ICICI Lombard
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CORPORATE INDIA RISK INDEX

2021

Intelligence partner FROST & SULLIVAN

Sector: Chemicals & Petrochemicals

ICICI Lombard Corporate India Risk Index

Introduction

- ICICI Lombard Corporate India Risk Index is a one of its kind, unified, credible, standardised corporate Risk Index that spans over the country level, the industry level and the company level
- This is the 2nd Iteration of the Corporate India Risk Index which was started in 2021. This index maps the risks to a company on the basis of awareness, preparedness, probability and criticality.
- The Corporate India Risk Index for 2021 is based on published business performance reports, assessments, insights & collaborative inputs from key executives/ officials of 220 companies in India across 20 key sectors. It will help the companies understand the level of risk exposure and current level of risk management.

Comprehensive Sector Coverage

- Aerospace & Defense
- Agriculture & Food Processing*
- Automotive & Ancillary
- BFSI
- Biotech & Life sciences*
- Chemicals & Petrochemicals
- Education Skill Development*
- Energy
- FMCG
- Healthcare Delivery
- Infra & Realty
- IT/ITES
- Manufacturing
- Media & Gaming*
- Metals & Mining
- New Age & Startup
- Pharmaceuticals
- Telecom & Communication*
- Tourism & Hospitality
- Transportation & Logistics

** New Sectors for ICICI Lombard Corporate India Risk Index 2021*

Risk Framework

The ICICI Lombard Corporate India Risk Index Framework comprises of 32 risk elements across 6 broad dimensions:

Market and Economy
- Inflation
- Taxation
- Regulatory Risks
- Foreign Exchange Risk
- Geo-political Risks
- Competitive Risk

Technology
- Disruptive technology
- Intellectual property
- Data compromise
- Counterfeiting
- R&D / Innovation failure
- Infringement / violation

Crime and Security
- Cybercrimes
- Counterfeiting
- Harassment/Bribing
- Executive threat/ Impresonation
- Physical violence/ abuse

Operational and Physical
- Accidents/Fire Safety
- Strikes/Closure/Unrest
- Supply Chain Risk
- Environmental Risk
- Terrorism and Insurgency
- Equipment Malfunction

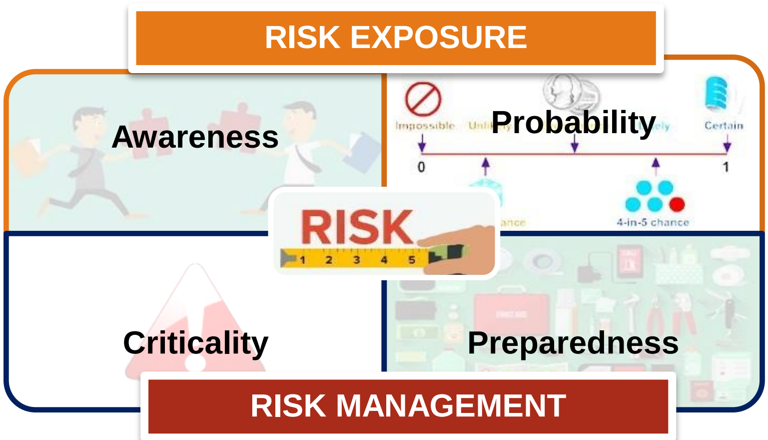
Natural Hazard and Event
- Natural Hazards like flood, drought, famine, earthquake, landslide, etc.
- Pandemic (e.g. COVID)

Strategic Risks
- Resources scarcity and/or misutilization
- Public sentiment
- Failed/Hostile M&A

ICICI Lombard Corporate India Risk Index – Approach

The Risk Framework comprises of 32 risk elements across 6 broad dimensions

The Risk Exposure and Risk Management is measured across 4 parameters.



The Corporate Risk Index for 2021 is based on published business performance reports, assessments, insights & collaborative inputs from key executives/ officials of 220 companies in India across 20 key sectors.

Risk Exposure (RE) = *f*(Awareness, Probability)

Risk Management (RM) = *f*(Criticality, Preparedness)

COMPANY RISK INDEX	=	*f*(Risk Management, Risk Exposure)

Sector Risk Index = average of company risk indices

Country Risk Index = average of sector risk indices

ICICI Lombard Corporate India Risk Exposure – Scale

Score	< 40	40 - 50	50 – 60	60 - 80	> 80
Category	**Very Low Risk Exposure**	**Low Risk Exposure**	**Moderate Risk Exposure**	**High Risk Exposure**	**Very High Risk Exposure**
	Has minimal exposure to overall risks and thus probability of a risk incident is very less.	Has low exposure to overall risks and its risk exposure is within acceptable tolerable limits.	The corporate is able to balance the impact of moderate exposure to overall risks up to a certain extent.	The risk exposure and its impact is very high in the industry in which the corporate operates.	Unable to foresee risk incidents, the probability of these incidents and quantified business loss may be extremely high.

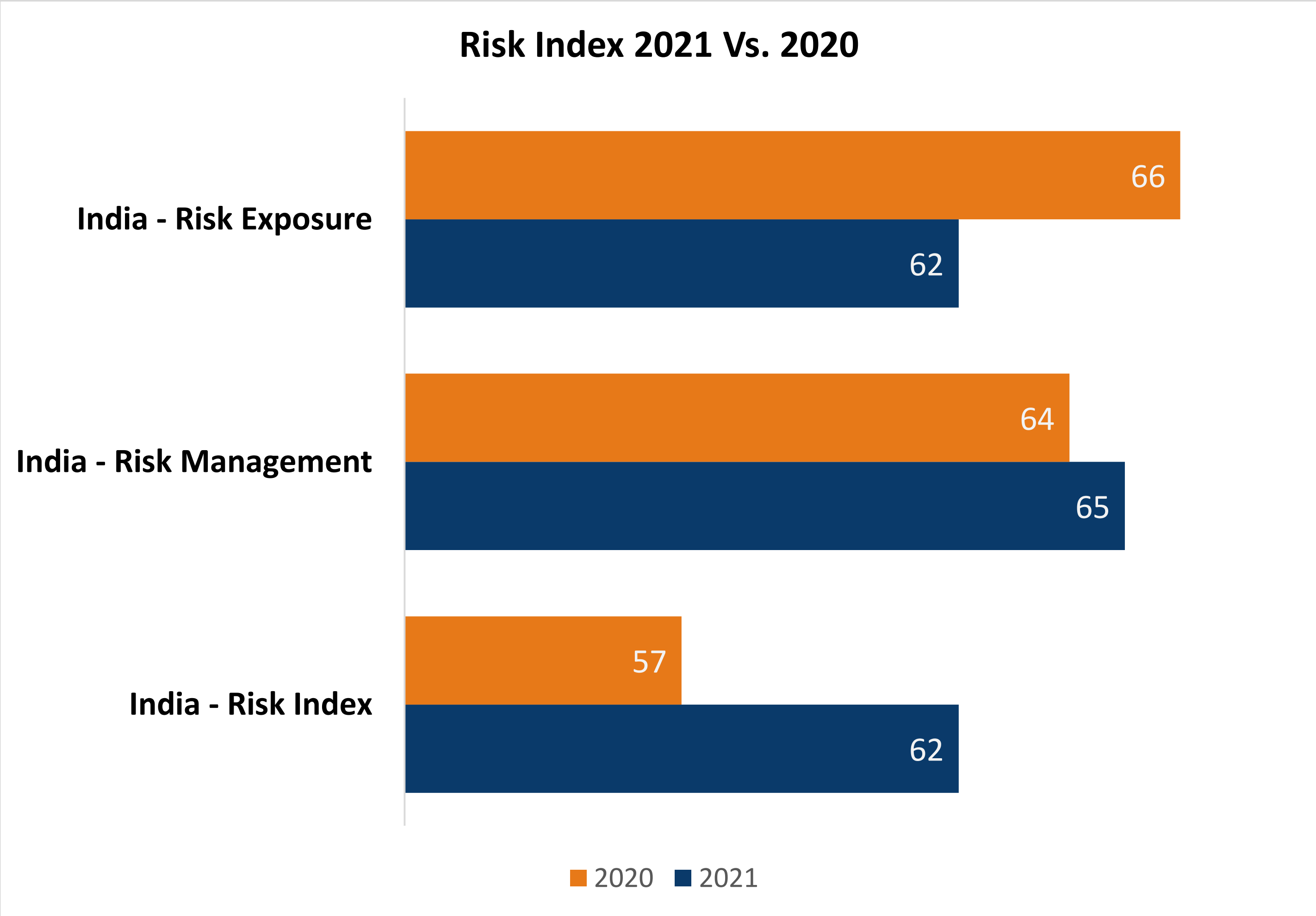
ICICI Lombard Corporate Risk Management – Scale

Score	< 40	40 - 50	50 – 70	70 - 80	> 80
Category	**Poor Risk Management**	**Below Par Risk Management**	**Acceptable Risk Management**	**Superior Risk Management**	**Exemplary Risk Management**
	Unable to understand the concept of Risk management and reactive to overall risks that affect it.	Use of inefficient or legacy risk management practices which is reactive to newer or unknown risks.	The corporate is prepared to handle known risks and the criticality of its risks are not severe.	Top class risk management practices with its ability to manage dynamic risks as well as unknown risks.	Over prepared in Risk management practices, proactive to emerging risks with high investment in risk mitigation practices

ICICI Lombard Corporate Risk Index – Scale

Score	< 40	40 - 55	55 – 65	65 - 75	> 75
Category	**Ineffective**	**Sub-optimal**	**Optimal**	**Superior**	**Over-prepared**
	The corporate has very high exposure or very poor risk management practices or both	Not all risks are handled effectively. Risk management practices are likely dated or inefficient.	Most current risks are being handled effectively. Emerging risks associated with strategic initiatives need more diligence.	Very effective and efficient risk management practices. Well positioned to handle current and future risks across dimensions.	High investment in risk mitigation practices. Likely over-investment in one or more risk dimensions. Difficult to justify ROI

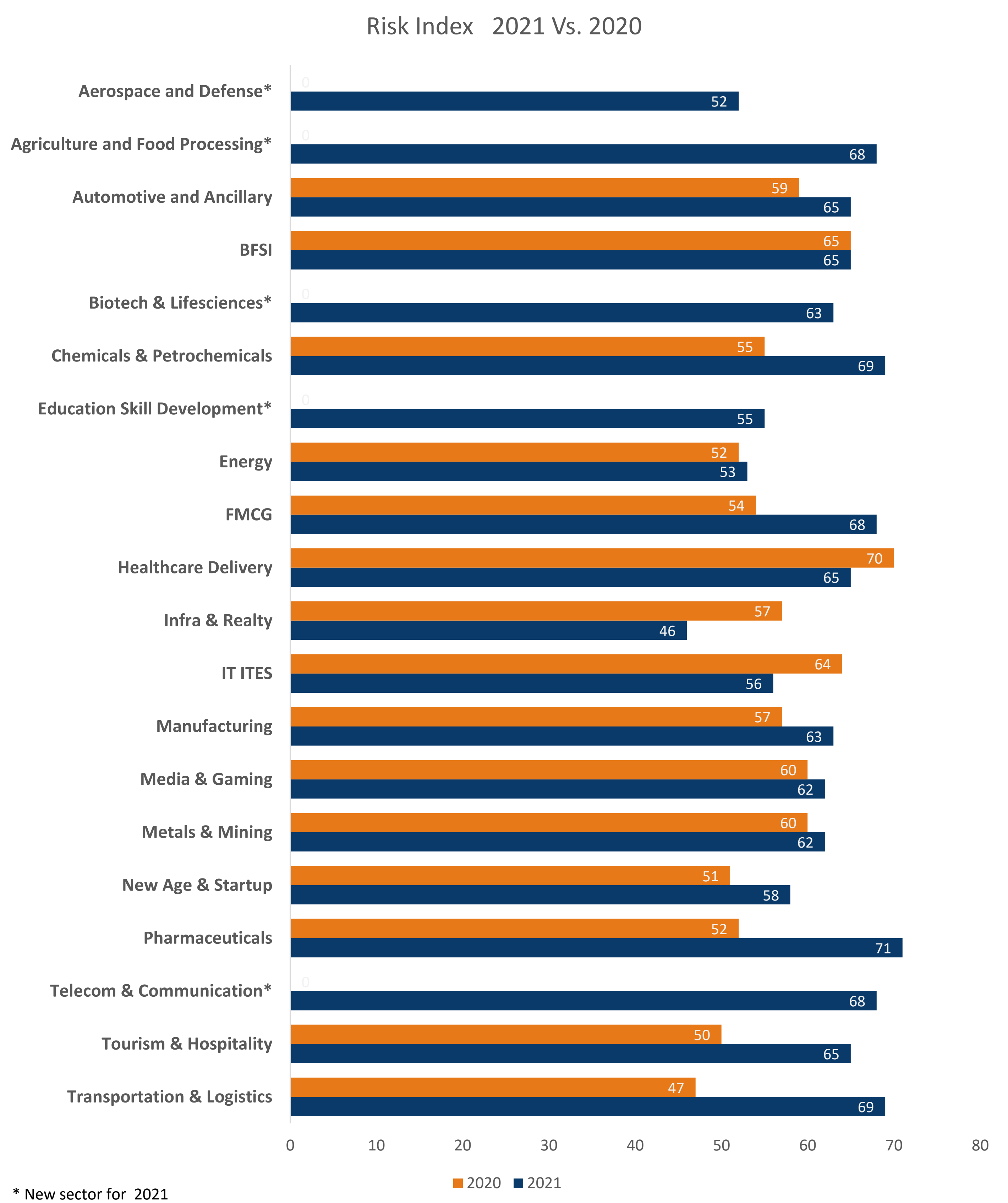
ICICI Lombard Corporate India Risk Index



India Risk Index(Optimal Risk Handling)

- As the pandemic and pandemic related constraints eased up, Sectors showed varied recovery as risk related to **Resource Scarcity**, **Delay in Execution of projects** due to pandemic and **Financial Risks** due to **tax relaxation** pacified
- The overall Risk Index for India improved from **57** to **62** in 2020-2021 , however sectors like **Infra & Realty, Metals & Mining** and **New Age & Startup** the risk Index decreased which was primarily due to the increased **Strategic Related Risks, Crime & Security Risks, Financial Risks, Inflation** and **Technology Risks**
- Sectors like **Transportation & Logistics, BFSI, Chemicals & Petrochemicals and Tourism & Hospitality** showcased significant improvement in the Risk Index, because the risk exposure lessened across all the risk dimensions.
- It was also observed that the Risk Exposure came down for the **Large Businesses(67 vs. 64) , Medium Businesses(65 vs. 61)** and **Small businesses (64 vs. 63)** for 2020 vs. 2021.
- With the reduced impact of the pandemic and innovative initiatives by business leaders over the supply-chain, sectors like **Manufacturing, Automotive, FMCG and Chemicals & Petrochemicals** improved on the **Risk Index**.

ICICI Lombard Corporate India Risk Index – Sector Comparison



* New sector for 2021

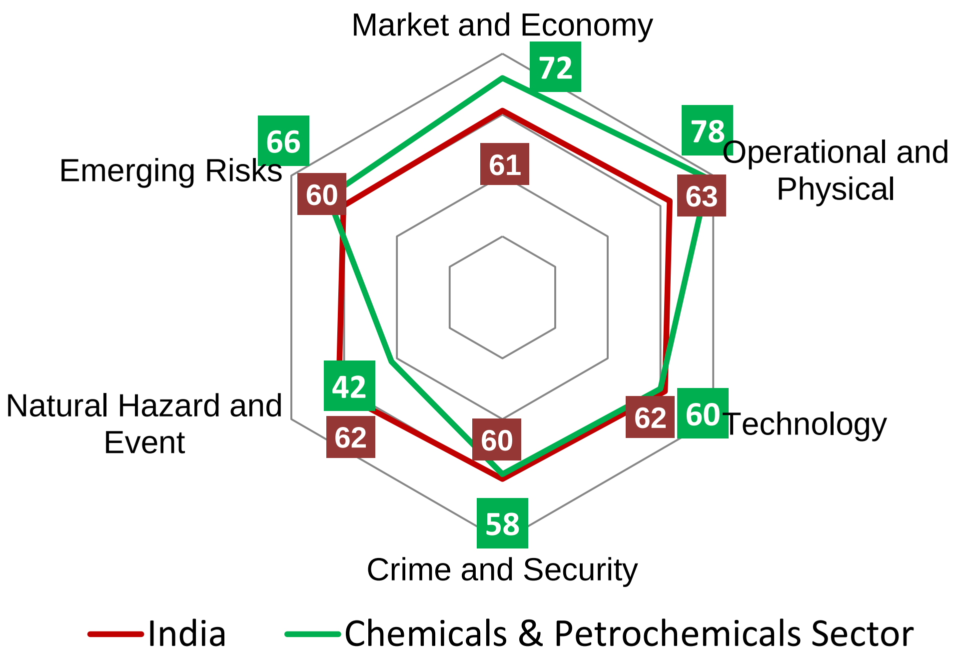
Observations:

Automotive & Ancillary, FMCG, Manufacturing and Pharmaceuticals sector have been managing their Risk in a defined, methodical and strategic manner, with continuous monitoring and containment of Risks. Transportation & Logistics, Metals & Mining, Healthcare Delivery and Biotech & Life Sciences sectors need to improve their Risk management capabilities in order to have an overall acceptable Risk measure.

India Risk Profile Vs. Sector Risk Profile

Risk Profile	2022 Risk Exposure	2022 Risk Management	2022 Risk Index	2021 Risk Index
India	62	65	62	57
Chemicals & Petrochemicals	59	64	69	55

India Risk Index Vs. Chemicals & Petrochemicals Sector Risk Index



The Indian Chemicals & Petrochemicals sector's Risk Exposure score is 59, mainly due to the following reasons:-

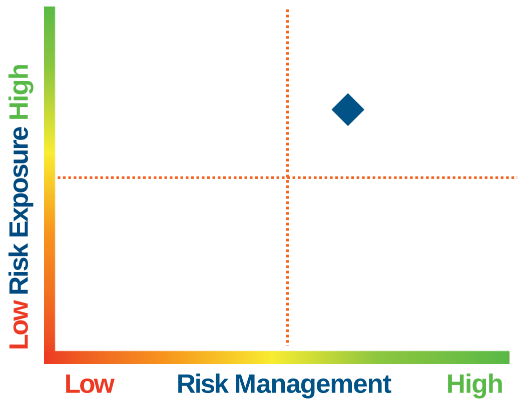
- High exposure to Natural Hazards and Technology risks.
- Internal factors like chemical hazards, negative product impacts and liabilities, and other types of potential operational liabilities and exposures.
- External factors like sluggish economic conditions, higher production costs, and the overall regulatory environment, which has a direct impact on the business performance.

The overall Risk Management score of the sector is 64.

- Risk management is a top priority. The industry is becoming increasingly uncertain, which breeds risk.
- Focus should be on restructuring, portfolio optimization, cost reduction, and multiple scenario forecasting in order to mitigate risk.
- Stakeholders expect every aspect of the business to be constantly re-evaluated, from contractual arrangements to supply chain integration, environmental compliance, and joint venture due diligence.
- Executives must also ensure that large projects are completed on time, on budget, and with high quality.

Risk Dimension Analysis: Market and Economy

Risk Exposure Score: 58
Risk Management Score: 63



Rapid growth due to the positive atmosphere of encouragement.

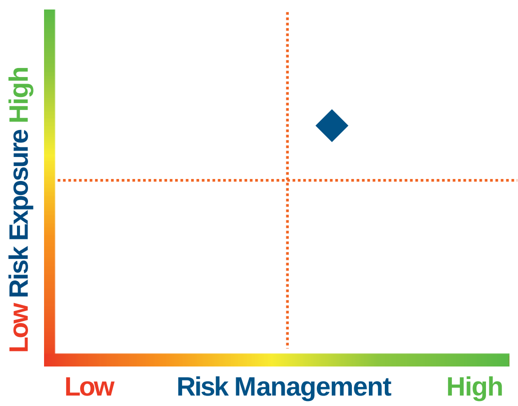
- India's competitiveness can be attributed to robust domestic demand, quality labor at competitive cost, strong regulatory and tax framework, robust investment policy, high quality infrastructure and good governance
- The domestic small and medium enterprises are expected to grow owing to an improvement in domestic demand and higher realization due to high prices of chemicals
- Production linked incentive (PLI) scheme in the chemical sector as planned to be launched by the Govt. can help to boost domestic manufacturing and exports

Recommendation:

Given the supply chain disruptions, trade conflicts and tariff wars between major countries, India can take advantage of opportunities such as Glass Makers and Polysulfone. Additional fiscal incentives, such as tax breaks, special incentives through PCPIR, and SEZ to expand downstream units, will boost industry production and development.

Risk Dimension Analysis: Technology

Risk Exposure Score: 63
Risk Management Score: 66



Need for technological modernization of the sector's facilities

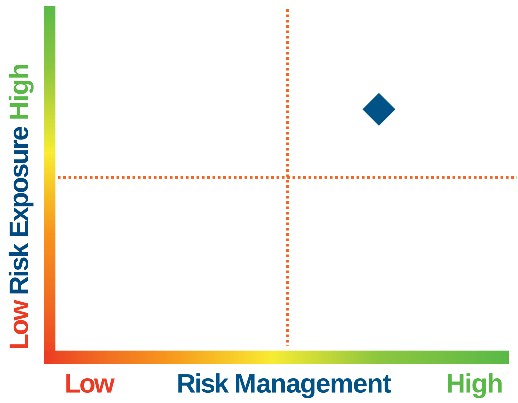
- During the lockdown, intensive use of IT infrastructure helped ensure a smooth transition from the physical to the digital space while maintaining the same level of productivity.
- Companies are investing in green R&D portfolio technologies to develop a digitally enabled ecosystem to scale innovation and upgrade critical infrastructure
- Focus on advanced technology, strong research capabilities and IT implementation are the key success factors for the sector

Recommendation:

Chemical companies, with the help of the right framework and vision, can increase their efficiency and negate human errors by leveraging automation and digitization technologies like IoTs, Artificial Intelligence and data analytics .

Risk Dimension Analysis: Operational and Physical

Risk Exposure Score: 61
Risk Management Score: 68



India needs to integrate growth opportunities with circular economy

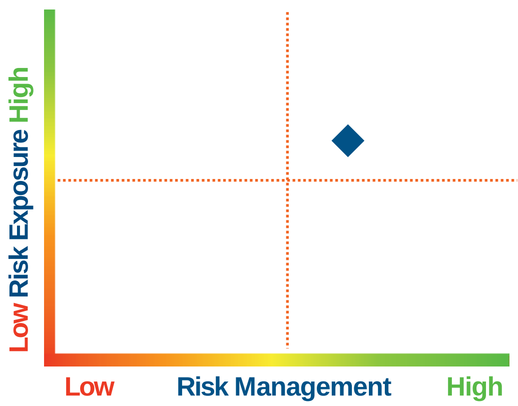
- The sector leverages digitalization and Industry 4.0 for improved operations management & adapting innovative business models according to the systemic and emerging trends
- Feedstock access, market access, capital and operating costs, and commissioning period etc. offer a real competitive advantage to India in relation to global petrochemical hubs.
- The government intends to implement production-link incentive system with 10-20% output incentives to create an end-to-end manufacturing ecosystem through the growth of clusters.

Recommendation:

The Indian chemical companies can try to align themselves with sustainability goals adapted by the US and European Union and hence adopt global best practices. Companies can also lean on circularity and adopt multi-pronged approach to help advance circular economy.

Risk Dimension Analysis: Crime and Security

Risk Exposure Score: 65
Risk Management Score: 67



Increased risk of Cyber attacks across the world

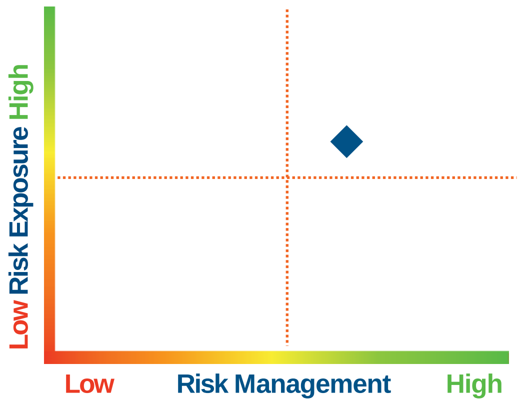
- Lockdown and social distancing has spread company networks wider, exposing a slew of vulnerabilities that hackers are looking to exploit.
- In India, chemical sector safety and security remain woefully inadequate, and the facilities vulnerable to terrorism and catastrophic failures.
- The Industry is regulated by a host of central and state agencies on various aspects related to licensing, safety and security
- Measures like chemical safety assessment, audit capacity and regular monitoring are undertaken to ensure safety within the sector

Recommendation:

Through Vulnerability Analysis (VA) and predictive analytics, firms can employ novel ways to strike facilities/systems encompass Information security, Physical security, Cyber security and well-established Security policies and procedures.

Risk Dimension Analysis: Natural Hazard and Event

Risk Exposure Score: 68
Risk Management Score: 65



Balancing the impacts of the pandemic has become an overarching management principle

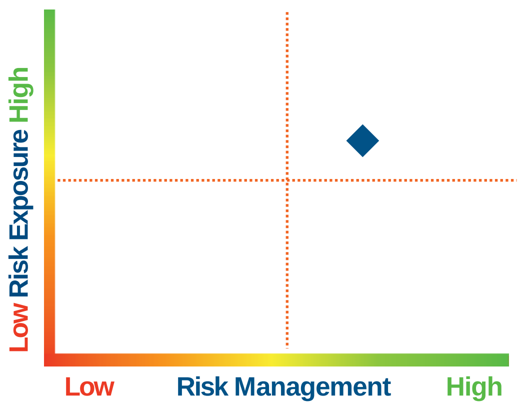
- COVID-19 has upended many consumer behaviors, shattered many established beliefs, shook up value chains and prompted governments to act
- The chemical industries are working on managing volumes or production locations to match shifting demand & changing supply routes to maintain the availability of goods across the economy.
- Digitalization in the sector helped to mitigate the impact of covid by synchronizing various parts of the project from end to end like concurrent design work and delivering the customers without any delay

Recommendation:

Companies should have a Business continuity plan in place and remain insured to minimize damage from natural hazards. Further, responses to shock events require a broader, multilateral perspective like cross-company, value chain and private-public collaborations which can help to build resilience beyond the preparedness of a single organization.

Risk Dimension Analysis: Strategic Risk

Risk Exposure Score: 48
Risk Management Score: 51



Loss of prestige of the chemical manufacturer is disastrous for business.

- To prevent the dumping of cheap and substandard chemicals into the country, the government has begun initiatives like mandating BIS-like certification for imported chemicals.
- To prevent chemical accidents resulting in loss of lives, health injuries, environmental impact and property damage, important properties like Vapor Pressure, Melting Point, Flashpoint etc., are considered while handling hazardous chemicals
- If key risks are not mitigated, chemical firms may face a loss of consumer confidence, reputational harm, loss of competitive advantage, claims and legal disputes, regulatory non-compliance issues, investigations, fines and penalties, securities class actions and shareholder derivative lawsuits, and even bankruptcy

Recommendation:

Industries or their associations should hold public awareness campaigns from time to time for the benefit of nearby colonies and communities directly vulnerable to accidents. To facilitate sustainable development and reduce negative impacts in local communities and plant locations, companies should increase their CSR spending in areas such as sanitization and drinking water, rural development, healthcare, and so on.

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