

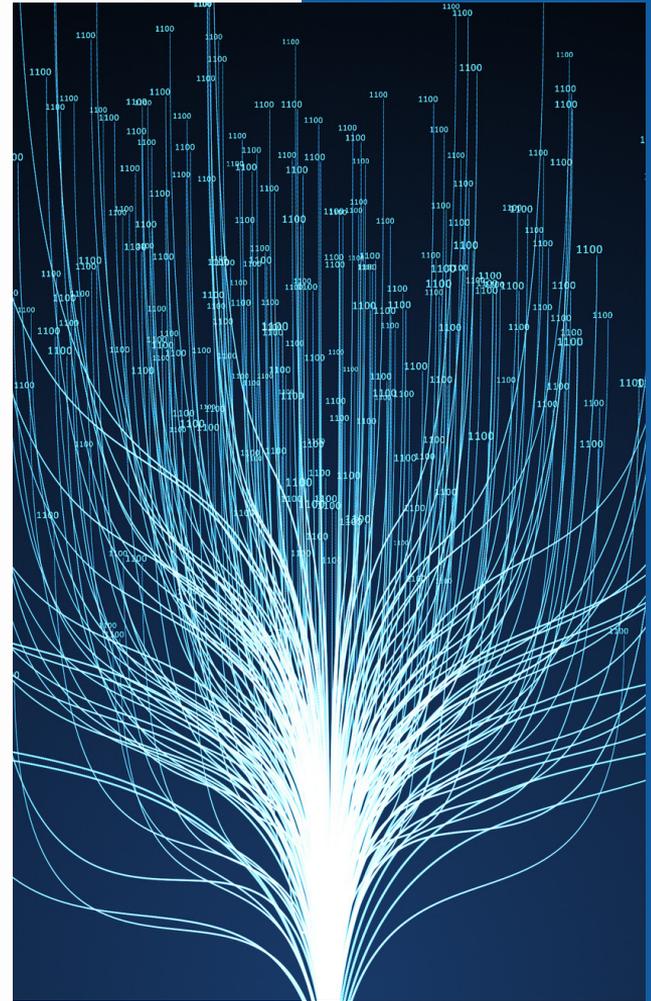
# Artificial Intelligence For Risk Management

AI applications to enhance risk identification, analysis, mitigation, and monitoring.



# Objectives

- ▶ Current State of Risk Management
- ▶ Introduction to Artificial Intelligence
- ▶ AI Technologies for Risk Management
- ▶ Risk Identification & Analysis
- ▶ AI Solutions for Enhancing Safety & Efficiency
- ▶ Open Discussion Panel on Risk & AI



# Future-proofing

Aerospace organizations must adapt their processes to stay ahead of new risks arising in an evolving market.

## Warning: Risk Was Identified Too Late

**01** Incomplete or inadequate risk identification

**02** Lack of risk ownership and accountability

**03** Insufficient resources and time; ineffective communication and collaboration

**04** Uncertainty and complexity



## Current state of Risk Mgmt?

- 01** Identifying general risks and evaluating their impact based on expert judgment and experience
- 02** Conducting operational risk analysis such as FMEA (Failure Mode Effects Analysis)

**Activity: How do you currently identify and analyze risk within your organization?**

# Effective Risk Management

Prevents Accidents &  
Non-conformances

02

Reduces Costs

01

03

Maintains Regulatory  
& Internal Compliance

Enhances Operational  
Efficiency

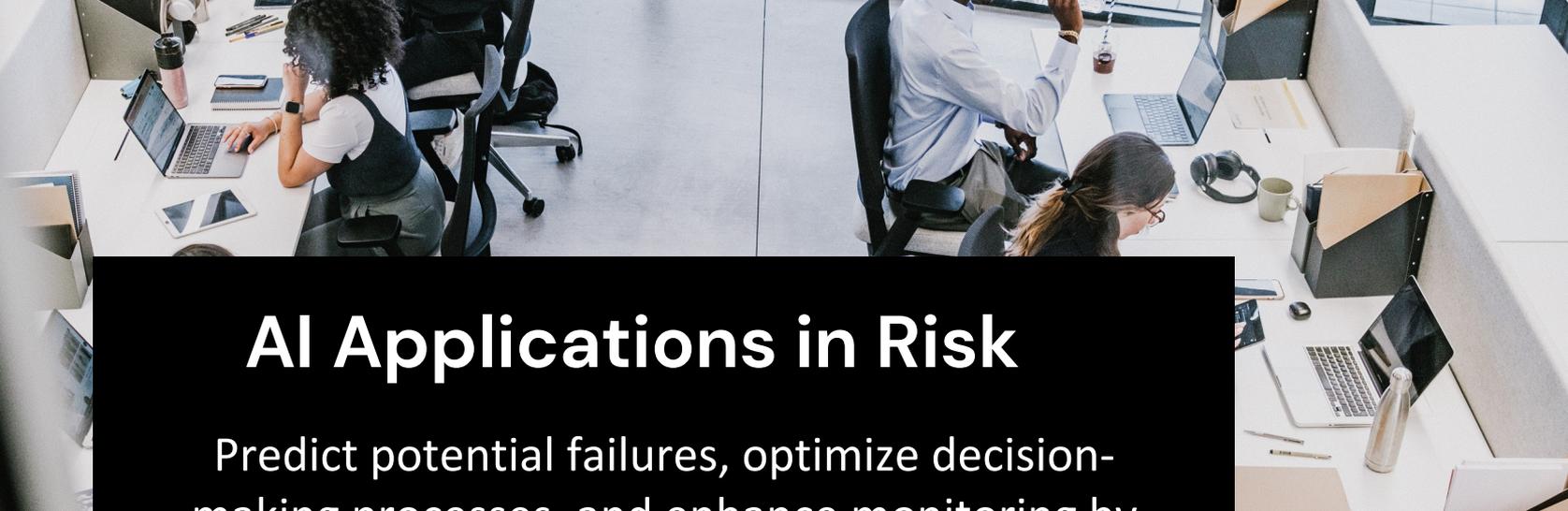
04



# Artificial Intelligence (AI)

- 01** Machines that are programmed to think and learn like humans
- 02** Systems performing tasks such as visual perception, decision-making, language
- 03** Predictive Analytics, real-time monitoring, anomaly detection





# AI Applications in Risk

Predict potential failures, optimize decision-making processes, and enhance monitoring by analyzing vast amounts of data in real-time

# Risk Identification & Assessment

- Analysis of Historical Project Data
- Example use case:
- Analyzing past project data to identify recurring issues with supplier delays and predicting future delays based on current project timelines and supplier performance.





## AI-Powered Natural Language Processing for Risk Information

- Analyze project documentation, stakeholder communications
- Example Use Case:
- Analyzing stakeholder communications to identify potential risks related to project scope changes or unmet requirements.

# Predictive Analytics & Modeling

Predictive models that estimate the likelihood and impact of risks. Taking into account project variables.

Example Use Case:

Using predictive models to forecast the impact of scope changes on project timelines and budgets.





## Automated Risk Monitoring

Monitor project data, metrics, and resource utilization; detect risk triggers or potential deviations.

Example Use Case:

Monitoring project progress to detect early signs of schedule slippage or budget overruns.

# Decision Support & Scenario Analysis

Assist project managers in evaluating risk mitigation strategies; simulating different scenarios

Example Use Case:  
Simulating various inventory allocation strategies (FIFO, Just in Time, Push, Pull) to determine the optimal approach for minimizing project delays.





## Knowledge Management & Lessons Learned

Capture and analyze project-related knowledge, including risk assessments, mitigation strategies.

Example Use Case:

Creating a centralized repository of lessons learned from past projects to inform future risk management practices.

# Continuous Improvement & Learning

Algorithms can learn from project data and outcomes to improve risk management

Example Use Case:

AI algorithm to help set up a Kaizen for your organization; and potential risks.





## Supplier & Contractor Risk Management

Analyze data related to supplier performance, contracts, and market factors.

Example Use Case:

Predicting potential supplier delays based on historical performance and market conditions.

# AI in Risk Management at JPMorgan Chase

- Developed an AI-driven program called COiN (Contract Intelligence), which utilizes machine learning to review and interpret commercial loan agreements.
- Traditionally, this task required thousands of hours of work by lawyers and loan officers.
- With COiN, JPMorgan can now complete these reviews in seconds with greater accuracy, significantly enhancing the efficiency and reliability of risk assessments in loan agreements.
- (Source: Appinventiv)

# AI in Cybersecurity at IBM with QRadar

- QRadar uses machine learning and automation to improve threat detection and response
- AI-powered system learns from analyst decisions, continuously improving its accuracy and freeing up analysts to focus on higher-level threat investigations.
- Significantly reduced the mean time to detect and respond to cyber threats
- (Source: IBM – US)

# Airbus AI into Safety & Compliance Protocols

- Airbus has integrated AI into their safety and compliance protocols to enhance risk assessment and management.
- By utilizing AI, Airbus generates trends from historical data combined with real-time operational conditions.
- (Source: nocode.ai)

# Southwest Airlines' Operational Efficiency

- Southwest Airlines has implemented AI to enhance flight scheduling, reduce delays, and improve customer satisfaction.
- AI-driven predictive maintenance strategies ensure the safety and reliability of the fleet
- (Source: [digitaldefynd.com](https://digitaldefynd.com))

## So what can we do now?

By leveraging intelligent systems and advanced algorithms; you can get started with AI NLP chat platforms to help with risk identification, impact analysis, decision making, and mitigation plan creation.

# Risk Identification Using AI

**4) Develop Mitigation Strategies**

**3) Analyze and Prioritize Risks**



**1) Define the Scope & Gather Data**

**2) Use AI as a Second Brain**

# 1. Define the Scope & Gather Data

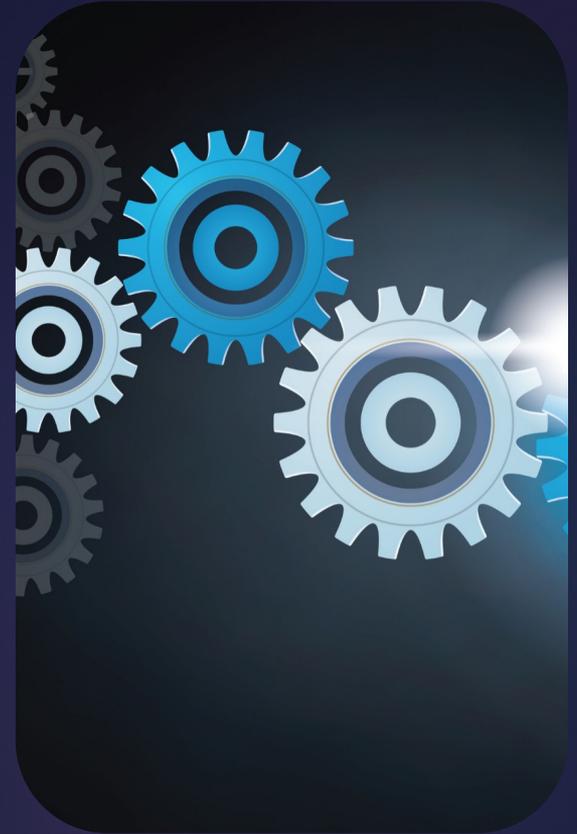
**Objective:** Evaluate the current operations of your aerospace organization to identify risk areas you would like to focus on;

What data would you like analyzed?



## Assess Current Operations

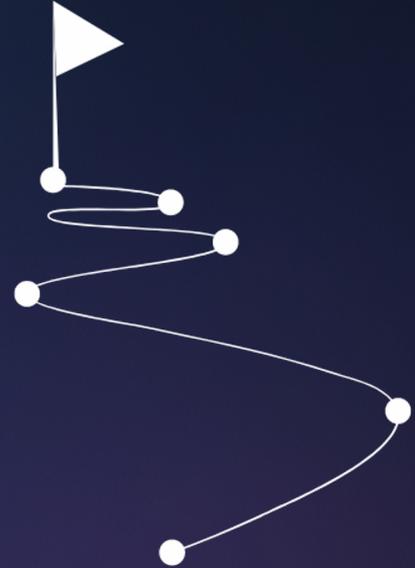
- 01** Determine the resources (financial, human, and technological) required for implementation.
- 02** Conduct a comprehensive analysis of existing processes, workflows, and pain points.
- 03** Identify manual and repetitive tasks that can be automated.



## 2. Use AI as a Second Brain

**Objective:** have AI brainstorm and identify potential risks based on the data provided.

Keep in mind: what's your goal with this?



# Prompt Engineering

01 Clarity and Specificity

02 Context Inclusion

03 Incremental Detailing

04 Feedback Loop

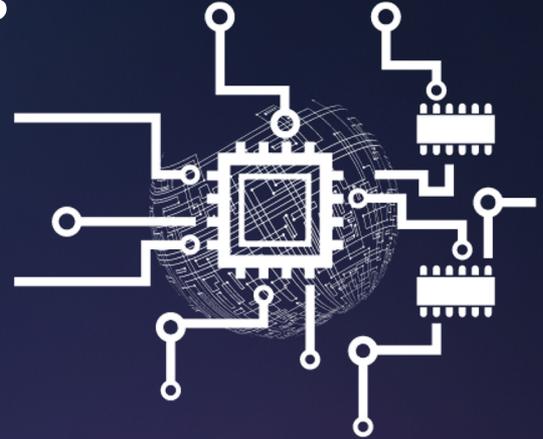
### 3. Analyze & Prioritize Risks

**Objective:** Simulate scenarios, calculate risk severity, and prioritize.



## 4. Develop Mitigation Strategies

**Objective:** Develop actionable mitigation strategies for the prioritized risks.



**“You are a quality manager for an aerospace distribution company, come up with a procedure outline for a new risk management procedure.”**

“You just received a nonconformance finding from an AS9120B audit; the finding is that the your risk management process was not robust enough. How do you respond to this finding?”

**“Analyze this corrective action completed. What are some additional risks to look out for that might impact our business?”**

"I need strategies to mitigate supply chain disruptions in aviation distribution. Could you provide detailed approaches to manage risks associated with supplier reliability and logistic issues?"

# Prompt Cheat Sheet

Act as a (ROLE) and Perform (TASK) in the following (Scenario).

“Act like a Quality Manager for an Aerospace Distributor. You just received a serviceable part. What kind of potential risks could the organization face from purchasing this part?”

**"What are the potential challenges and opportunities for aerospace distribution companies in emerging markets, and how can they navigate them effectively?"**

**Activity: Brainstorm some prompts you could ask that would give you valuable risk analysis as an aerospace distributor**

# Extensive List of AI Tools

[www.GPTE.AI](http://www.GPTE.AI)

[www.aitoolsdirectory.com](http://www.aitoolsdirectory.com)

# Monitor and Improve

**Objective:** Continuously monitor the performance of the risk mitigation and use real time risk assessment to stay ahead of the curve.





## Start Small

Utilize language model & chat AIs to help become your second brain.

Once use cases have been established, work with organizations to develop your own AI applications.

"AI transforms risk management by predicting pitfalls before they happen, ensuring that foresight is as valuable as hindsight."

## Conclusion

AI can improve efficiency and reduce costs within your risk management process.

Successful implementation requires careful planning, training, and ongoing monitoring and improvement.

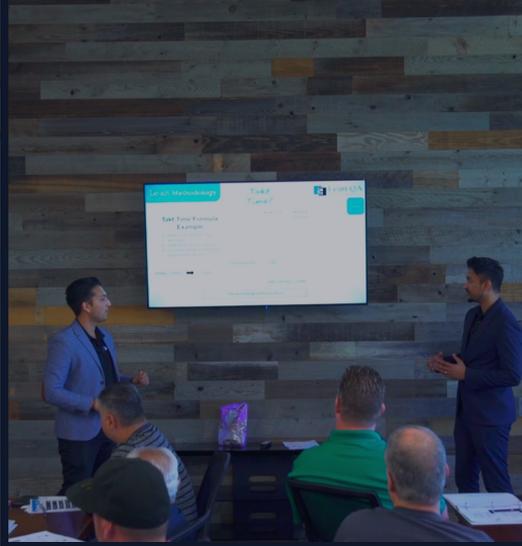


## Q&A

“You are attending a workshop on risk management for aerospace, what questions can you ask the presenter?”



Thank you for your time and attention.  
Contact us for a free current state analysis:  
[SHAWN@LEANQA.COM](mailto:SHAWN@LEANQA.COM)



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