

Company XYZ

Risk Analysis Model

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Risk Levels

- Macro Risks – large scale risk management
 - Operational Risk, Market Risk, Credit Risk, Insurance Risk
- Micro Risks - sub-categories within the operational framework
 - Internal/External fraud, employment practices, clients, products, etc.
- Governance of such risks and elements will establish a framework for understanding such risks and managing the affect they have on the overall success of business practices

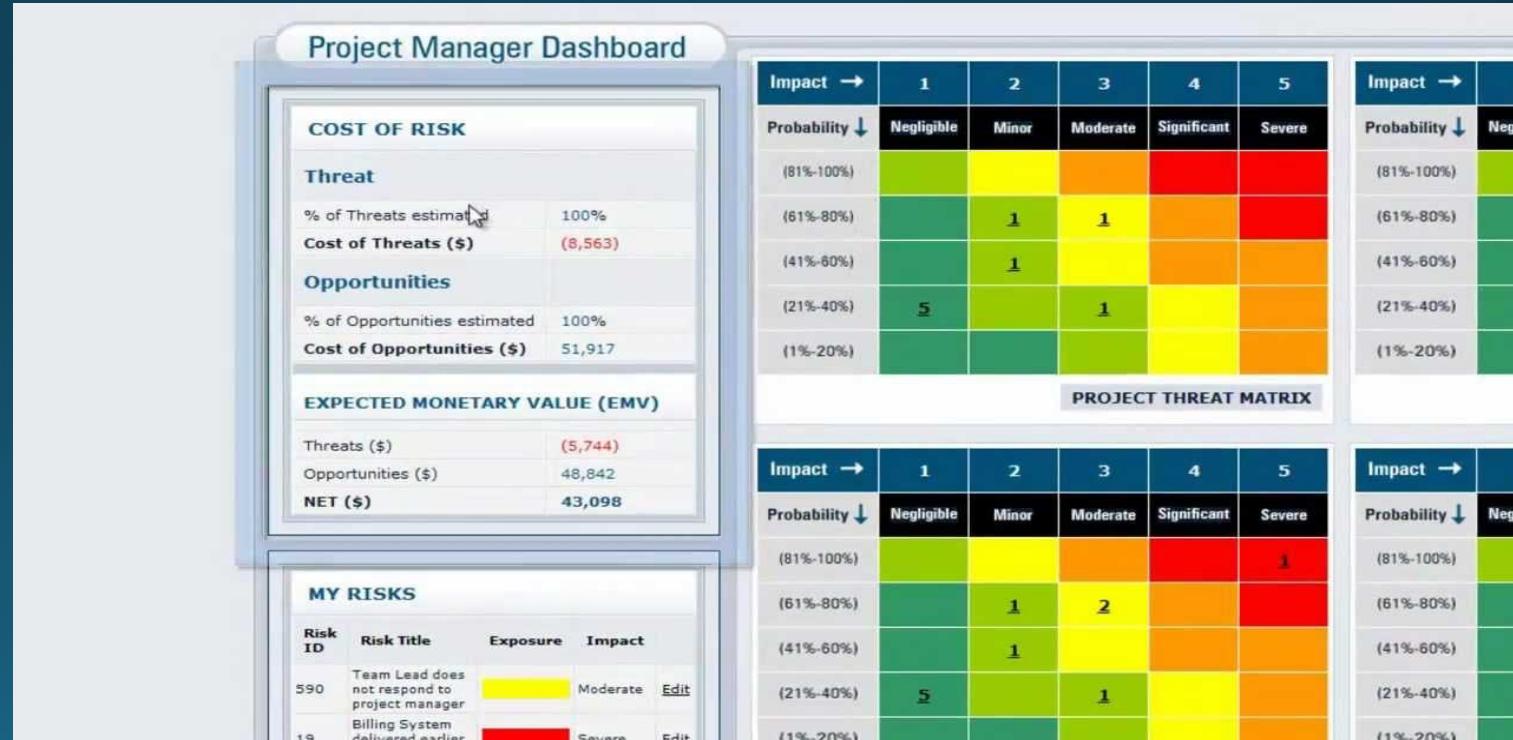
Risk Severity

- Identifying and categorizing the severity of risks helps an organization understand areas of vulnerability and the impact of such vulnerability

		RISK ASSESSMENT MATRIX			
		Catastrophic (1)	Critical (2)	Marginal (3)	Negligible (4)
PROBABILITY	Catastrophic (1)	High	High	Serious	Medium
	Probable (B)	High	High	Serious	Medium
Occasional (C)	High	Serious	Medium	Low	
Remote (D)	Serious	Medium	Medium	Low	
Improbable (E)	Medium	Medium	Medium	Low	
Eliminated (F)	Eliminated				

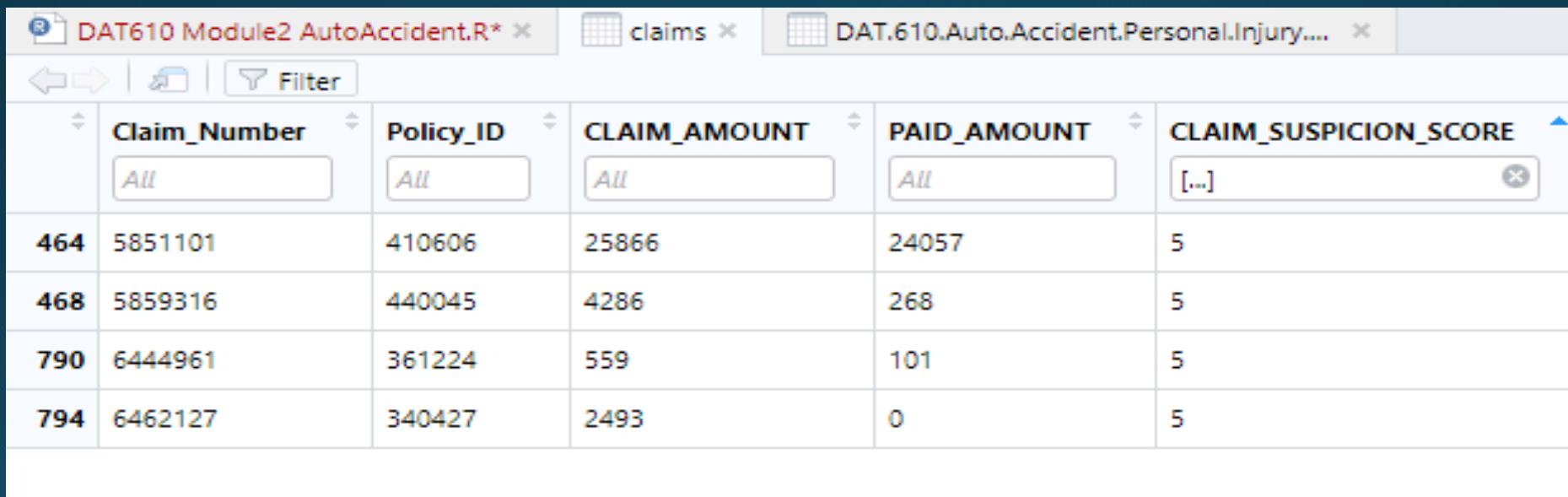
Identifying Risks & Assessing Value

- Areas of vulnerability have an associated cost value, which can be quantified and coupled with a risk severity rating
- Understanding the weight of such cost value can improve the measures taken to protect the asset from being compromised by risk events



Micro Risks

- External Fraud & Execution, Delivery and Management Risks

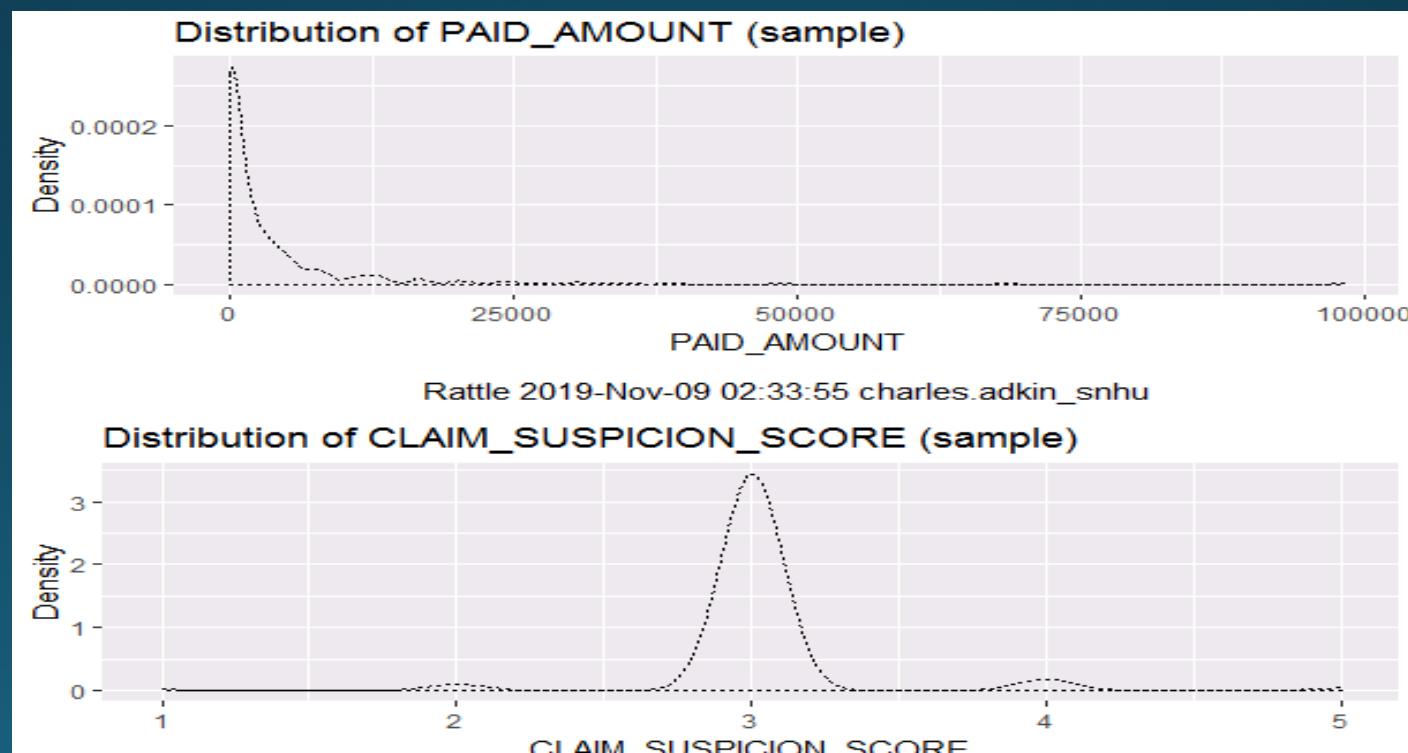


The screenshot shows a data visualization interface with three tabs at the top: 'DAT610 Module2 AutoAccident.R*' (highlighted in red), 'claims' (highlighted in blue), and 'DAT.610.Auto.Accident.Personal.Injury....'. Below the tabs is a toolbar with icons for back, forward, refresh, and filter. The main area is a table with the following columns: Claim_Number, Policy_ID, CLAIM_AMOUNT, PAID_AMOUNT, and CLAIM_SUSPICION_SCORE. The table contains four rows of data:

	Claim_Number	Policy_ID	CLAIM_AMOUNT	PAID_AMOUNT	CLAIM_SUSPICION_SCORE
	All	All	All	All	[...]
464	5851101	410606	25866	24057	5
468	5859316	440045	4286	268	5
790	6444961	361224	559	101	5
794	6462127	340427	2493	0	5

Analytical Techniques

- Characterizing attributes of a data set will offer a glimpse into its behavior and will display how observations of data values relate to one another which contribute to trends

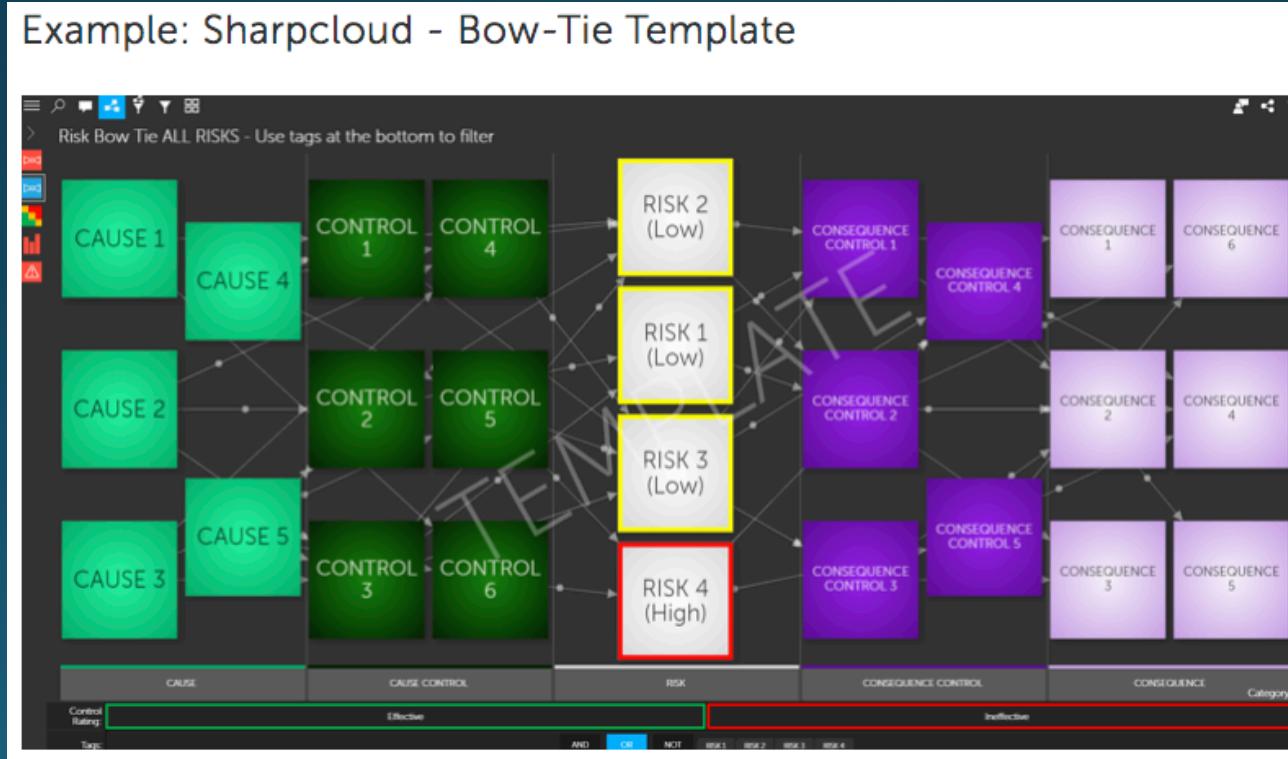


Risk Management Strategies

- Data organization and consolidation leads to more accurate identification and the control of risks
- Analysis of data assets uncovers trends and identifies the relationships between internal variables
- Scenario Analysis, KRIs and Measurement & Modeling techniques

Scenario Analysis

- Scenario Analysis allows for identifying plausible events, simulating and estimating the impacts and planning for the worst case



Decision Trees

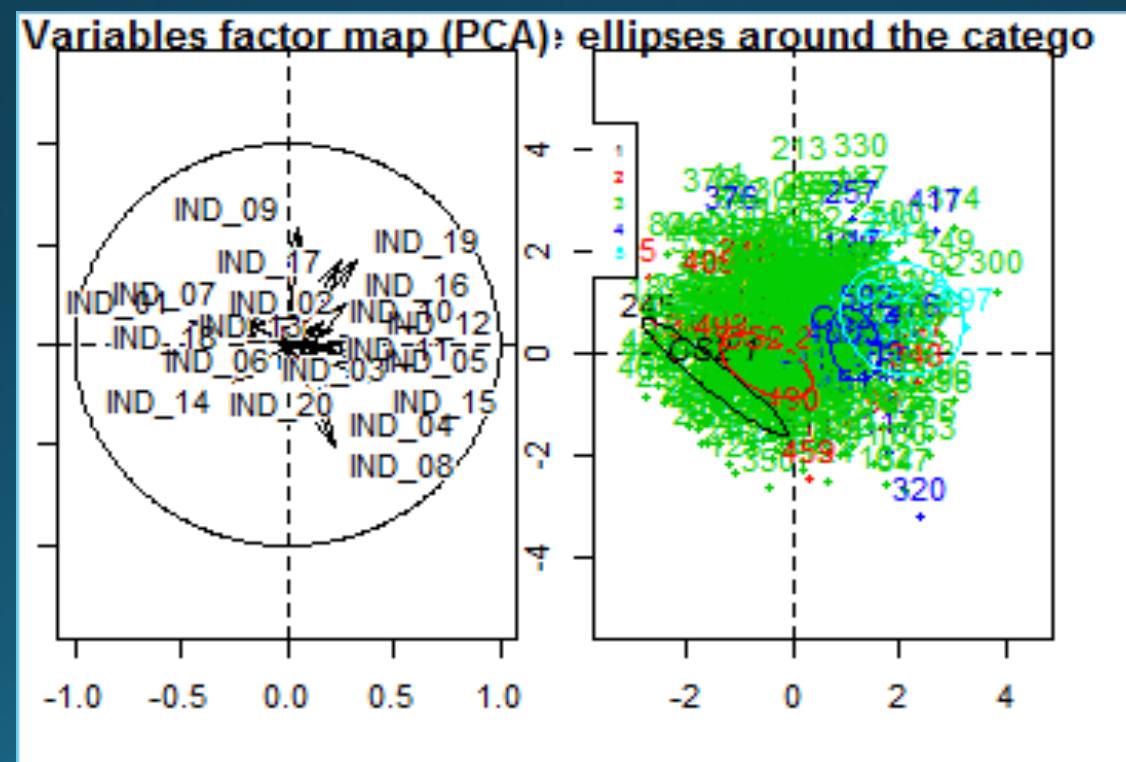


Key Risk Indicators

- Changes in business environments = changes in risk management
- Influential factors will fluctuate as the collection of data grows and the relationships between the data values broaden

Principal Component Analysis

- PCA – Principal Component Analysis
 - Identifies variables that are unrelated to the scope of the business focus and identifies variables that are most influential on business outcomes



Measurement & Modeling

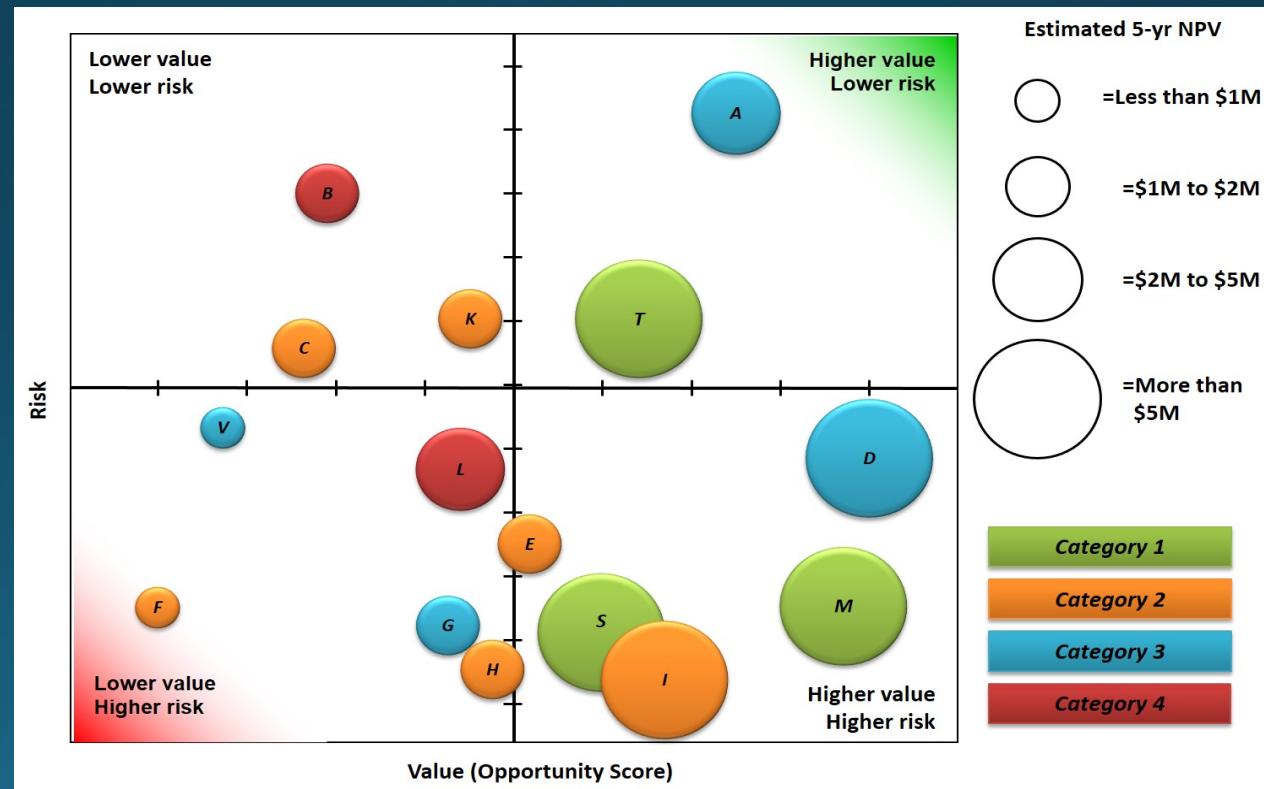
- Operational losses and their associated risks are:
 - identified,
 - analyzed,
 - managed and,
 - avoided
- to ensure the organization does not lose capital value
- In the event that losses do occur, the organization should understand the value of monetary reserves required to withstand such loss

Capital Modeling

- Advanced Modeling Approach (AMA)
 - 99.9% confidence level of capital coverage
- Simulate long-term projections
 - Monte Carlo Simulation

Visualizations

- Visualizations provide a graphical representation of tabular and/or planar data, developing the behavior of the data into a traversable image
 - Prioritizing
 - Highlighting
 - Relativity



Recommendation

- SAS OpRisk
 - Risk identification and management
 - Statistical analysis
 - KRIs
 - Risk value
 - Modeling
 - Visualizations



The image shows a screenshot of a web page for the SAS OpRisk Solution. The header features the SAS logo and the tagline "The Power to Know." on the left, and "SAS 9" on the right. The main content area has a yellow background and displays the title "SAS ® OpRisk Solution" in large blue text. Below the title, there are three bullet points, each preceded by a square bullet and bold text: "SAS ® OpRisk Monitor", "SAS ® OpRisk VaR", and "SAS ® OpRisk Global Data". Each of these sections contains a bulleted list of features or benefits. At the bottom of the page, a small copyright notice reads "Copyright © 2005, SAS Institute Inc. All rights reserved." and the number "5" is in the bottom right corner.

SAS ® OpRisk Solution

- **SAS ® OpRisk Monitor**
 - Web-based system for collecting, storing, analyzing, tracking and reporting information about: operational loss events, key risk/performance/scale indicators, risk-assessment results, and control assessment scores.
- **SAS ® OpRisk VaR**
 - An application that integrates risk indicators and control assessment scorecard results for dynamic modeling of operational VaR
- **SAS ® OpRisk Global Data**
 - SAS OpRisk Global Data is the world's largest, most comprehensive, and most accurate repository of information on publicly reported operational losses in excess of US\$1 million.

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Conclusion

- Enterprise Risk Management = more efficient business processes
 - Analytics
 - Data optimization
 - Risk identification
 - Modeling
 - Dynamic visualizations
 - Data-driven decision making
 - Operational loss prevention