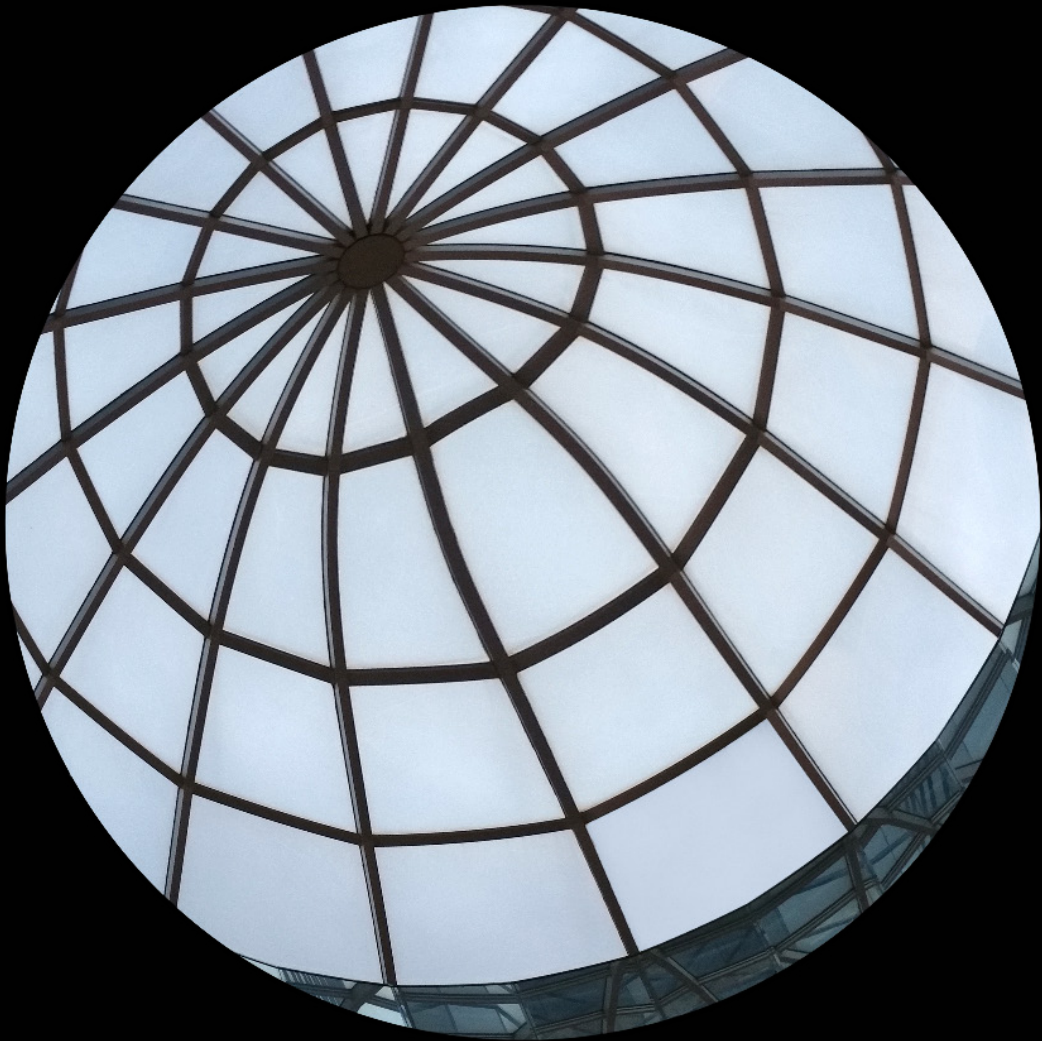


**Deloitte.**



**Comprehensive. Balanced. Effective.**  
Safety Matters



# The challenges

Organisations face a number of challenges when it comes to safety management

### Reactive policies and remediation

- Current safety risk management practices and policies are, by nature, constrained. They are predominantly reactive and cannot manage all eventualities.
- The organisation does not effectively communicate policies with employees to ensure understanding and awareness.

### Lack of adaptability and agility

- Safety processes, policies, and strategies are institutions within an organisation, and often have stringent compliance protocols, which make them rigid and devoid of flexibility.
- Further, they lack the adaptability to the daily realities of an operation. In some situations, the adherence to the 'standard' can even preclude a more appropriate decision that can cause an incident or failure.

### Human-design fallibility

- Existing safety strategies are created, developed, and implemented by humans, who are, by nature, fallible.
- More often, supporting systems are created by subject-matter experts failing to encompass the larger workforce. Strategies often exist in isolation, and detached from the operational realities and insights of frontline workers.

### Lack of mature analytics

- Current manual processes and procedures that are deployed by various industries and business functions lack capabilities to detect, prioritise, and manage safety issues.
- Fragmented data and overly complex analytics and business processes create significant quality, efficiency, and execution challenges.



# Safety framework

Regular measuring and monitoring of safety metrics lay the foundation for a positive safety culture in an organisation. Our framework focusses on the important risks needed to ensure safety in organisational processes.

## Safety culture

### Safety objectives

- Eliminate accidents
- Effective risk management
- Compliance management
- Highest safety standards/KPIs
- Continuous improvements

### Risks

- Operational
- Financial
- Reputational
- Compliance

### Operating model components

- Governance and policies
- Management processes
- Safety metrics and reporting
- Safety awareness

### Work environment (illustrative)

#### Factories/plants

- Workers
- Vendors and contractors

- Customers
- Visitors

#### Offices

- Corporate offices
- Stores

- Sales offices
- R&D centres

#### Other places

- Schools
- Hospitals

- Townships
- Roads

## Manage, Monitor & Remediate

### Internal reporting

Safety officer

Human resource

Management

### External reporting

Regulators

Other stakeholders

Key performance indicators (KPI) and incident reporting

## Enablers

On-going assessments

Technology resources

Training and awareness

Reporting



## How can we help?

Deloitte India Risk Advisory's safety solution covers the following aspects



### Governance and policies

This includes the organisational structure, committees, roles and responsibilities, and policies for managing the safety function.

- Assessment of established roles and responsibilities, ownership, and accountability for the safety function
- Compliance with roles and responsibilities of the safety committee/council of the organisation
- Assessment of the safety policies, manuals, and monitoring framework
- Compliance with procedures for updating the company policies and procedures for safety using internal/external reviews and evaluation



### Management processes

This includes processes to manage safety risks across the safety value chain.

- Assessment of established safety norms, and checks to see if they are robust and compliant
- Review of safety risk assessment
- Deployment of assets that support safety management effectively
- Assistance to companies for understanding the regulatory and compliance landscape in their respective industries
- Assessment of compliance programmes and systems



### Safety awareness

This includes the tone at the top, clarity on risk appetite, and appropriate training and awareness programmes to promote a positive risk culture.

- Procedure to anticipate and manage changes in the safety process
- Assessment of the risk culture and areas of improvements
- Process of group-wide training programmes and templates related to safety



### Safety metrics and reporting

This includes reports identifying safety risks and performance.

- Assignment and effective monitoring of KPIs and obligations to owners
- Benchmarking the defined KPIs against industry standards
- Reporting incidents and issues that are managed robustly, including root-cause analysis and corrective actions
- Procedures for reviewing safety MIS
- Use of advanced analytics that work to predict future behaviour based on contributing and relevant variables.





## Our solution - Safety matters

Deloitte has developed a safety solution, with a four-dimensional approach that uses a range of sophisticated analytics techniques to provide greater insight and clarity into safety systems, and helps its clients develop processes and design interventions to minimise risk.

### Key Highlights

- The assessment dashboard enables the evaluator to assess compliance with safety standards, monitor safety KPIs, and highlight areas that need key focus.
- Historically, the detection methods used by organisations consisted of periodic manual checks to test for known patterns. By applying advanced analytics across multiple data sources, our solution is designed to help identify issues early, and improve operations process efficiency and safety KPIs.
- Artificial intelligence (AI) and machine learning (ML) help recognise patterns and events through 24X7 monitoring. This solution features ML, risk-based alerting, and dynamic data visualisation.
- Interactive user-based learning programmes help manage your learning plan effectively, with self-paced learning modules. It also makes tracking progress easier with effective reporting, and improves knowledge retention with engaging, gamified, and immersive courses.

### Our solution

- **Safety assessment** Development of an integrated model and guidelines on occupational health and safety risk management
- **Insight-driven analytics** Identification of 'causal factors' and prediction of the likelihood of future incidents before they occur
- **Leveraging AI and ML** Leveraging AI and ML for clients to monitor operations by detecting and tracking anomalies in standard processes
- **Training and awareness** Interactive training sessions and awareness drives to promote positive safety risk culture, clarity on risk appetite, and specific target areas and areas of improvement



## Safety assessment dashboard

We have developed an integrated dashboard based on occupational health and safety standards/laws/regulations.



### Safety assessment

#### The dashboard

- Monitors compliance with safety standards
- Enables users to evaluate compliance with the defined safety norms based on assessment inputs
- Automates scoring for each safety element based on a defined score matrix
- Monitors KPIs and performance scorecards to assess the overall performance of the safety function
- Provides an overall assessment score of the plant/factory/BU, based on key safety elements such as safety policy, planning, implementation, electrical safety, height work safety, and emergency preparedness
- Highlights key risk areas and required action items

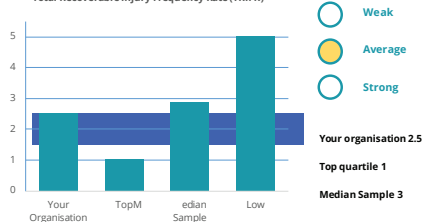
### Safety Assessment

Element No.	Element of Audit	Sub Element	Evaluation details	Reference	Score
1	Safety Policy	Safety Policy	How is the Safety Policy made available to all persons working for the organization or on its behalf?	IS 14489	5

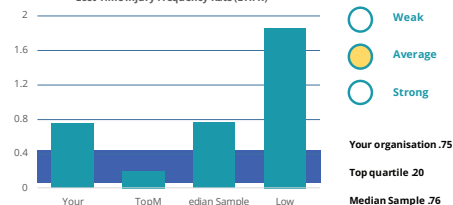
### Plant Safety Dashboard

Safety Policy- Score summary - Initial findings					
Sr. No.	Element of Audit	Max Score	Obtained Score	% Score	% Cut off score
1	Safety Policy	15	14	93%	70%
2	Safety Planning	130	0	0%	70%
3	Safety Implementation	95	0	0%	70%
4	Electrical Safety	85	0	0%	70%

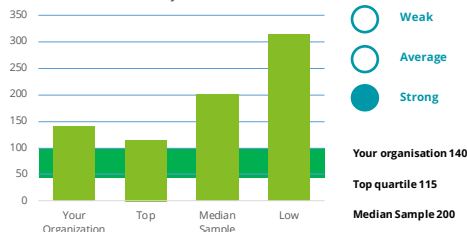
Total Recoverable Injury Frequency Rate (TRIFR)



Lost Time Injury Frequency Rate (LTIFR)



Severity Rate





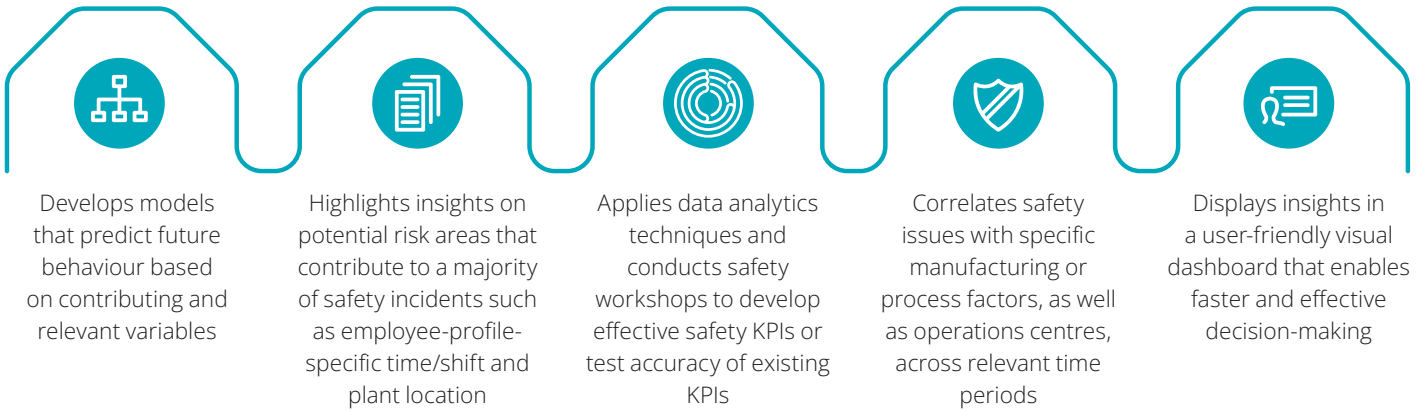
# Analytics - driving insights

Use of insight-driven analytics enables clients to predict and segment future events. The intent is to leverage these techniques to holistically analyse disparate data, and identify entities where conditions, indicative of high-severity incident risk, are evident.



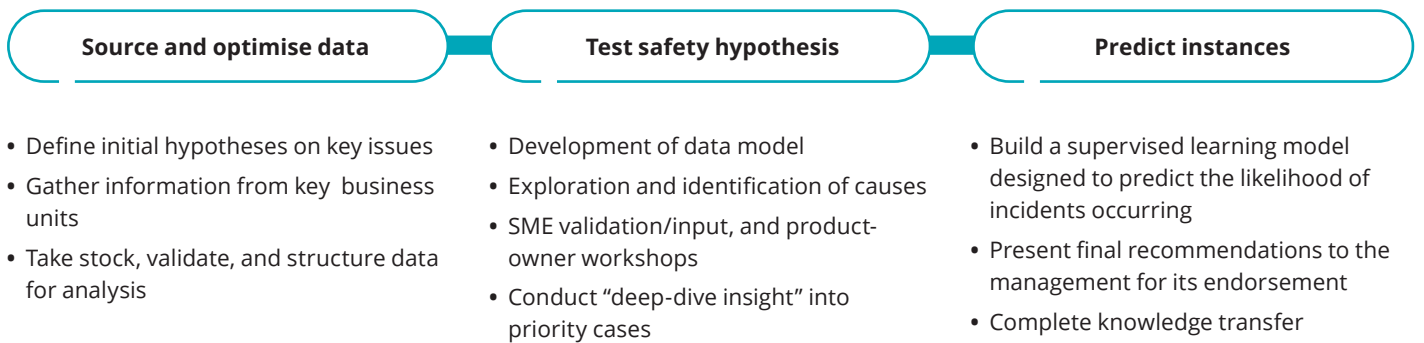
## Insight-driven analytics

Once the KPIs are monitored, and data is structured and available for analysis, an organisation can start to sift through and assess quantitative and qualitative information for trends and probabilities. Advanced analytics:

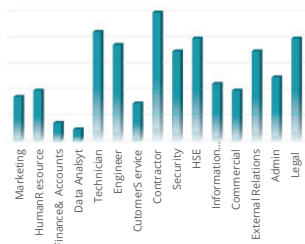


## Hypotheses testing

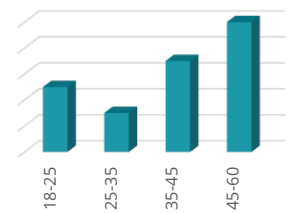
Hypotheses testing will be informed by early analysis of available data sources. We can then develop a reusable ADS, which can be enhanced and extended for future analysis.



What are the employee profiles (age, tenure, sex)?



What are the factors that increase an employee's propensity to be involved in a high-severity incident?





## Leveraging AI and ML

This solution features Machine Learning, risk-based alerting and dynamic data visualisation. It utilises the art of the possible with Artificial Intelligence and Machine Learning to recognise patterns and events through 24X7 monitoring.



### AI and ML

- **Recognise patterns**  
AI-based assessment platforms recognise dozens of common behaviour patterns, events, and objects across industries.
- **Monitoring**  
By monitoring the video feed from various locations, the AI/ML technology detects the patterns you want to track, and fetches reports, offers a complete view of operations, and generates a ticket on a real-time basis in case of observed negative behaviour.
- **24X7 View**  
As video cameras and AI never need to rest, organisations can get a complete, round-the-clock view of operations.

### Intelligent video with AI

- Camera
- Recognise
- Person identification
- Objects
- Patterns and activities

### Person and activity learning

- Person re-identification
- Activity learning
- Object learning

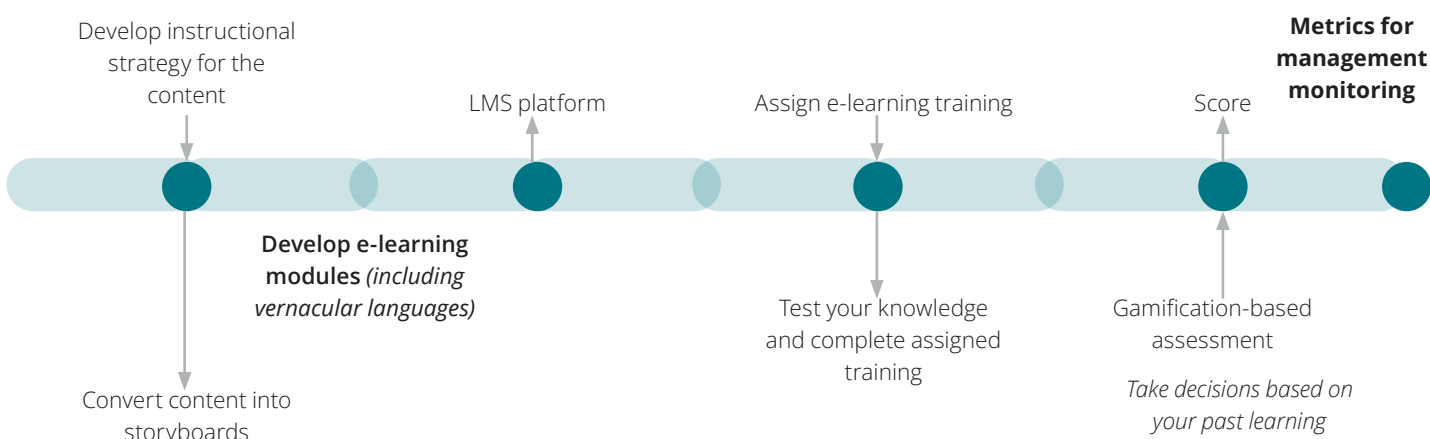
### Real-time alerts

Real-time alerts can be configured on analytics-based dashboards, and can also be sent on hand-held devices for quick action



## Continuous training and awareness

**A key enabler towards building a safety culture:** Interactive training sessions and awareness drives promote a positive safety risk culture, clarity on risk appetite, and specific target areas and areas of improvement



### Educate

- Rich storyboarding-enabled training content
- Use of chatbots (including vernacular languages) for ease of use
- Gamification to actively engage learners/trainees in various active ways



## Benefits of the solution

Our solution greatly improves the efficiency of issue identification, investigation, and resolution

**Improve quality**, as well as the company's overall brand and reputation, and long-term resilience.

**Proactive identification/** management of quality and safety concerns

Building **safety as a culture**

**Reduced legal, regulatory,** and compliance risk

**Reduce cost** and help ensure that every employee goes home safe every day



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