



# CORPORATE INDIA RISK INDEX

2023

Intelligence partner

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## SECTOR REPORT 2023 BIOTECH & LIFESCIENCES



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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

India's biotech sector is on a promising trajectory, reaching a revenue of \$80.12 billion in 2023, a 14% jump from the previous year. While risk exposure remains a concern, the decrease in the risk index suggests progress in mitigation strategies.

Government initiatives like FDI allowances and tax breaks have demonstrably fueled growth, with a cautiously optimistic view on risk management reflected in the marginal improvement of the risk management score. The visionary Biotechnology Development Strategy emphasizes crucial areas like regulatory clarity, data-sharing frameworks, and advanced diagnostics for pathogen control.

Looking ahead, the sector's true potential hinges on embracing sustainability and harnessing the power of artificial intelligence (AI). Sustainable practices can optimize resource use and minimize environmental impact, while AI can revolutionize drug discovery, protein engineering, and personalized medicine.

Effectively managing risks alongside these advancements is paramount for long-term success. This includes navigating intellectual property concerns, ensuring ethical conduct in AI development, and fostering a skilled workforce equipped for the future of biotech.



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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.



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.

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- **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

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. Such 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 COVID-19 pandemic and similar another global epidemic.





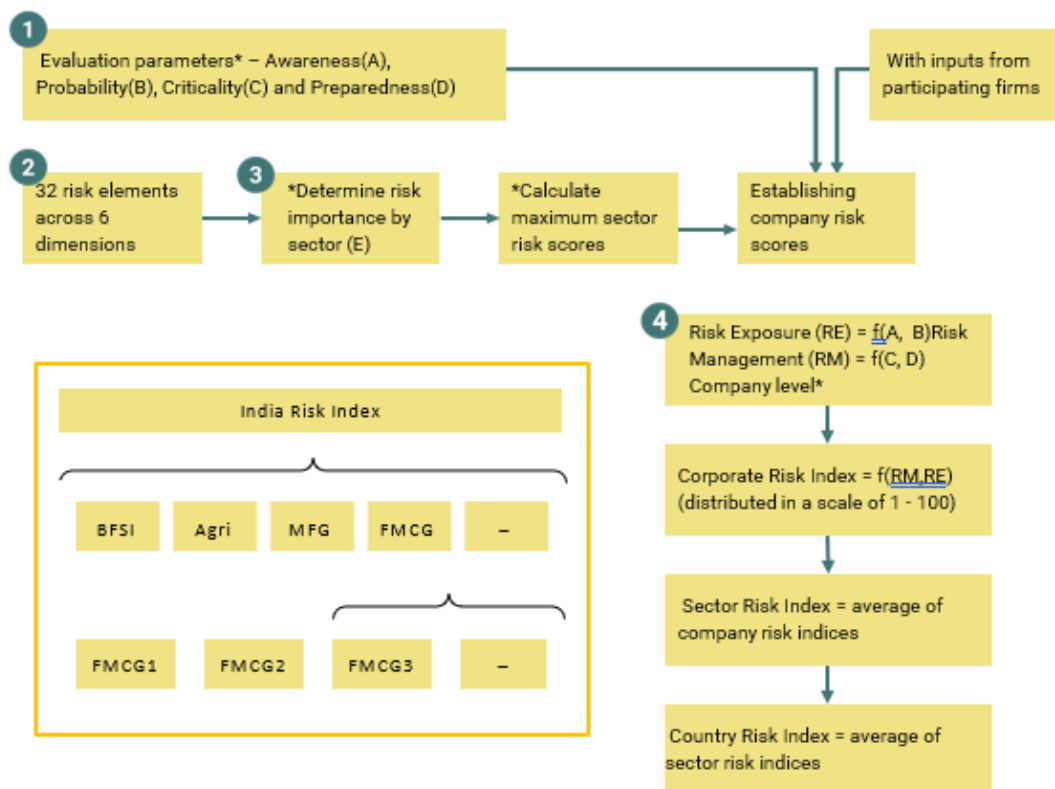
## Strategic Risk

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Strategic risk is the risk that failed business decisions may pose to 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

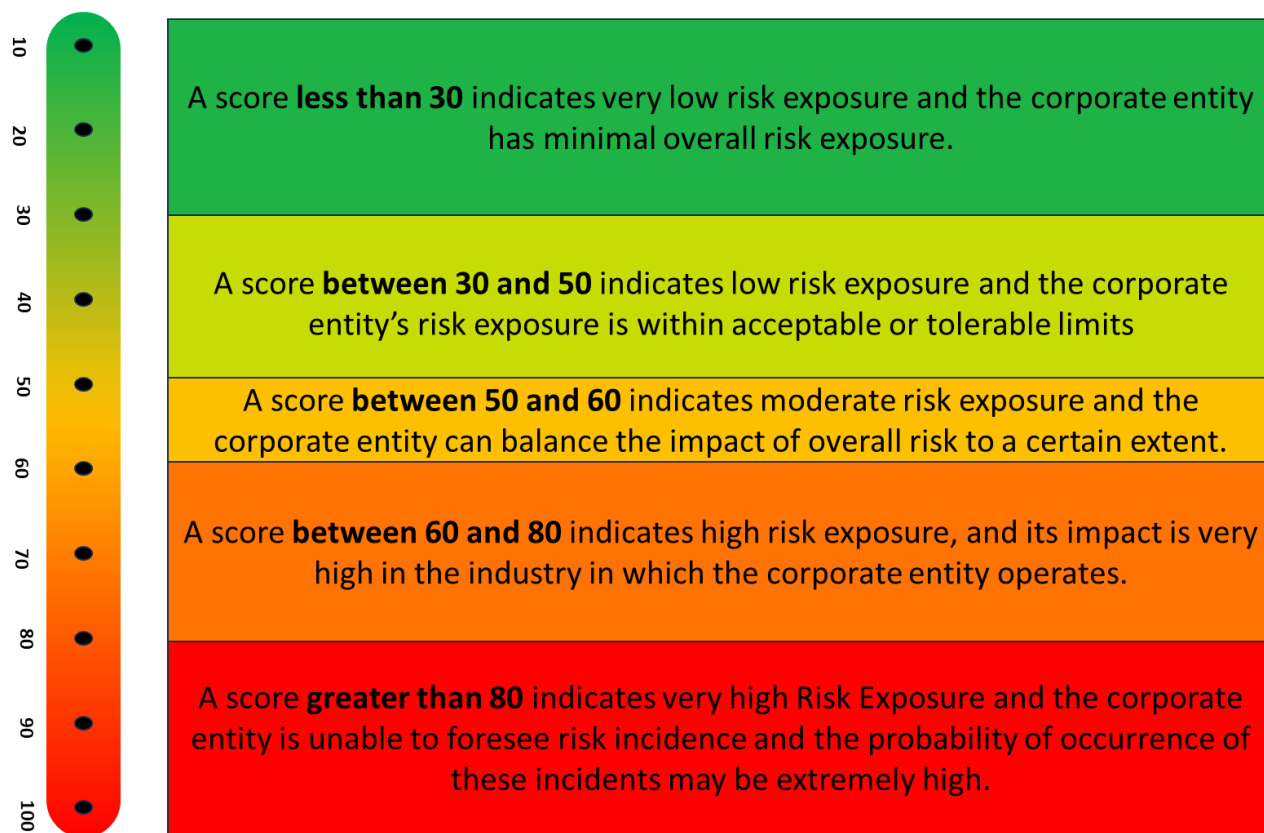
We have selected 20 sectors to understand the current stand of our country today in terms of risk. Risk for various sectors is measured on the risk exposure scale and risk management scale.

## 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.

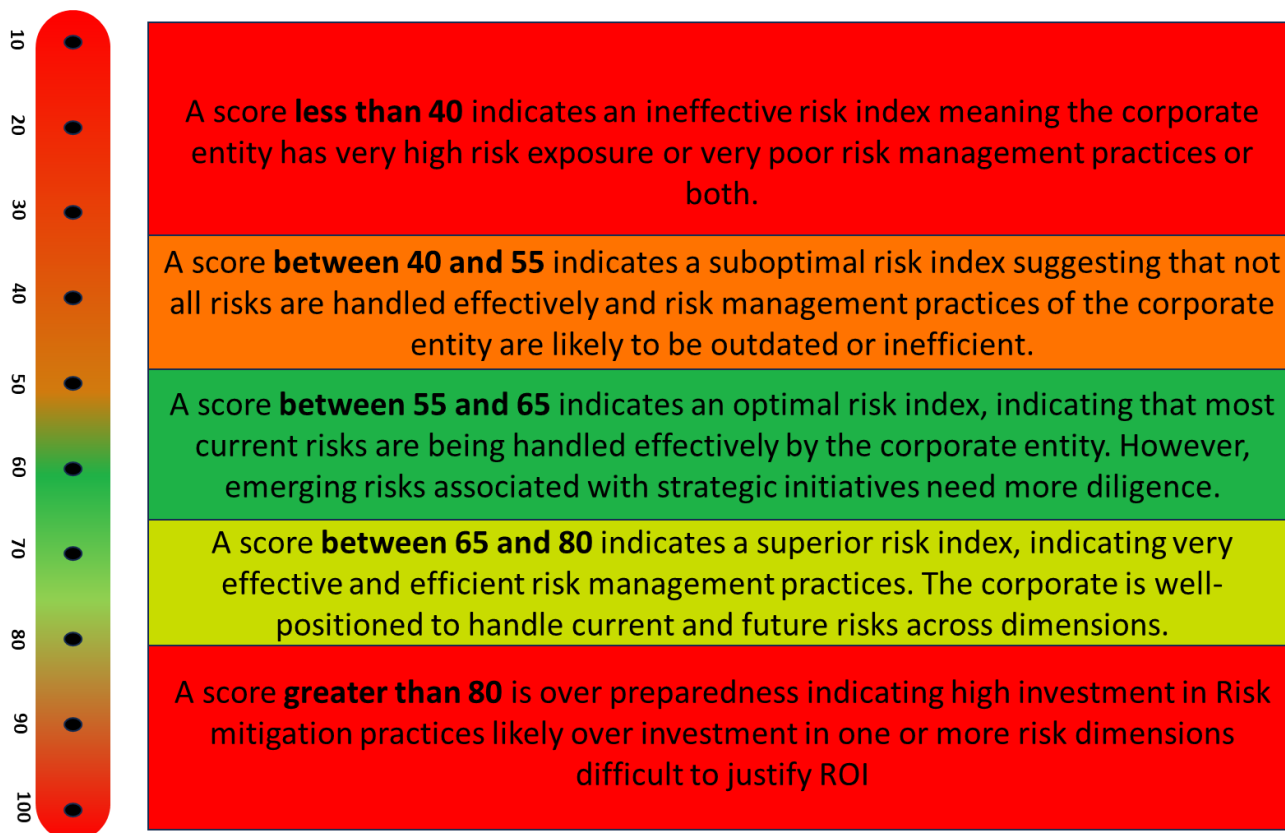
Let's look at the risk management scale.



### 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 - emerging superpower with optimized corporate risk handling

In 2023, India witnessed a number of developments in various sectors, reflecting changes in consumer preferences, technological advances and regulatory trends. These developments shaped the industry and affected strategic decisions among industry players.

Electric vehicles (EVs) gained traction across sectors, driving investments in infrastructure and incentivized by government policies promoting electric mobility. The Automotive industry witnessed a surge in demand for EVs, while Logistics & Transportation embraced electric fleets to reduce carbon emissions and operational costs. Digital transformation accelerated across sectors, fueled by the COVID-19 pandemic. Telemedicine, online banking, and remote work solutions proliferated in Healthcare, BFSI, and IT/ITES sectors, enhancing operational efficiency and customer experiences.

In 2023, sustainability took center stage as sectors across India embraced eco-friendly practices. The Energy sector witnessed a shift towards renewable energy sources, with significant investments in solar and wind power. Industries like Manufacturing and FMCG prioritized energy efficiency and waste reduction initiatives. Hospitality and Real Estate sectors focused on green building practices, while Agriculture adopted precision farming techniques to conserve resources.

AI integration surged in 2023, revolutionizing business operations across sectors. Manufacturing companies leveraged AI for predictive maintenance and quality control, enhancing efficiency and reducing costs. Healthcare adopted AI-powered diagnostics and personalized treatment plans, improving patient care. Financial institutions utilized AI for fraud detection and risk assessment, bolstering security and compliance.

Social media emerged as a powerful tool for brand building and customer engagement in 2023. FMCG and Retail sectors capitalized on social media platforms to launch targeted marketing campaigns and drive product sales. Hospitality and Tourism industries utilized social media influencers to enhance brand visibility and customer loyalty. By leveraging social media analytics and customer feedback, companies across sectors tailored their strategies to effectively connect with their target audience and build brand reputation.

The "Make in India" initiative drove significant changes in supply chain operations in 2023. Sectors like Automotive, Manufacturing, and Pharmaceuticals emphasized local sourcing to reduce dependency on imports. Companies diversified their supplier base and optimized logistics networks to mitigate supply chain risks. This strategic shift towards domestic production enhanced resilience and competitiveness across industries.

Diversity, Equity, and Inclusion (DE&I) initiatives gained momentum in 2023, fostering inclusive workplaces across sectors. Companies in BFSI and IT/ITES led the way with diversity training programs and gender-neutral policies. Healthcare organizations focused on addressing healthcare disparities among marginalized communities. Manufacturing and Retail sectors prioritized inclusive hiring practices to tap into diverse talent pools, driving innovation and employee engagement.

Leadership risks emerged as a critical concern in 2023, prompting sectors to reassess their leadership strategies. Companies in BFSI and Technology faced challenges in adapting to rapid technological advancements and changing market dynamics. Healthcare organizations navigated leadership transitions amidst the COVID-19 pandemic, emphasizing the need for agile and resilient leadership.

Strategic investments in leadership development and succession planning became imperative to mitigate leadership risks effectively.

Disruptive technologies like artificial intelligence, blockchain, 5G, and IoT reshaped traditional business models, offering new avenues for innovation and growth in sectors such as Telecom & Communication, Biotech & Life Sciences, and New Age Industries.

The scenario of the Indian economy in 2023 had a myriad of risks and opportunities in various sectors. Cybersecurity emerged as a pervasive risk, affecting industries from banking and finance to healthcare and IT/ITES. With more than 400 million cyber threats detected in nearly 8.5 million locations by 2023, organizations prioritized strong cybersecurity measures. Advanced threat detection systems, encryption protocols and employee training programs were implemented locally to enhance cyber resilience and protect sensitive data.

Another common risk was supply chain disruption, exacerbated by factors such as geopolitical pressures, natural disasters, and semiconductor chip shortages. To mitigate these risks, companies diversified their supplier base, invested in inventory management systems, and adopted agile supply chain practices to enhance resilience and flexibility.

Regulatory uncertainty was rife in industries such as Pharma, Energy, Telecommunications, which required active engagement with regulators. Furthermore, environmental risks emphasized the importance of sustainability and green technologies, renewable energy and waste management practices to reduce environmental impact around us and compliance with legal standards.

Despite the challenges posed by common risks, several sectors emerged as resilient performers in 2023, whose efforts helped us understand the situation in 2023 better. Noteworthy efforts included the "National COVID-19 Vaccination Drive" in healthcare, "Electric Vehicle Adoption Mission" in automotive, and "Green Freight Movement" in logistics. Additionally, initiatives such as the "Make in India Defence" program in aerospace and "Skill India Mission 2.0" in education underscored the nation's commitment to innovation and development.

The Automotive industry in India showed resilience in the face of supply chain disruption and regulatory uncertainty. Focusing on sustainability and innovation, the sector saw an increase in electric vehicle (EV) adoption, with sales reaching Rs 4.22 lakh crore. The Aerospace & Defence sector focused on developing indigenous manufacturing capacity and technology to strengthen national defence by investing Rs 1.5 lakh crore.

In the Healthcare sector, India has invested heavily in digital health solutions and infrastructure to combat the lingering effects of the COVID-19 pandemic. With a total investment of more than Rs 50,000 crore, companies have expanded telemedicine and implemented AI-powered diagnostics to improve patient care.

The Manufacturing sector prioritized digitalization and process optimization to enhance productivity and competitiveness amidst supply chain disruptions and inflationary pressures. Companies invested Rs 1.2 lakh crore in automation technologies and smart manufacturing initiatives to streamline operations and reduce costs. The Logistics & Transportation companies invested Rs 800 crore in blockchain-based traceability systems and cyber security protocols to secure supply chains and protect sensitive data from cyberattacks.

The Hospitality industry adapted to customer preferences and regulatory requirements through new service offerings and customer engagement strategies. With an investment of Rs 0.5 lakh crore, companies also focused on using contactless technology to improve health and safety measures, ensuring that guests have satisfaction and compliance.

The Agricultural & Food Processing sector embraced technological initiatives to increase agricultural productivity and ensure food security in the face of climate change and supply disruptions. With an investment of Rs 1 lakh crore, companies focused on precision farming and farm-to-fork traceability solutions to improve crop yield and quality.

The BFSI sector focused on digital transformation and risk management to address cyber threats and regulatory challenges. Banks and financial institutions invested Rs 2,50,000 crore to implement advanced cyber security measures and fraud detection systems to protect customer data and prevent financial fraud.

The Biotech & Life Sciences sector showcased innovation and resilience amidst regulatory complexities and supply chain disruptions. The Chemicals & Petrochemicals sector navigated environmental regulations and market volatility through sustainable practices and operational excellence initiatives. Digital learning and job training were adopted to meet workforce challenges and enhance productivity in the face of technological disruption and demographic changes in the Education & Skill Development sector.

The Energy sector has shifted towards renewable energy and sustainable development policies to mitigate the risks of climate change and reduce dependence on fossil fuels. Moreover, with investments of Rs 1.5 lakh crore in smart grid technologies and demand-side management initiatives to optimize energy consumption and reduce emissions, the sector prioritized grid modernization and energy efficiency.

The IT ITES sector continued to drive digital transformation and innovation to address cybersecurity threats and meet evolving customer demands. With investments of Rs 4 lakh crore, companies focused on cloud computing and cybersecurity solutions to protect data and ensure business continuity.

The Metals & Mining sector focused on sustainable practices and community engagement to address environmental concerns and social risks associated with resource extraction. With investments of over Rs 0.8 lakh crore, companies implemented reclamation and rehabilitation projects to restore mined areas and promote biodiversity conservation.

The New Age sector, comprising startups and technology companies, showcased innovation and resilience amidst market uncertainties and funding challenges. Additionally, the sector prioritized talent acquisition and retention, with investments of Rs 0.5 lakh crore in employee benefits and workplace diversity initiatives to attract top talent and foster a culture of innovation.

The Telecommunication sector continued to expand connectivity and digital infrastructure to meet growing demand for broadband services and IoT applications. With investments of over Rs 2 lakh crore, companies deployed 5G networks and fiber-optic cables to enhance network capacity and speed.

In summary, India's diverse sectors demonstrated resilience and innovation in navigating through a challenging operating environment in 2023. As India continues its journey towards economic prosperity, proactive risk management and innovation will remain critical drivers of success across diverse sectors.

# India Showcasing An Optimized Risk Handling



**Figure 2: Corporate India Risk Index 2023**

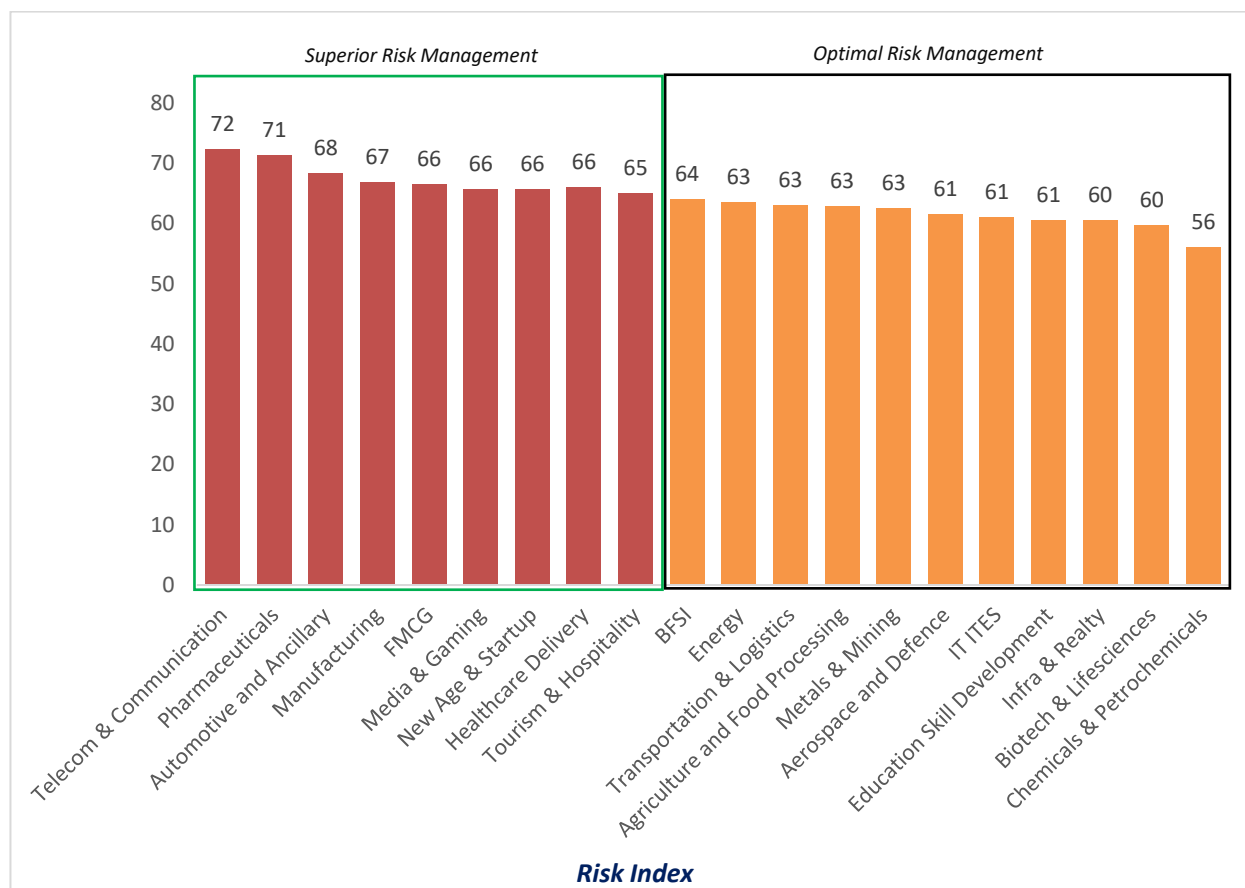
A score of 64 on the Corporate Risk Index indicates optimal handling of risk by the Indian companies. However, to enter the superior risk handling territory, the Indian companies have scope to improve upon their risk management practices in the areas of crime & security risks and strategic risks. It was observed across sectors that there is an increased focus on cybersecurity and other technological risks.

In the sectorial analysis of risk exposure, it was found that companies were most affected by market & economy and operational & physical risks due to inflation, global volatility and geopolitical events like the Red Sea crisis, Israel Palestine conflict and Russia Ukraine War.

Another common risk was supply chain disruption, exacerbated by factors such as geopolitical pressures, natural disasters, and inflation. To mitigate these risks, companies diversified their supplier base, invested in inventory management systems, focused on localization and adopted agile supply chain practices to enhance resilience and flexibility.

It was observed that risk management is getting an increased focus in the growth strategy of every organization with companies having dedicated risk teams to manage their risk exposure. All the organizations fell either into 'Superior Risk Management' or 'Optimal Risk Management' category indicating good risk management practices.

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



**Figure 3: Corporate India Risk Index 2023 Sector Score**

### Superior Risk Index

Superior risk handling was found in nine industrial sectors: Telecom & Communication, Pharmaceuticals, Healthcare Delivery, Automotive & Ancillary, Manufacturing, FMCG, Media & Gaming, New Age & Startups and Tourism & Hospitality.

### Optimal Risk Index

Optimal risk handling was found in 11 industrial sectors: BFSI, Energy, Transportation & Logistics, Agriculture & Food processing, Metals & Mining, Aerospace & Defence, IT ITES, Education & Skill Development, Infrastructure & Realty, Biotech & Lifesciences and Chemicals & Petrochemicals.



# Biotech & Lifesciences Insights 2023

One of the main forces behind India's goal of an economy of INR 417 Lakh Crore is the biotechnology industry. Over the next ten years, the Indian biotechnology sector is expected to develop exponentially. The Government of India is working to establish India as a global centre for biotechnology and biomanufacturing through policy initiatives like Startup India and Make in India. India ranks third in Asia Pacific and is among the Top 12 countries in the world for biotechnology, accounting for around 3% of the worldwide biotechnology market.

As the world's fifth-largest economy, India is regarded as one of Central and Southern Asia's most innovative economies, coming in at number 40 on the Global Innovation Index (GII) Report 2023.

The industry has experienced a surge in growth, with the Indian bioeconomy growing at a double-digit rate year-on-year for the past nine years, reaching INR 11 Lakh Crore by fiscal year-end 2023.

In 2023, India witnessed a rise in private equity and venture capital investments in the biotech industry, reaching a record-breaking INR 7840 Crore, a 19% growth compared to the previous year. The number of biotech startups also saw a substantial increase, with 1391 startups getting registered, reflecting a 23% growth from the previous year's count of 1128.

The industry achieved major milestones in the year 2023. By introducing an ABC transporter gene into the genetic background of JG 16, an improved drought-tolerant desi chickpea variety known as "ADVICA (NC 7)" was created. This gene increases seed weight and yield (up to 7% high) under drought stress.

Notable progress has been made in the homegrown creation of vaccines

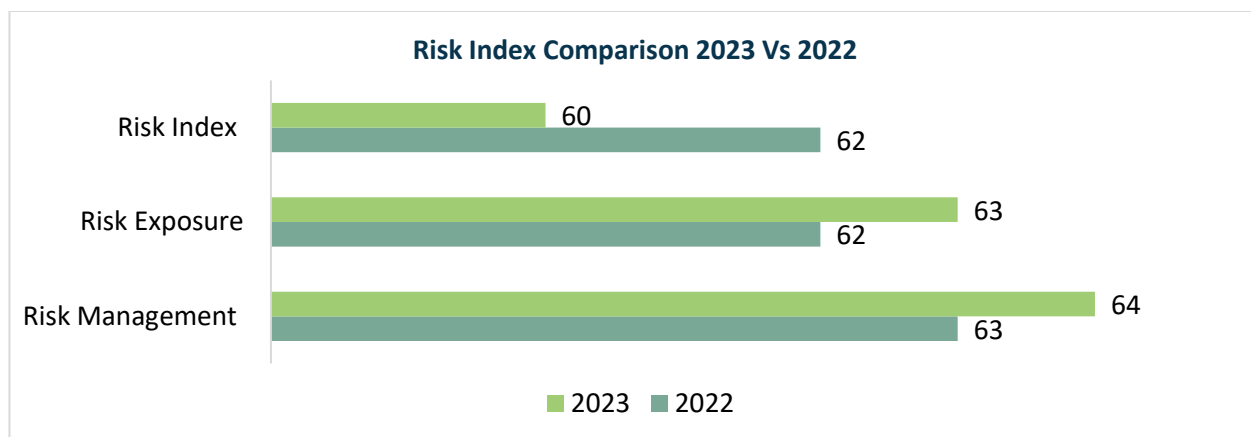
The world's first and India's first-ever indigenously developed DNA-based vaccine, ZyCoV-D; the country's first-ever protein subunit COVID-19 vaccine, CORBEVAX™; the country's first-ever indigenously developed mRNA vaccine, GEMCOVAC-19™; the country's first intranasal COVID-19 vaccine, INCOVACC; and the country's first Omicron booster vaccine based on mRNA Platform, GEMCOVAC-OM

However, there were disrupted supply chains. The attacks in the Red Sea posed a risk of supply disruptions of key pharmaceutical ingredients and chemicals, including Active Pharmaceutical Ingredients (APIs). This risk was particularly relevant for small molecule manufacturing, as the attacks could disrupt the supply of crucial materials from APAC (India and China) to the US and Europe. The forced rerouting of ships through the longer channel led to increased shipping costs, which could be passed on to API buyers in regions that typically import these goods from APAC.

The conflict in the Red Sea also affected the supply of critical materials for the pharmaceutical industry, with over 65% of pharmaceutical exports from India being transported by sea.

The future still looks good. The India Bioeconomy Report 2023 projects a total of 35000 cumulative startups for 2030 and 13470 for 2025. Emerging areas of innovation, such as gene editing, synthetic biology, and personalized medicine, are also driving growth in the Indian biotech industry. The industry's strong expertise in biosimilars and generics positions it well to cater to the global demand for affordable healthcare solutions.

# Biotech & Lifesciences Sector Risk Index 2023 Vs 2022



**Figure 4: Detailed Comparative Analysis 2023 Vs. 2022**

## Biotech and Lifesciences Sector Risk Index 2023 Vs 2022

The biotech sector in India has seen a slight decrease in risk index from 62 in 2022 to 60 in 2023, indicating improved risk management practices. Favorable government policies, such as the concessional corporate tax rate of 15% for newly incorporated manufacturing companies.

The sector has been growing steadily, with a focus on research and development, favorable government policies, and increasing epidemiological factors. Technological advancements, collaborations between biotech firms and CROs, and operational and physical factors have contributed to the sector's growth. The sector has also been resilient during the pandemic, with the Bioeconomy playing a pivotal role.

The risk exposure has increased, but the risk management practices have also been enhanced, which can be utilized as reasons for the decrease in the risk index.

## Biotech and Lifesciences Sector Risk Exposure 2023 Vs 2022

In 2023, the biotech sector in India experienced a slight increase in risk exposure, rising from 62 in 2022 to 63. Notably, market, technology, and natural hazard risk exposures increased, while operational, physical, crime and security, and strategic risks decreased. The sector's growth has been supported by government initiatives. Challenges persist, including technological limitations and various risks. Despite facing operational, physical, and security challenges, the sector's overall risk exposure saw a marginal increase in 2023, reflecting a dynamic landscape where market, technology, and natural hazard risks play a more prominent role in shaping risk management strategies.

## Biotech and Lifesciences Sector Risk Management 2023 Vs 2022

There was an improvement in the India Risk Management, it slightly improved to 60 from 63 in 2022. Factors like support from the government in the form of PLIs, concession of corporate taxes, FDI policies, and decreased foreign exchange volatility attributed to the improved risk management score.

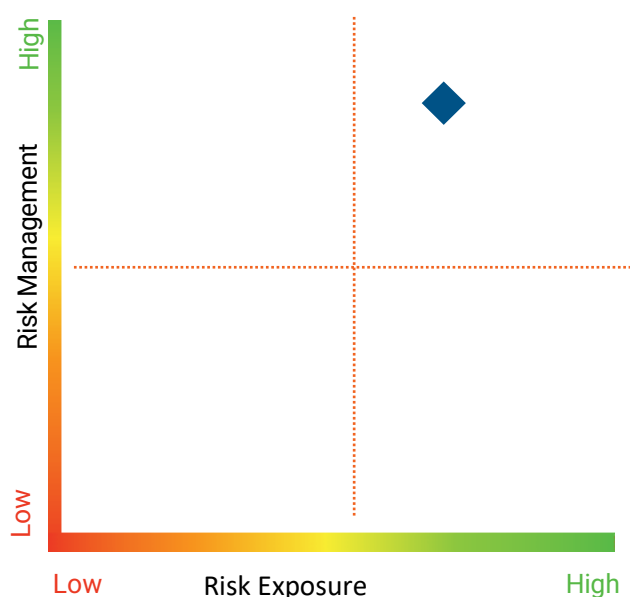
## Key Highlights



### Risk Dimension Analysis: Market and Economy

**Risk Exposure Score: 68**

**Risk Management Score: 68**



#### Inflation

- Rising interest rates have intensified financial pressures on early-stage biotech companies in India. The increased cost of capital has made investments riskier.
- The conflict between Russia and Ukraine has disrupted exports to Ukraine, leading to challenges in trade payments and declining trade volumes for Indian pharma companies. This disruption has contributed to inflationary pressures within the sector.
- The attacks in the Red Sea in 2023 have posed risks of supply disruptions of key pharmaceutical ingredients and chemicals, especially from countries like India to the US and Europe. These disruptions have led to delays in critical materials reaching Indian biotech companies, potentially impacting production schedules and costs, and leading to inflation.

- The Indian biotechnology business has been affected by inflation in 2023. This is because it has changed the regulatory environment, made operations more difficult, increased lending rates have hurt profitability, and encouraged the development of artificial intelligence (AI) and other technological advancements to deal with the industry's changing terrain.

#### Taxation

- Under the Union Budget 2023, the government announced - "500 new 'waste to wealth' plants under GOBARdhan (Galvanizing Organic Bio-Agro Resources Dhan) scheme to be established for promoting circular economy.

- Companies undertaking in-house R&D activities can claim a weighted deduction of 200% of the expenditure incurred on such activities. This regime offers a concessional tax rate of 10% on income earned from certain patents developed and commercialized in India.
- India's funding in the biotechnology sector was abysmally low, with the entire Ministry of Science and Technology receiving only 0.05% of the country's GDP.
- The 14 Autonomous Institutions (AIs) of Department of Biotechnology (DBT) were subsumed under one Apex Autonomous Society viz. Biotechnology Research and Innovation Council (BRIC), for centralized and unified governance to maximize impact of biotech research across the country. Subsequently, BRIC Society was registered in November 2023
- The National Policy on Biofuels was amended, and the Indian government decided to boost biofuel production and move on with the introduction of ethanol-blended gasoline, with a maximum 20% blend, starting in April 2023.

#### **Foreign Exchange Rates**

- The conflict between Israel and Hamas led to higher insurance premiums and shipping costs for Indian exporters shipping goods to Israel. This situation affected the profitability of domestic exporters, with potential increases in risk premiums charged by India's Export Credit Guarantee Corporation (ECGC) for firms exporting to Israel.
- For certain products, the customs duty benefit was discontinued post-March 2023 while the Government also decided to continue with and has provided an extension for several other conditional Customs duty benefits for imports of goods such as lifesaving drugs/medicines and diagnostic test kits, portable x-ray machines/systems, parts and components required for the manufacture of Blood Pressure Monitors and blood glucose monitoring system (Glucometers), etc.

#### **Geopolitical Risks**

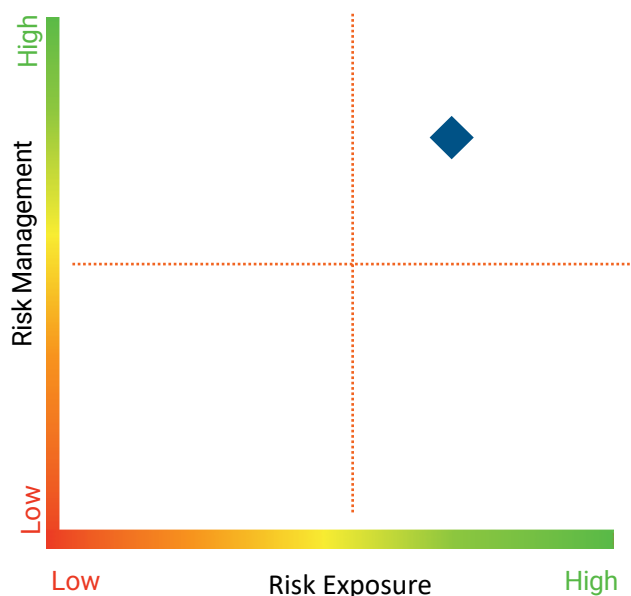
- The ongoing Israel-Hamas war in 2023 has had a minimal impact on the Indian biotech industry, as the sector is relatively small and India's exposure to the Israeli market is not substantial.
- The attacks in the Red Sea pose risks of supply disruptions for key pharmaceutical ingredients and chemicals, especially from Asia-Pacific (APAC) countries like India



## Risk Dimension Analysis: Technology

**Risk Exposure Score: 70**

**Risk Management Score: 73**



### Innovation Risk

- Department of Biotechnology as designed a significant program to support high-performance biomanufacturing to advance innovation via integrated innovative research and discovery. Bio-enabler Hubs, such as Bio-Artificial Intelligence Hubs to foster innovation and Biomanufacturing Hubs to encourage scale-up, will supplement this.
- The Israel-Hamas war disrupted Israel's pharmaceutical supply to the US and Europe, creating opportunities for India to fill the gap. This could be particularly beneficial for Indian companies that can innovate to produce biosimilar drugs, as Israel is home to 43 innovator or biosimilar drugs approved in the US, UK, and/or EU. Long-term conflict in the Israeli region will push R&D and manufacturing out of Israel. This will be enabled by the fact that most funding and patents are owned by foreign sources. This creates an opportunity for India to attract both R&D and manufacturing to its shores.

### Intellectual Property Risk

- The IP from DBT-funded intramural and extramural organizations must be transferred by the DBT Intellectual Property (IP) Guidelines, September 2023. These rules have been constructed to facilitate the smooth transfer of intellectual property from academic institutions and research facilities to the commercialization of technologies and goods with a greater potential for societal impact.
- The Indian biotech industry has encountered challenges related to patent protection, especially in the life sciences sector. The complexity of patent laws and regulations, particularly in areas like genetically modified organisms, poses a risk to protecting innovations and technologies.



### Disruptive Technology

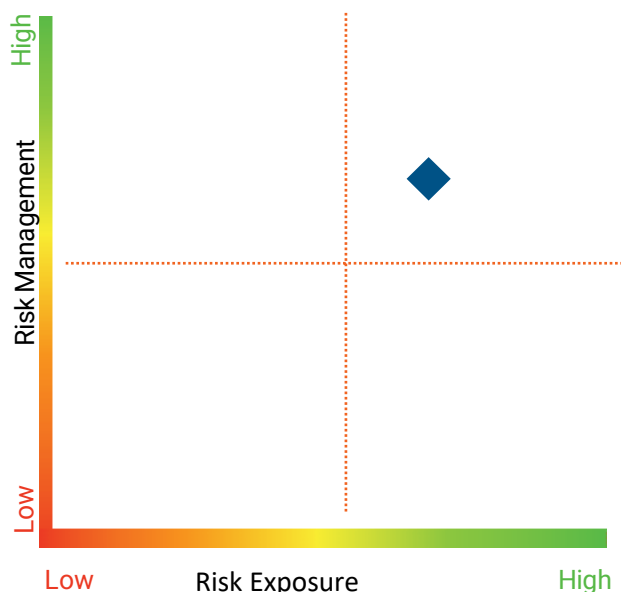
- The Central Drugs Standard Control Organization (CDSCO) authorized the first gene therapy clinical trial for hemophilia in India. This trial used a novel lentiviral vector-based gene therapy technology based on hematopoietic stem cells.
- The development of a ceramic membrane integrated anaerobic bioreactor (CMIAR) enables the on-site validation of enhanced technology (iSMAART) and microbial products for the efficient treatment of wastewater from the textile sector.
- The integration of AI in protein engineering has been a game-changer in 2023, with companies designing novel proteins with enhanced or specific functions. This fusion of AI with protein engineering is critical for developing new therapeutics, enzymes, and biomaterials, and signifies a major leap towards more efficient and sustainable biotechnological solutions.



## Risk Dimension Analysis: Operational and Physical

**Risk Exposure Score: 68**

**Risk Management Score: 68**



### Supply Chain Risk

- The redirection of cargo ships away from the Red Sea passage into and out of the Suez Canal has disrupted global supply chains, affecting container trade and causing delays in shipments. This disruption has added transit time to journeys, increased fuel costs, and forced companies to reassess their supply chain strategies to navigate the challenges posed by the conflict.

### Workplace Accident

- On June 30, 2023, a fire broke out at a unit of a privately held pharmaceutical company in the southern Indian state of Andhra Pradesh. Two people were killed and five others were injured in the incident. The fire occurred in a solvent reactor at the unit, and one of the injured workers was reported to be in extremely critical condition with over 95% burns.
- The incident highlights the need for improved safety measures and risk management in the Indian biotech industry.

### Human Resource

- High-quality, knowledgeable, and skilled workers are developing in the Indian biotech business. Numerous biotech companies have shifted to an outsourced business model as a result of ongoing layoffs, corporate mergers and acquisitions, and rising remuneration expectations. One of the biggest issues facing the HR departments of biotech firms in 2023 will be employee engagement and retention as well as competitive pay.

### Financial Risk

- In 2023, the Indian biotech industry faced financial risks that impacted funding for high-risk models, particularly for start-up companies. Challenges in securing funding for risky projects have been a concern, as private investors have shifted towards later-stage investment strategies due to market conditions and a lack of investment opportunities in new and risky projects.

### **Breach of Law**

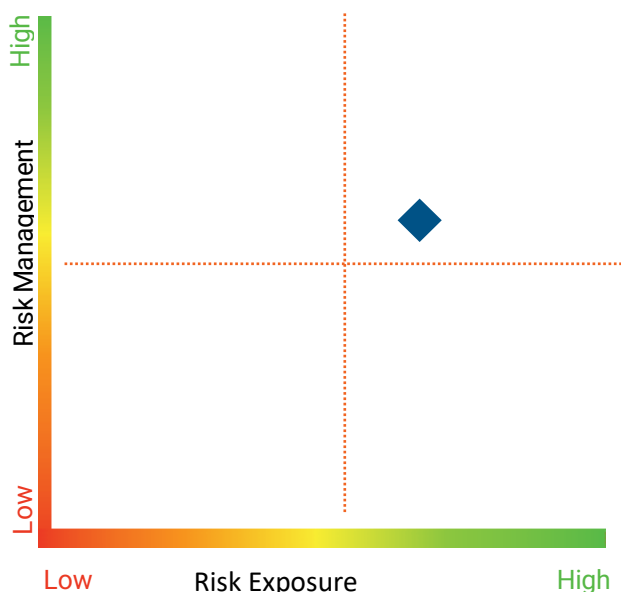
- The US Food and Drug Administration (FDA) uncovered failures and lapses at factories run by some of India's major pharmaceutical firms. Inspectors found unsanitary conditions, poorly trained staff, shredded paperwork, under-investigated customer complaints, and evidence of exporting contaminated drugs to the US.
- In 2023, the Indian biotechnology sector faced legal challenges related to patent violations by certain domestic pharmaceutical companies. The courts in India reprimanded these companies for allegedly violating patent policies by launching drugs that were still covered by patents. For instance, A German Pharma Giant accused two Indian drug companies of infringing its linagliptin patent, highlighting an ongoing issue of Indian companies violating patent laws.



## Risk Dimension Analysis: Crime and Security

**Risk Exposure Score: 64**

**Risk Management Score: 66**



### Cyber-crimes

- In 2023, the Indian biotechnology sector experienced cybercrime incidents, with a significant number of cyberattacks targeting various critical sectors, including healthcare.
- Biomedical institutions like the All India Institute of Medical Sciences (AIIMS) and the Indian Council of Medical Research (ICMR), faced cyberattacks compromising sensitive data such as patient samples and research information.

### Counterfeiting

- In 2023, the Indian biotechnology sector experienced incidents of counterfeiting, particularly in the pharmaceutical industry.
- The pharmaceutical sector is particularly affected, with 20-25% of drugs being counterfeit.

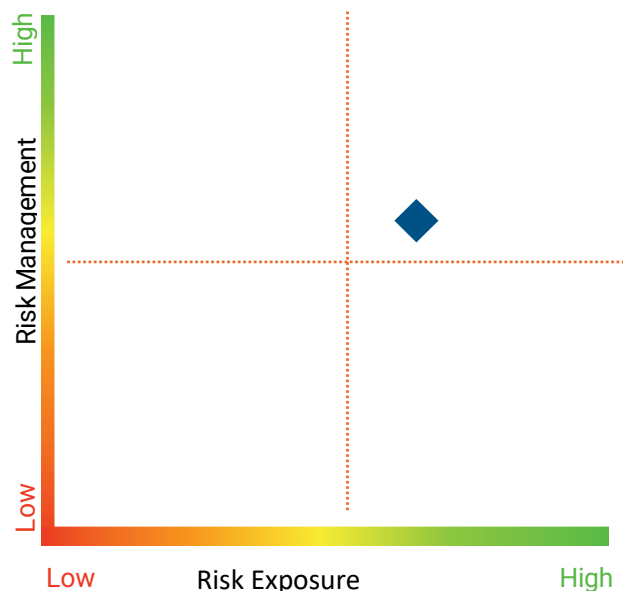
### Bio-Terrorism

- There were no reported incidents of bioterrorism specifically in the Indian biotech sector in 2023. However, the broader context of bioterrorism remains a concern, with the potential for malicious actors to exploit emerging technologies such as AI, additive manufacturing, synthetic biology, nanotechnology, and gene editing for nefarious purposes.

## Risk Dimension Analysis: Natural Hazard and Event

**Risk Exposure Score: 66**

**Risk Management Score: 72**



### Natural Hazards & Pandemic and other global epidemic diseases:

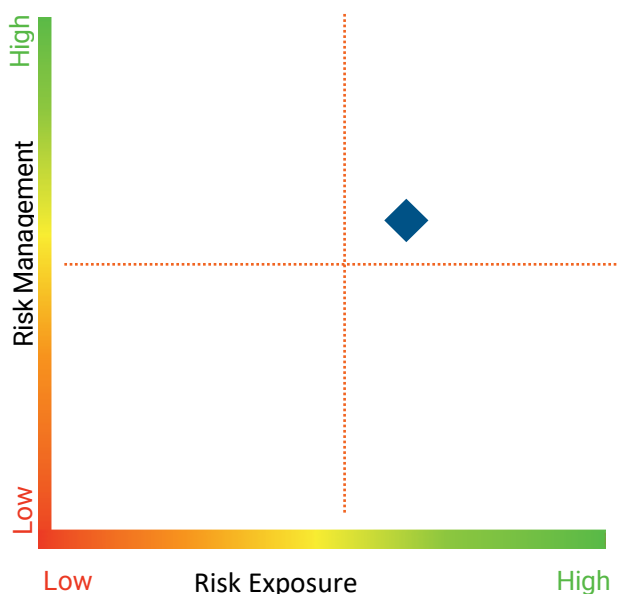
- In 2023, the Indian biotech industry was affected by natural hazards in various ways. One of the major challenges was the locust attacks, which affected agricultural production and food security in the country.
- While the biotech industry is not directly affected by natural disasters, staff productivity is impacted by them, and pandemic situations significantly lower production capacity.
- The experience with COVID-19 may have led to increased government and private sector investment in the Indian biotechnology sector, potentially leading to long-term growth and preparedness for future pandemics.
- Lockdowns and travel restrictions disrupted global supply chains, impacting the availability of raw materials and equipment needed for biotech production.



## Risk Dimension Analysis: Strategic Risk

**Risk Exposure Score: 28**

**Risk Management Score: 29**



### Increased number of recalls and quality audits:

- The increased number of recalls and quality audits indicates a need for improved quality control measures and closer monitoring of manufacturing processes to ensure the safety and efficacy of biotech products.
- The Indian government mandated annual audits of pharma suppliers by drugmakers in 2023 to ensure compliance with quality standards and regulations

### Resource scarcity / Misutilization / Overall Utilization

- There are shortages in supplies for biotech firms that manufacture generic drugs since the majority of their raw materials come from China and they need independent medication supplies to expand further

### Delay in execution of projects

- The Red Sea crisis led to significant disruptions in shipping, with six of the top ten container shipping firms either significantly reducing or completely halting their operations in the Red Sea region. This has resulted in substantial delays and increased shipping costs, impacting the supply of raw materials and finished products for the biotech sector.
- Due to the ongoing threats to crew and cargo safety, ships have been rerouted around the Cape of Good Hope, leading to additional delays and increased costs.

### Failed / Hostile Mergers & Acquisitions

- The sector saw over 30 partnerships, MoUs, and collaborations aimed at boosting India's pharmaceutical growth trajectory. The pharma and biotech segment accounted for a significant share of values across both M&A and PE/ Venture Capital (VC) activity, with two top deals in the sector.

# 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 activities such as Electrical Audit & Thermography built in with other such solutions.
- **Fire Hydrant IoT:** Fire hydrant monitoring is an automated solution that monitors key parameters such as Hydrant and Sprinkler line pressure, Main and Jockey pump on-off status. These can be interpreted to provide intelligence on unauthorized usage of water and leakage. 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. The outcome of the exercise will help the plant maintenance team to rectify the leaks and reduce the energy cost. This will also improve the process parameters and production quality.
- **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 places by risk assessors.
- **Renewable Solutions:** In line with our philosophy for recommending business solutions, we recommend advise on efficiency measurements for wind and solar power generating assets. Drones are used to provide high accuracy and the 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 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, root cause analysis with MIS, claim assessment reports.
- **Technical engagements:** Uncertainty of the risk associated with the transit can be concluded with marine experts. 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 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 station and detailed post hijack recovery case studies is recommended to effectively monitor and mitigate theft / pilferage prone dispatches and 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.



## Liability

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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 minimization with reference to some parameters of distinctive research and industries best practices.
- **Drone Solutions:** 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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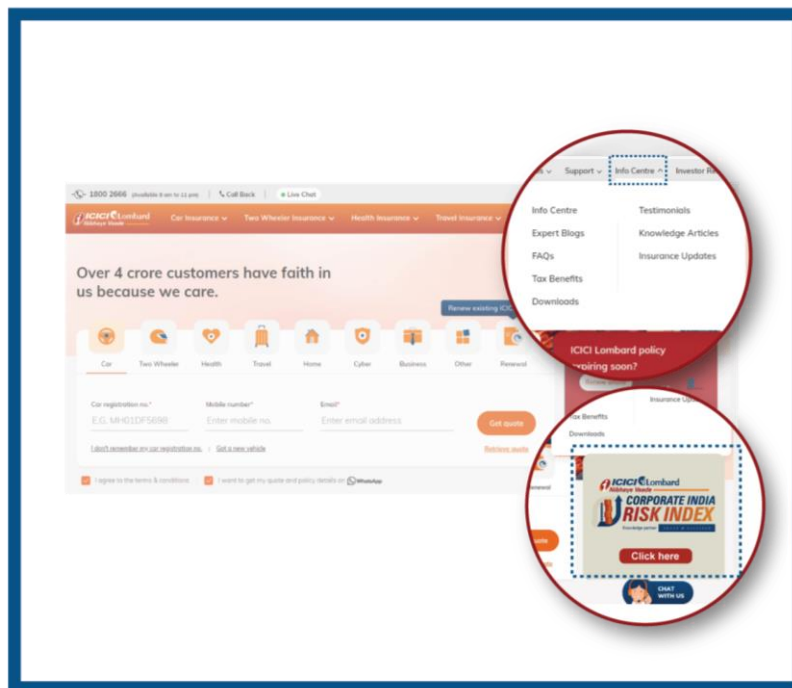
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