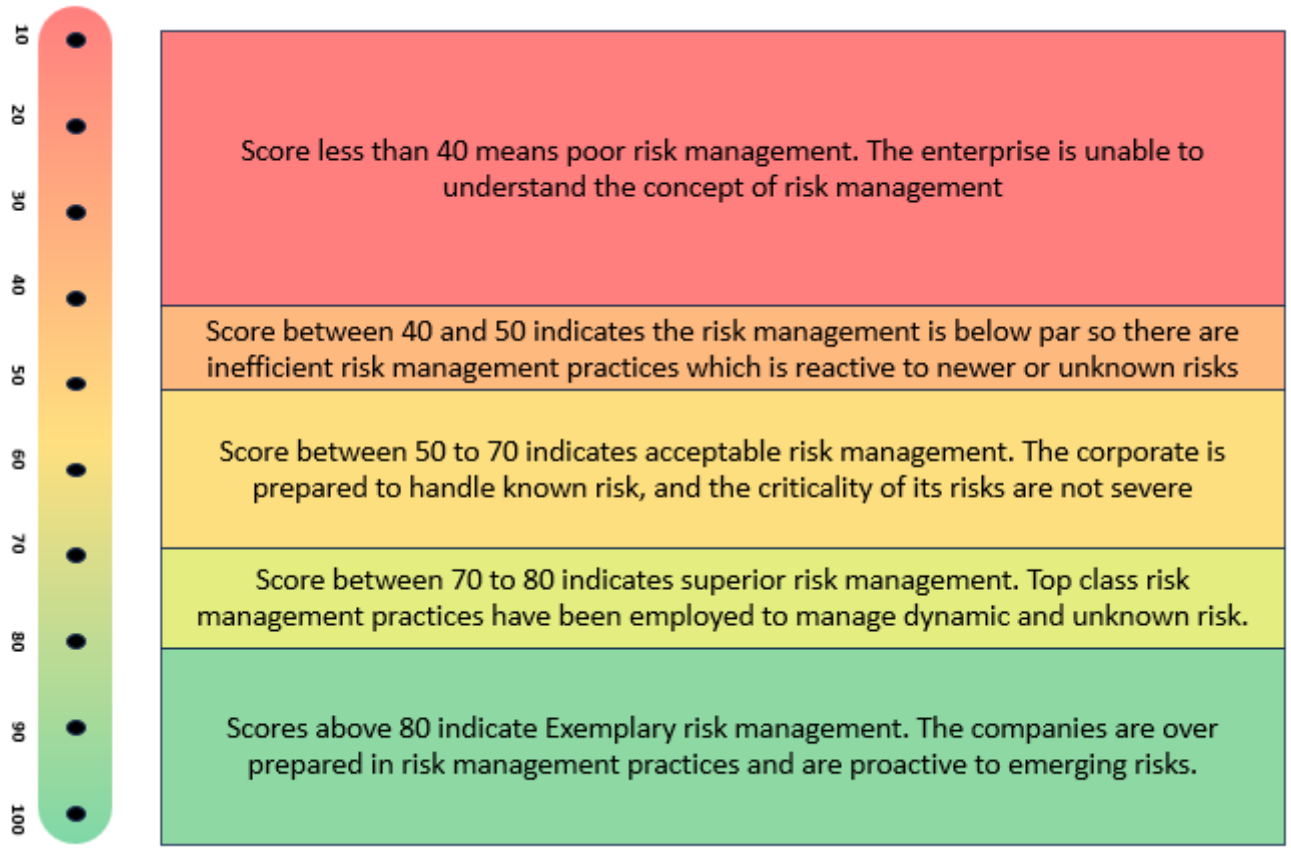
Score: If less than 30 means there is very low risk exposure, and the sector has minimal exposure to overall risk
Score between 30 to 50 indicates low risk exposure and its risk exposure is within acceptable or tolerable limits
Score between 50 to 60 indicates moderate exposure indicating corporate can balance the impact of overall risks up to a certain extent
Score between 60 to 80 indicates high risk exposure and its impact is very high in the industry in which the corporate operates
Score greater than 80 indicates very high-risk exposure. The corporate is unable to foresee risk incidents and probability of occurrence of these incidents may be extremely high

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.

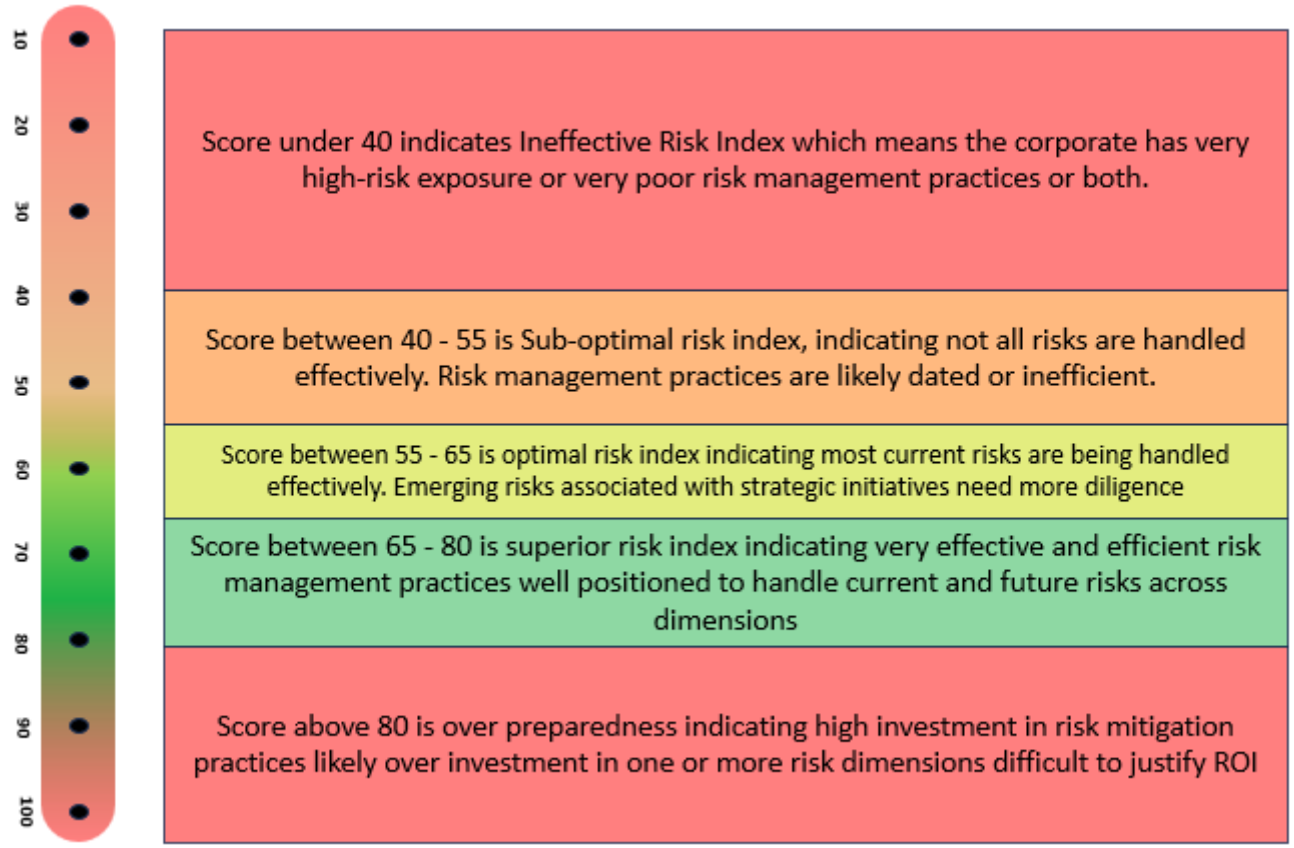
Let's look at the risk management scale.



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.

Manufacturing Sector Insights 2024

The manufacturing industry has remained strong in the face of economic shocks, with manufacturers prioritizing efficiency and cost reduction to maintain profitability. Most manufacturers have embraced automation and digital transformation as a way of improving productivity and minimizing dependence on human resources. The uptake of Industry 4.0 technologies such as IoT and analytics powered by artificial intelligence is making it possible for manufacturers to improve supply chain efficiency and production cycles. Increasing costs of inputs, especially raw materials and energy, have been a challenge, but companies have countered risks through strategic procurement and price adjustments. Export-oriented producers have enjoyed global demand, while locally focused companies have taken advantage of rising urbanization and infrastructure development.

Sustainability is now a focus area, with most manufacturers spending on green production methods and circular economy systems. Green manufacturing processes, such as energy-efficient equipment and waste management programs, are being embraced by companies. Environmental responsibility-promoting regulatory policies have also compelled businesses to meet tighter emission standards and use renewable power sources. ESG (Environmental, Social, and Governance) compliance is now a major consideration in making investment decisions as companies incorporate sustainability metrics into long-term strategies. Government incentives and policies favoring green manufacturing also have driven the further industry-wide adoption of sustainable practices.

In 2024, the implementation of the "China + 1" strategy by global firms has had a significant impact on India's manufacturing sector. This strategy, which encourages companies to diversify their supply chains beyond China, has increased both the risk exposure and the need for more robust risk management practices. As a result, many firms have been compelled to invest heavily in risk mitigation strategies to ensure greater stability and resilience. This shift is not only transforming India's manufacturing landscape but also positioning the country as a more prominent player in global supply chains.

The industry has seen a rise in capital spending, with companies investing in increasing production capacity and upgrading machinery. Greater automation and predictive maintenance through AI have reduced downtime and improved efficiency. Labor shortages and the requirement for skilled personnel continue to be major issues. To counter this, companies are emphasizing upskilling programs for employees and partnerships with educational institutions to create industry-specific skills. Though conventional manufacturing centers remain the strongholds, a trend towards decentralized production facilities can be seen, allowing companies to serve local demand more

effectively.

Geopolitical tensions, trade barriers, and logistics bottlenecks have disrupted supply chains in the industry. In response, businesses have diversified suppliers and raised inventory levels to buffer against risks. The drive towards self-sufficiency and supply chain localization has picked up speed, with numerous companies looking inward for domestic sources. Nearshoring initiatives have also been undertaken to minimize exposure to unstable global markets. Digital supply chain management technologies, such as blockchain-tracking systems, are utilized to increase transparency and robustness to disruption.

The post-pandemic era has witnessed changes in demand patterns at the consumer end, which are leading manufacturers to realign product offerings and modes of production. E-commerce growth has impacted packaging and logistics, with manufacturers increasingly investing in direct-to-consumer business models. Personalization and customization have also become increasingly popular, demanding manufacturing arrangements that allow for agility with the ability to process small batches economically. Moreover, data-enabled demand forecasting is assisting companies with optimal inventory sizes and production calendars. Although inflationary pressures have impacted pricing strategies, firms have used brand positioning and value-added products to sustain market share.

Government incentives and policies have been instrumental in determining the manufacturing scenario. Capital investment subsidies, tax incentives for technology upgradation, and local production incentives have spurred sectoral development. The initiative for infrastructure growth, such as new industrial corridors and smart manufacturing parks, has created a favorable climate for growth. International trade agreements and policy changes have also influenced export competitiveness, calling for nimble business strategies. In spite of difficulties, the industry keeps on changing, powered by innovation, sustainability, and digitalization, providing long-term growth and resilience.

Manufacturing Sector Risk Index 2024 Vs 2023

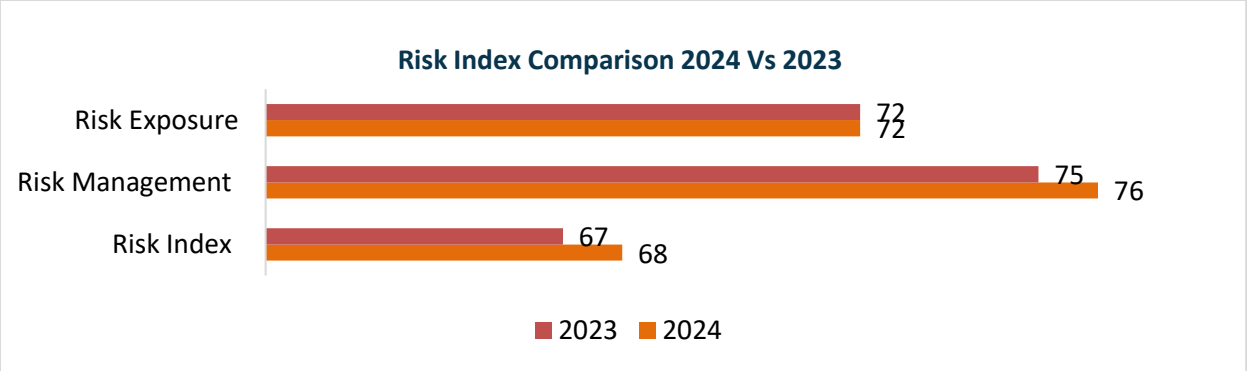


Figure 4: Detailed Comparative Analysis 2024 Vs. 2023

Manufacturing Sector Risk Index 2024 Vs 2023

The overall Risk Index for the sector increased from 67 to 68 in 2024 owing to an increase in risk management while risk exposure remained stable.

Manufacturing Sector Risk Exposure 2024 Vs 2023

Although risk exposure remained stable, reflecting ongoing challenges in the external environment, the sector's proactive approach to managing those risks through innovation and policy support led to a higher risk management score. This enhanced approach to risk management allowed the manufacturing sector to navigate uncertainties more effectively, ensuring business continuity and positioning the sector for long-term growth and competitiveness.

Manufacturing Sector Risk Management 2024 Vs 2023

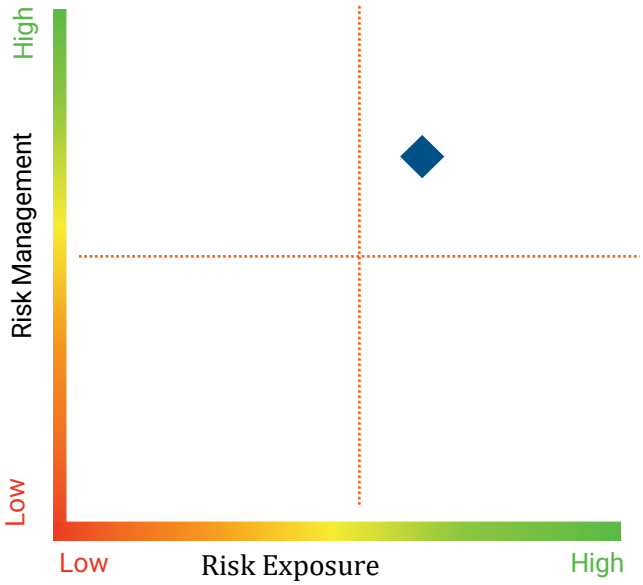
In 2024, manufacturers focused on strengthening their risk management frameworks, adopting digital technologies, and improving supply chain resilience through automation, artificial intelligence, and real-time monitoring. Additionally, government reforms and initiatives, such as the Production Linked Incentive (PLI) scheme, provided further stability by incentivizing domestic manufacturing and foreign investment. These efforts helped companies better anticipate and address potential disruptions, thus improving their overall risk management strategies.

Key Highlights

Risk Dimension Analysis: Market and Economy

Risk Exposure Score: 77

Risk Management Score: 77



Inflation

- Rising input costs, including raw materials and energy, have significantly impacted manufacturing margins. Companies have responded by optimizing procurement strategies, increasing efficiency, and passing costs to consumers through price adjustments to maintain profitability.
- Supply chain disruptions due to geopolitical tensions and logistical bottlenecks have heightened inflation risks. Manufacturers have mitigated these challenges by diversifying suppliers, increasing local sourcing, and adopting digital tools for improved supply chain visibility and cost management.
- Fluctuations in global demand and monetary policies impact inflation risks in manufacturing. Firms are leveraging dynamic pricing strategies, contract hedging, and financial risk management to navigate economic volatility and sustain competitive positioning in domestic and international markets.

Taxation Risk

- Frequent changes in tax policies, including corporate tax rates and indirect taxes like GST, create uncertainty for manufacturers. Companies must continuously adapt their financial planning and compliance strategies to mitigate potential cost escalations and legal risks.
- Tax incentives for capital investments, R&D, and sustainability initiatives vary across regions, influencing manufacturing expansion strategies. Businesses must align investment decisions with evolving tax structures to maximize benefits and minimize long-term tax burdens.
- Regulatory scrutiny and compliance requirements related to transfer pricing and tax audits pose risks for multinational manufacturers. Robust documentation, transparent financial reporting,

and legal expertise are essential to mitigate potential penalties and maintain operational stability.

Geopolitical Risks

- Trade restrictions, tariffs, and sanctions due to geopolitical tensions disrupt global supply chains. Manufacturers mitigate risks by diversifying supplier networks, investing in regional production hubs, and securing alternative sourcing strategies to ensure business continuity.
- Political instability in key markets affects demand, regulatory policies, and investment decisions. Companies adopt flexible operational models, scenario planning, and strategic partnerships to navigate uncertainties and maintain market presence despite shifting political landscapes.
- Conflicts and diplomatic tensions impact energy and commodity prices, increasing manufacturing costs. Firms hedge against price volatility, optimize inventory management, and explore local alternatives to reduce dependency on geopolitically sensitive regions.

Foreign Exchange Risk

- Currency fluctuations impact raw material import costs and export revenues, affecting profitability. Manufacturers hedge against forex volatility using financial instruments like forward contracts and currency swaps to stabilize cash flows and mitigate losses.
- Geopolitical events and economic policies influence exchange rates, creating uncertainties for multinational manufacturers. Diversifying sourcing locations and maintaining flexible pricing strategies help mitigate adverse currency movements and maintain competitive positioning.
- Foreign currency-denominated debt increases financial risk for manufacturers. Companies manage this by balancing local and foreign borrowings, optimizing debt structures, and adjusting interest rate exposures to minimize forex-related cost escalations.
- Sudden depreciation or appreciation of domestic currency affects global competitiveness. Manufacturers adopt dynamic pricing, negotiate supplier contracts in stable currencies, and optimize treasury management to protect margins from exchange rate fluctuations.

Regulatory Risk

- Changing environmental regulations require manufacturers to invest in sustainable practices and compliance measures. Failure to meet emission norms, waste management guidelines, or energy efficiency standards can lead to legal penalties and operational disruptions.
- Evolving labor laws, including workplace safety, wages, and employee benefits, pose challenges for manufacturers. Companies must adapt HR policies and invest in compliance frameworks to mitigate risks related to labor disputes, fines, and reputational damage.
- Trade policies, import-export restrictions, and tariffs affect supply chain strategies. Manufacturers must navigate shifting regulations, ensure proper documentation, and optimize sourcing to minimize financial and operational risks.
- Intellectual property (IP) regulations impact innovation and competition. Firms must secure patents, protect proprietary technology, and comply with regional IP laws to prevent legal

conflicts and safeguard their market position.

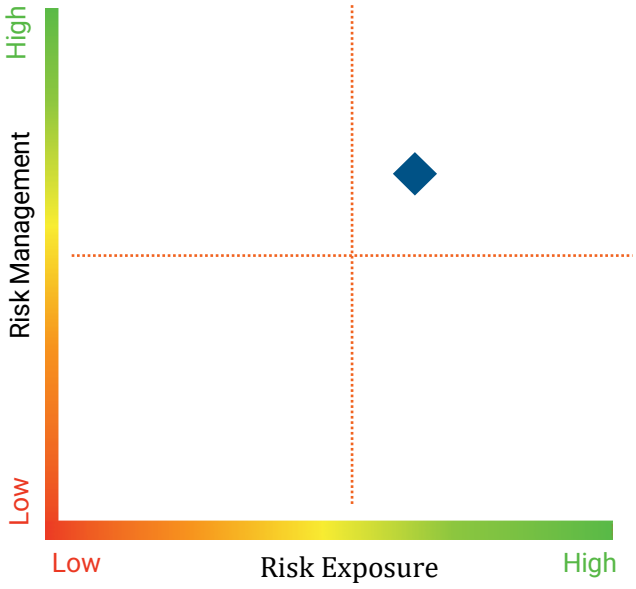
Competitive Risk

- Intense market competition pressures manufacturers to continuously innovate and optimize costs. Companies invest in R&D, automation, and product differentiation to sustain competitive advantages and avoid margin erosion from price wars and commoditization.
- Globalization exposes manufacturers to competition from low-cost regions, impacting pricing power. Firms enhance operational efficiency, localize supply chains, and adopt value-added services to maintain market share against international and regional competitors.
- Rapid technological advancements disrupt traditional manufacturing models. Businesses must embrace digital transformation, smart manufacturing, and AI-driven analytics to stay ahead of industry trends and avoid obsolescence.
- Evolving consumer preferences and new market entrants increase competition. Manufacturers leverage brand positioning, strategic partnerships, and customer-centric innovations to differentiate offerings and retain customer loyalty in dynamic market environments.

Risk Dimension Analysis: Technology

Risk Exposure Score: 71

Risk Management Score: 74



Innovation Risk / Obsolete Technology

- Rapid technological advancements create uncertainty in manufacturing, as outdated processes can lead to obsolescence. Companies invest in continuous R&D, agile production methods, and emerging technologies to stay competitive and mitigate innovation risks.

- Adoption resistance from employees and stakeholders can delay innovation efforts. Companies invest in change management, training programs, and cross-functional collaboration to ensure smooth integration of new technologies and processes.

Intellectual Property Risk

- Patent infringements and counterfeiting expose manufacturers to financial losses and legal disputes. Companies strengthen intellectual property protections by securing patents, trademarks, and copyrights while actively monitoring for violations.
- Unauthorized use of proprietary technology by competitors or suppliers poses a competitive risk. Firms implement strict confidentiality agreements, secure supply chain partnerships, and use legal frameworks to protect trade secrets.
- Complex and evolving international IP laws create challenges in global manufacturing operations. Businesses engage legal experts, register patents across key markets, and ensure compliance with regional regulations to safeguard intellectual assets.
- Cyber threats targeting proprietary designs and innovations increase the risk of IP theft. Manufacturers enhance cybersecurity, encrypt sensitive data, and implement access controls to prevent breaches and protect valuable intellectual property.

Disruptive Technology

- Emerging technologies like AI, IoT, and automation disrupt traditional manufacturing processes, requiring continuous adaptation. Companies invest in digital transformation, upskilling employees, and integrating smart manufacturing to remain competitive.

- 3D printing and advanced materials innovation challenge conventional production methods. Manufacturers adopt additive manufacturing, explore lightweight composites, and enhance R&D efforts to leverage new capabilities and reduce production costs.
- The rise of robotics and autonomous systems reduces dependency on manual labor but creates workforce displacement risks. Firms implement reskilling programs, hybrid automation models, and human-machine collaboration to balance efficiency and employment needs.
- Blockchain and decentralized manufacturing technologies improve supply chain transparency but require significant investment. Companies assess feasibility, partner with tech firms, and develop phased adoption strategies to integrate these innovations without major disruptions.

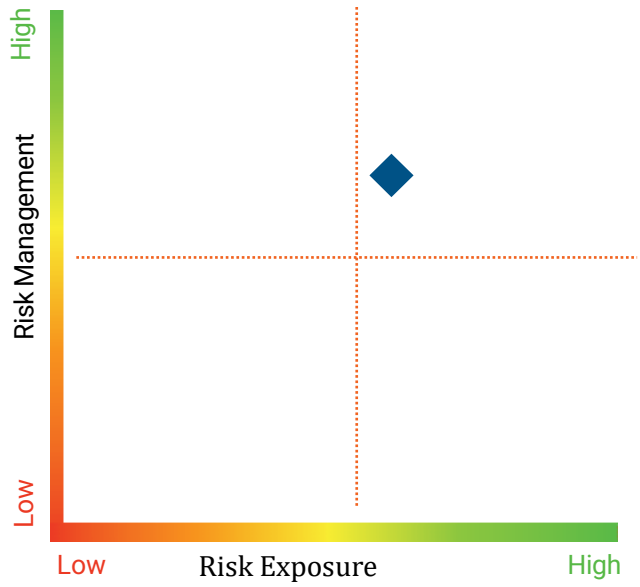
Data Compromises

- Cyberattacks targeting manufacturing systems can lead to data breaches, disrupting operations and exposing sensitive business information. Companies implement advanced cybersecurity protocols, encryption, and real-time monitoring to safeguard critical data.
- Unauthorized access to intellectual property and trade secrets poses a competitive risk. Manufacturers enforce strict access controls, deploy multi-factor authentication, and use secure cloud storage to prevent data leaks.
- Supply chain vulnerabilities increase the risk of data compromises through third-party vendors. Firms conduct regular security audits, establish vendor compliance standards, and implement blockchain-based tracking to ensure data integrity.
- Regulatory non-compliance due to data breaches can result in legal penalties and reputational damage. Companies align with global data protection laws, such as GDPR, and develop incident response plans to minimize financial and operational impact.

Risk Dimension Analysis: Operational and Physical

Risk Exposure Score: 74

Risk Management Score: 78



Critical Infrastructure Failure / Machine Breakdown

- Disruptions in power supply, water availability, and transportation networks significantly impact manufacturing operations. Companies invest in backup systems, alternative energy sources, and resilient logistics planning to mitigate risks and ensure continuity.

- Aging infrastructure and inadequate industrial zones in certain regions hinder manufacturing efficiency. Firms collaborate with governments, leverage public-private partnerships, and advocate for policy reforms to improve critical infrastructure and support long-term growth.
- Dependence on digital connectivity for automation and smart manufacturing makes reliable internet and communication networks essential. Manufacturers invest in redundant systems, cloud-based solutions, and secure IoT integrations to safeguard critical operations from connectivity failures.

Business Continuity / Sustainability

- Diversified supply chains and localized production enhance business continuity and sustainability. Manufacturers invest in regional sourcing, resilient logistics, and digital monitoring to mitigate risks from global disruptions and ensure long-term operational stability.
- Adopting renewable energy and energy-efficient technologies strengthens both continuity and sustainability. Companies integrate solar, wind, and smart grid systems to reduce carbon footprints while ensuring uninterrupted power supply for critical operations.
- Workforce resilience and skill development are essential for sustainable growth. Manufacturers invest in employee training, automation, and remote operational capabilities to maintain productivity during disruptions and adapt to evolving industry demands.
- Strong financial planning and ESG (Environmental, Social, and Governance) compliance drive sustainable business continuity. Firms optimize cash flow, align with regulatory standards, and implement ethical sourcing practices to maintain long-term viability and stakeholder trust.

Supply Chain Risk

- Disruptions from geopolitical tensions, trade restrictions, and natural disasters impact supply chain stability. Manufacturers mitigate risks by diversifying suppliers, increasing local sourcing, and implementing digital tracking systems for real-time visibility.
- Dependence on single-source suppliers creates vulnerabilities in procurement. Companies adopt multi-supplier strategies, negotiate flexible contracts, and maintain strategic inventory reserves to reduce the impact of unexpected shortages.
- Logistics bottlenecks, including port congestion and transportation delays, affect timely production and delivery. Manufacturers optimize warehouse locations, invest in automation, and leverage predictive analytics to enhance supply chain efficiency.
- Cyber threats targeting supply chain networks pose operational risks. Firms implement cybersecurity measures, blockchain-based tracking, and secure data-sharing protocols to protect supply chain integrity and prevent disruptions.

Commodity Price Risk - Volatility in prices of raw materials

- Volatility in raw material prices, such as metals, chemicals, and energy, affects manufacturing costs. Companies hedge against price fluctuations using futures contracts, long-term supplier agreements, and diversified sourcing strategies to stabilize expenses.
- Global economic conditions and geopolitical events influence commodity prices, impacting production budgets. Manufacturers monitor market trends, adjust procurement strategies, and optimize inventory management to mitigate financial risks.
- Currency fluctuations add another layer of commodity price risk, especially for imported materials. Firms implement forex hedging, negotiate currency-adjusted contracts, and explore local alternatives to reduce exposure to exchange rate variations.
- Supply-demand imbalances drive unpredictable price swings in key inputs. Manufacturers adopt flexible pricing models, invest in resource-efficient technologies, and explore sustainable material substitutes to manage cost pressures effectively.

Portfolio Risk

- Market fluctuations and economic downturns impact the valuation of manufacturing companies' investment portfolios. Firms diversify assets across industries, geographies, and financial instruments to minimize exposure to sector-specific risks and economic instability.
- Shifts in consumer demand and technological disruptions can affect the profitability of certain manufacturing segments. Companies continuously reassess their product mix, invest in innovation, and align business strategies with emerging market trends to reduce portfolio risk.
- Regulatory changes and geopolitical uncertainties influence investment decisions in manufacturing. Firms monitor policy developments, adapt expansion strategies, and engage in risk-adjusted capital allocation to protect long-term financial stability.

Environmental Hazard Risk

- Extreme weather events, such as floods, hurricanes, and wildfires, disrupt manufacturing operations and supply chains. Companies invest in climate-resilient infrastructure, emergency response plans, and geographic diversification to mitigate risks.
- Regulatory pressures on emissions, waste disposal, and resource usage require compliance with evolving environmental laws. Manufacturers adopt cleaner production technologies, energy-efficient systems, and sustainable waste management to reduce legal and operational risks.
- Resource scarcity, including water shortages and depletion of raw materials, threatens production continuity. Firms implement recycling programs, alternative material sourcing, and process optimization to ensure long-term resource availability.
- Environmental pollution and industrial accidents pose reputational and financial risks. Companies enhance monitoring systems, adhere to stringent safety protocols, and invest in sustainable manufacturing practices to prevent liabilities and maintain public trust.

Workplace Accident

- Inadequate safety measures and non-compliance with workplace regulations increase the risk of accidents in manufacturing facilities. Companies implement strict safety protocols, conduct regular audits, and invest in protective equipment to minimize hazards.
- Machinery-related injuries remain a major concern in manufacturing. Firms enhance safety through automation, real-time monitoring systems, and employee training programs to reduce operational risks and improve workplace conditions.
- Hazardous material handling poses risks of chemical exposure and fires. Manufacturers enforce stringent handling procedures, provide specialized safety gear, and establish emergency response plans to mitigate health and environmental dangers.
- Fatigue and human errors contribute to workplace accidents. Companies optimize shift schedules, promote ergonomic work environments, and implement AI-driven monitoring tools to enhance worker well-being and reduce accident rates.

Human Resource

- Skilled labor shortages in manufacturing impact productivity and innovation. Companies invest in workforce training, apprenticeship programs, and collaborations with educational institutions to develop a sustainable talent pipeline.
- Employee retention is a challenge due to competitive job markets and evolving career expectations. Manufacturers enhance workplace benefits, offer career growth opportunities, and foster a positive work culture to retain skilled employees.
- Automation and AI integration are reshaping workforce dynamics, requiring continuous skill adaptation. Firms implement reskilling initiatives, cross-functional training, and change management strategies to ensure smooth technological transitions.
- Labor laws and workplace regulations demand compliance with fair wages, safety standards,

and working conditions. Manufacturers establish strong HR policies, conduct regular audits, and engage in proactive labor relations to mitigate risks and legal liabilities.

Financial Risk

- Market fluctuations, interest rate changes, and economic downturns impact manufacturing revenue and profitability. Companies manage financial risk through cost optimization, dynamic pricing strategies, and diversified revenue streams to ensure stability.
- Liquidity constraints and cash flow volatility pose challenges for manufacturers, especially during disruptions. Firms maintain strong financial reserves, secure flexible credit lines, and optimize working capital management to sustain operations.
- Foreign exchange fluctuations affect raw material costs and export revenues. Manufacturers hedge currency risks using financial instruments like forward contracts, diversify sourcing, and adjust pricing strategies to mitigate losses.
- Debt financing risks arise from rising borrowing costs and leverage ratios. Companies optimize debt-equity structures, negotiate favorable loan terms, and focus on long-term capital planning to maintain financial health and creditworthiness.

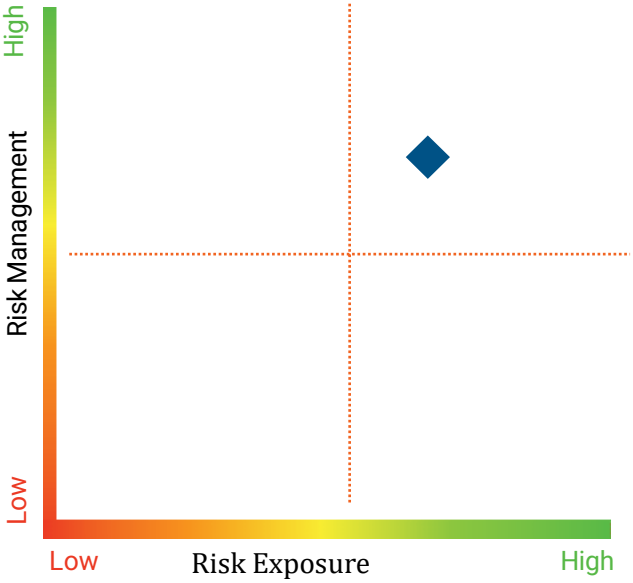
Breaches of law (local/ international)

- Non-compliance with labor laws, safety regulations, and environmental standards can result in legal penalties and reputational damage. Manufacturers implement strict compliance programs, regular audits, and employee training to mitigate risks.
- Intellectual property violations, including patent infringements and counterfeit goods, pose financial and competitive risks. Companies strengthen legal protections, enforce IP rights, and adopt cybersecurity measures to safeguard proprietary technologies.
- Tax evasion or misreporting can lead to heavy fines and operational disruptions. Manufacturers ensure transparent financial reporting, adhere to tax regulations, and engage legal experts to maintain compliance and avoid legal breaches.
- Antitrust and trade law violations, such as price-fixing or unfair competition, expose firms to lawsuits and regulatory actions. Businesses implement ethical business practices, legal oversight, and fair market strategies to avoid legal complications.

Risk Dimension Analysis: Crime and Security

Risk Exposure Score: 64

Risk Management Score: 70



to

Cyber-crimes

- Phishing and social engineering attacks target employees to gain unauthorized access critical systems. Firms conduct cybersecurity awareness training, enforce multi-factor authentication, and monitor network activity to prevent breaches.

- IoT vulnerabilities in smart factories expose connected devices to hacking risks. Companies deploy secure firmware updates, implement network segmentation, and adopt AI-driven threat detection to safeguard industrial automation systems.

Counterfeiting

- Counterfeit products damage brand reputation and reduce market trust. Manufacturers implement anti-counterfeiting technologies like holograms, QR codes, and blockchain-based authentication to ensure product authenticity.
- Fake components in the supply chain compromise product quality and safety. Companies establish strict supplier verification processes, conduct regular audits, and use advanced tracking systems to prevent counterfeit infiltration.
- Intellectual property theft fuels counterfeiting, leading to revenue losses. Firms register patents and trademarks globally, enforce legal actions against infringers, and collaborate with authorities to dismantle counterfeit networks.
- E-commerce platforms facilitate counterfeit product distribution. Manufacturers engage in digital brand protection, monitor online marketplaces, and use AI-driven tracking to identify and remove fraudulent listings.

Threat to Women Security

- Workplace harassment and discrimination pose significant risks to women's safety in manufacturing. Companies implement strict anti-harassment policies, conduct awareness training, and establish anonymous reporting mechanisms to create a safer work environment.
- Lack of proper infrastructure, such as inadequate lighting, unsafe transportation, and absence

of separate facilities, increases risks for women employees. Manufacturers invest in secure workplaces, provide safe commute options, and improve sanitation facilities to ensure safety.

- Gender bias in leadership and decision-making can discourage women from career growth. Firms promote diversity, enforce equal opportunity policies, and establish mentorship programs to empower women in the industry.
- Night shifts and remote work sites pose additional security challenges. Companies deploy security personnel, use surveillance technology, and create emergency response protocols to enhance women's safety in manufacturing settings.

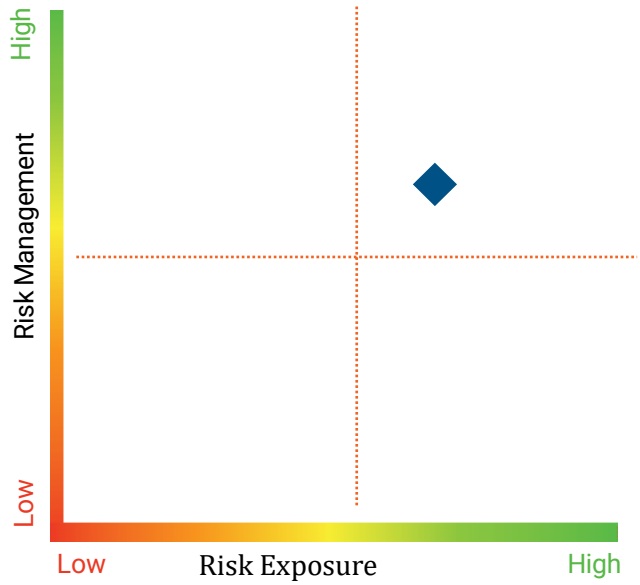
Terrorism

- Terrorist attacks targeting manufacturing hubs, industrial plants, or supply chains can disrupt operations and cause significant financial losses. Companies enhance security measures, conduct risk assessments, and collaborate with law enforcement to mitigate threats.
- Cyberterrorism poses a growing risk to manufacturing, with hackers targeting critical infrastructure and industrial control systems. Firms invest in cybersecurity defenses, conduct regular penetration testing, and implement AI-driven threat detection to prevent cyberattacks.
- Disruptions to transportation networks due to terrorist activities impact the timely delivery of raw materials and finished goods. Manufacturers develop contingency plans, diversify logistics routes, and use real-time tracking systems to ensure supply chain resilience.
- Bioterrorism and chemical threats pose risks to worker safety and production processes. Companies implement strict hazardous material handling protocols, train employees in emergency response procedures, and establish secure storage facilities to prevent attacks.

Risk Dimension Analysis: Natural Hazard and Event

Risk Exposure Score: 65

Risk Management Score: 75



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

- Extreme weather conditions, such as heatwaves and heavy snowfall, affect workforce availability and transportation. Manufacturers adopt flexible work policies, ensure climate-resilient logistics, and optimize energy consumption to maintain operations.

- Power outages and water supply disruptions caused by natural disasters affect manufacturing efficiency. Companies integrate renewable energy solutions, install backup generators, and implement water recycling systems to enhance resilience.

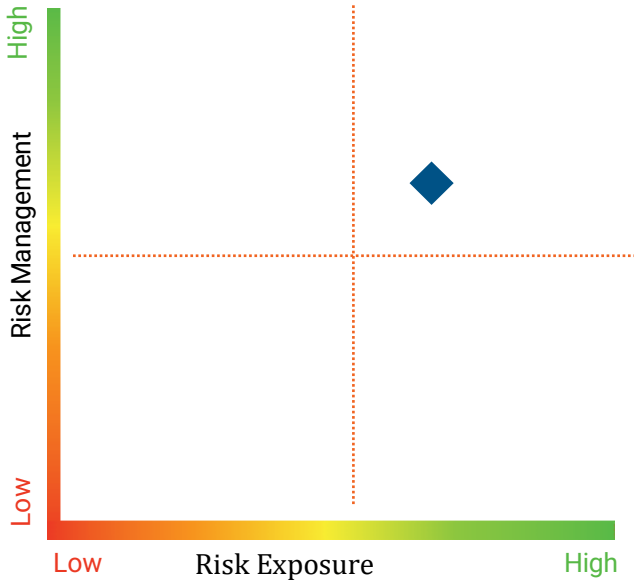
Pandemic and other Global Epidemic Diseases

- Pandemics disrupt manufacturing operations by causing labor shortages, factory closures, and supply chain breakdowns. Companies implement remote monitoring, automation, and workforce safety measures to ensure business continuity.
- Health crises lead to volatile demand, with sudden spikes for essential goods and declines in non-essential products. Manufacturers adopt flexible production lines, optimize inventory management, and enhance demand forecasting to adapt to changing market needs.
- Global trade restrictions and lockdowns impact raw material sourcing and logistics. Firms diversify suppliers, strengthen regional production networks, and invest in digital supply chain solutions to reduce dependency on single markets.
- Workplace safety becomes a priority, requiring strict hygiene protocols and employee health monitoring. Companies enforce social distancing, provide PPE, and integrate smart technology to minimize virus transmission and maintain productivity.

Risk Dimension Analysis: Strategic Risk

Risk Exposure Score: 69

Risk Management Score: 76



Resource scarcity / Misutilization / Overall Utilization

- Water shortages impact industrial processes, especially in sectors requiring high water usage. Manufacturers adopt water-efficient technologies, implement recycling systems, and collaborate with governments to secure sustainable water access.

- Energy scarcity and rising costs affect manufacturing efficiency and profitability. Firms integrate renewable energy sources, enhance energy-efficient production techniques, and explore alternative fuels to reduce dependency on conventional power grids.

Public Sentiments

- Negative public sentiment toward manufacturing practices, such as pollution and unethical labor conditions, can damage brand reputation and reduce consumer trust. Companies adopt sustainable practices, improve transparency, and engage in corporate social responsibility initiatives to maintain public confidence.
- Concerns over environmental impact drive demand for eco-friendly products. Manufacturers invest in green technologies, reduce carbon footprints, and highlight sustainability efforts in marketing to align with consumer expectations.
- Social media amplifies public scrutiny, making companies vulnerable to rapid reputation shifts. Firms actively monitor digital platforms, engage in crisis management strategies, and maintain open communication to address concerns proactively.
- Ethical sourcing and fair labor practices influence consumer perceptions. Manufacturers ensure compliance with global standards, promote fair wages, and conduct regular audits to demonstrate commitment to responsible business operations.

Delay in Execution of Projects

- Project execution delays in manufacturing arise due to supply chain disruptions, labor shortages, or regulatory approvals. Companies implement proactive planning, supplier diversification, and

automation to ensure timely project completion.

- Unforeseen technical challenges, design modifications, or inadequate resource allocation slow down execution. Manufacturers conduct thorough feasibility studies, invest in skilled project management, and adopt agile methodologies to minimize delays.
- Dependence on external contractors and vendors can lead to timeline overruns. Firms establish clear contractual agreements, enforce performance benchmarks, and use real-time tracking systems to monitor project progress efficiently.
- Regulatory compliance, environmental clearances, and permit delays impact manufacturing expansion projects. Companies engage with policymakers early, maintain legal preparedness, and streamline approval processes to mitigate bureaucratic roadblocks.

Increased Number of Recalls and Quality Audits

- Frequent audits and product recalls disrupt manufacturing operations, increase compliance costs, and affect brand reputation. Companies strengthen quality control systems, implement real-time monitoring, and enhance traceability to minimize errors.
- Regulatory bodies impose stricter audits due to safety, environmental, and labor concerns. Manufacturers invest in compliance management, conduct internal audits, and adopt digital documentation to ensure seamless regulatory adherence.
- Product defects and recalls lead to financial losses and legal liabilities. Firms implement stringent testing protocols, leverage AI-driven defect detection, and establish proactive recall management strategies to reduce risks.
- Consumer awareness and legal frameworks demand higher product accountability. Companies improve supplier quality assurance, enhance risk assessment models, and engage in transparent communication to build public trust and regulatory confidence.

Failed / Hostile Mergers & Acquisitions

- Failed mergers and acquisitions (M&As) in manufacturing result in financial losses, operational disruptions, and weakened market positioning. Companies conduct thorough due diligence, align strategic objectives, and integrate risk management to improve success rates.
- Cultural and organizational misalignment between merging entities leads to workforce resistance and inefficiencies. Firms invest in change management, leadership alignment, and structured integration plans to ensure smooth transitions.
- Regulatory challenges, antitrust laws, and government interventions delay or block M&As. Manufacturers engage legal experts, conduct compliance assessments, and proactively address policy concerns to navigate regulatory hurdles.
- Overestimated synergies and integration complexities lead to post-merger failures. Companies set realistic expectations, prioritize phased integration, and continuously monitor performance metrics to maximize deal value and operational efficiency.

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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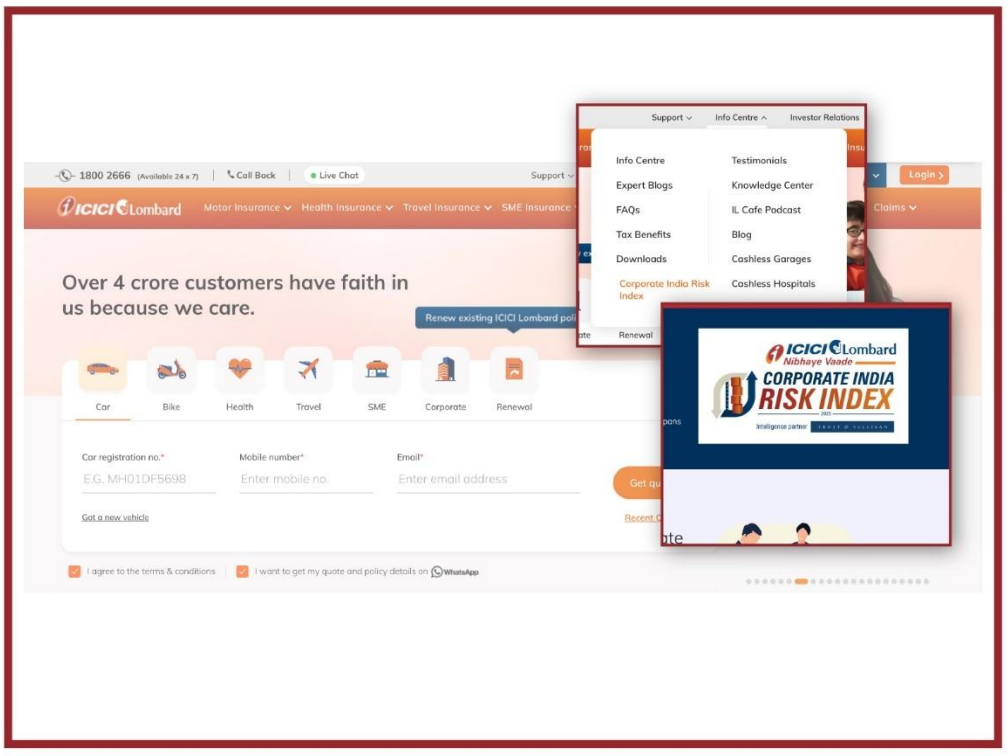

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