

# Harness the Power of Digital

## Strategies to Transform Your HSE & Sustainability Program



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6-7 September 2022

6 September, 2022



Benchmark ESG Reporting...



Benchmark Risk+Compliance...



Benchmark Sustainability...



Benchmark Stewardship...

**Benchmark ESG™** Investment-grade ESG metrics reporting & operational performance...





# Agenda

- The ESG Challenge – ***Global & Middle East***
- **Digital Technologies as an Enabler**
- **Benchmark Advanced Technologies**
- ***Benchmark AI, ML, & Advanced Tech in Action***
- 5 Key Advanced Tech **Takeaways & Success Stories!**
- Q&A



## The ESG Challenge...

- Translating Environmental, Social & Governance (ESG) values and commitments into sustainable business performance and measurable results requires an organization to **align and deliver operationally** across the enterprise.

## Our Commitment to ESG...

- For over **two decades**, we have helped organizations **digitally operationalize and deliver** on their commitments to the environment, their community, and the health & well-being of their people.

## We are the Benchmark for best-practice digital transformation software and tech:

- ❖ Enterprise-wide **stakeholder engagement** at the operational level
- ❖ Complementary, **integrated solutions** for functional business workflows and holistic ESG management, from **environmental, safety, sustainability, risk & quality to product stewardship and responsible sourcing**
- ❖ Trusted partnerships for **collaborative innovation**, and rapid & sustained business value



Best-in-class, cloud-based ESG digital transformation software solution platforms for operational risk, compliance, and sustainable business management systems!

### ■ Comprehensive Solutions Suite

- Built on best-practice workflows and integrated with the latest tech innovations

### ■ Cloud-Based, Single Version Software

- Readily configured & launched typically in <3 months with continuous evolution – never obsolete!

### ■ Streamlined Collaboration Platform

- Supporting 350+ global subscribers
- 3M+ users across 35 industries and in 30+ languages – no user licenses!
- #1 in Customer Service (Capterra)

### ■ Engaging & Empowering Stakeholders

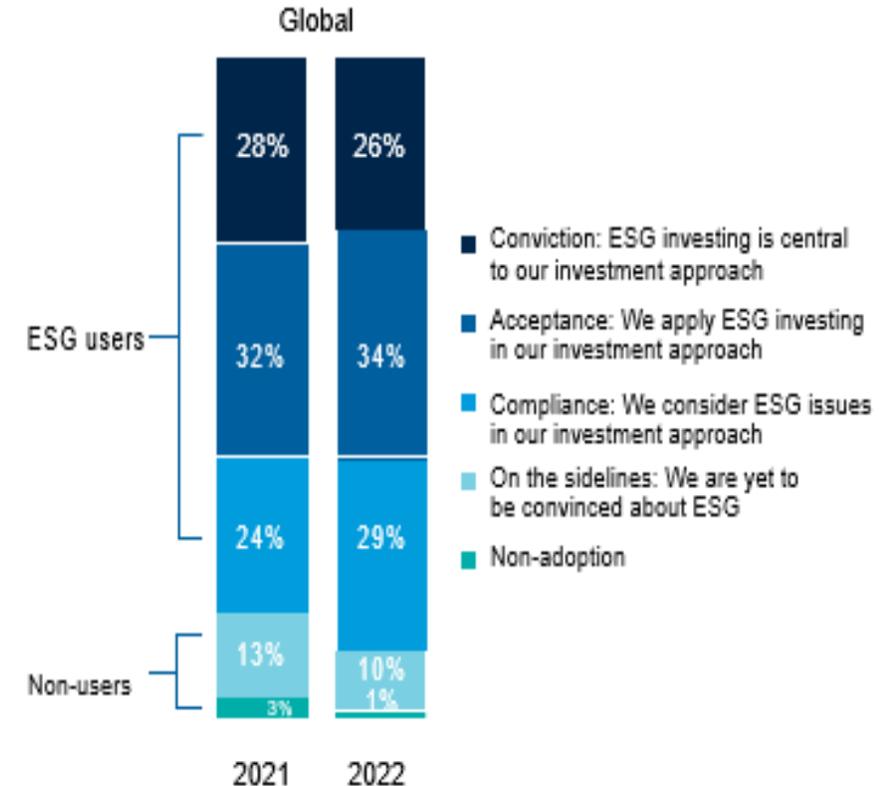
- Real-time analytics & dashboards Cross-subscriber collaboration
- Global support in 14 countries
- 92% retention rate since 2015



# The Global State of ESG & Sustainability!

- Global ESG Assets to **surpass \$41 trillion** by 2022 (Bloomberg Intelligence, 2022)
- France – AMF market regulator calls for **stricter regulation of ESG ratings**, services, & data across Europe ( 2021)
- World’s largest companies work to net-zero, **pressure on suppliers to adopt net-zero increases** (MSCI, 2021)
- At least **34 regulatory bodies** & **standard setters in 12 markets** worldwide
- **91%** percent of banks monitor ESG, along with **24** global credit rating agencies, **71%** of fixed income investors and over **90%** of insurers (Gartner, 2022)
- SEC-proposed rule to **curb greenwashing** (2022)

## Investor Sentiment



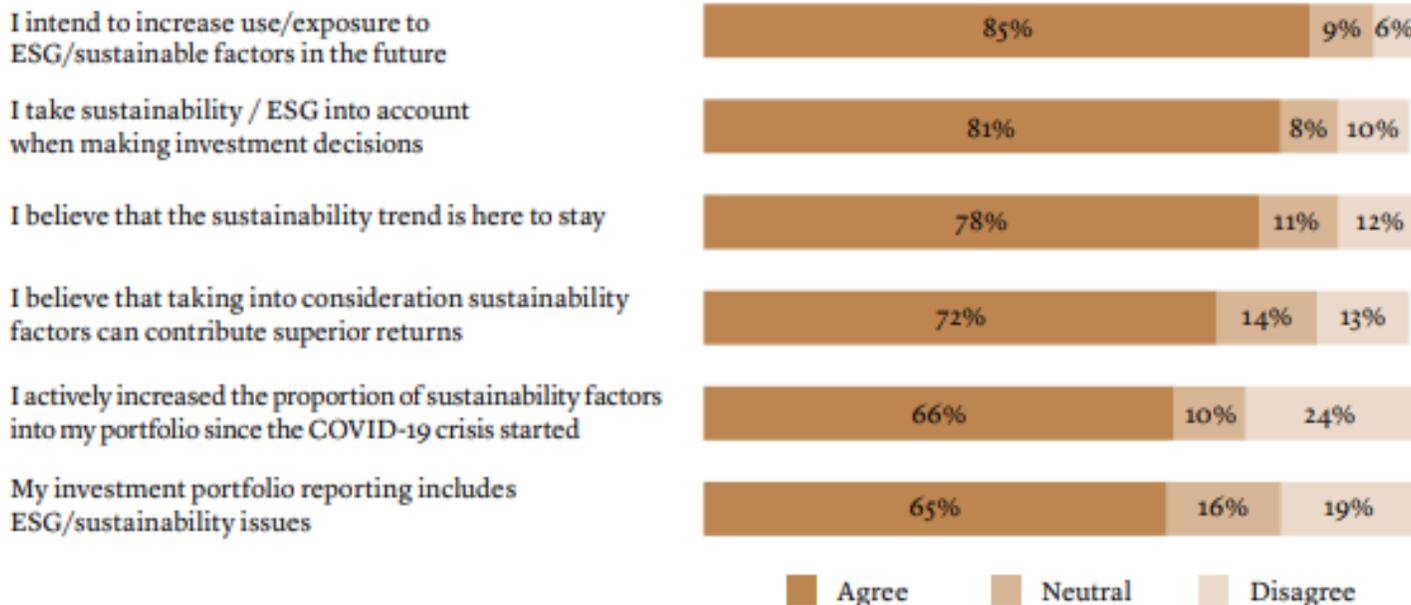
Capital Group, 2022

**84% of global respondents consider ESG in their investment approach**

# Sustainability as a Strategic Priority in the Middle East Region

- **UAE** - Public joint stock companies listed on the Abu Dhabi Securities Exchange (ADX) or the Dubai Financial Market (DFM) in the UAE (Listed PJSCs) must publish a sustainability report in line with GRI (2020)
- **Bahrain** Brouse (BHB) issues Environmental Social & Governance (ESG) reporting guidelines for listed companies in alignment with SSE, GRI (2020)
- **KSA**- Launch of ESG Disclosure Guidelines (Saudi Exchange, 2021)
- **Kuwait** - Corporate Sustainability Disclosure Guide (Boursa Kuwait, 2017)
- **Qatar** Stock Exchange (ESG Reporting Guidance)
- Demand for **Sustainability & Islamic investments** are high and overlap in the Middle-East (Lombard Odier, 2022)

## Investors on adding ESG/sustainability factors to investing



To what extent do you agree or disagree with the following statements? Data may not add up to 100% due to rounding

81% Regional High Net Worth Investors take sustainability and ESG into account when making ESG decisions (Lombard Odier, 2022)



# HSE Emerges as Organizations' Sustainability Hero!

The health and safety of our employees is also paramount to our organisation and we commit to continually improve their standards.

## Environment



### Environmental Management System

SWRO plant location along the western side of the Gulf of Suez required an intense system to be in place due to the fact that the plant is being design to be environmentally compatible with the highest international Standards.

### Environmental & Social Impact Assessment

Prior to any construction activities, studies are carried out to asses key environmental aspects such as near-shore marine ecological systems, flash floods, soil heterogeneity, and the relatively rough terrain.



With the support of the global HSSEQ team, we are installing an integrated and digitalised Environment Management System across Averda. This will help us be more rigorous and consistent in the monitoring of our environmental impacts, allowing us to benchmark against competitors, and also to set ambitious targets and track our rates of improvement.



Training employees to operate to the highest standards of safety and excellence is a major focus of the HSSEQ team. The principal instruction method for training our frontline staff is through 'toolbox talks' which are delivered in person to small groups of employees, supported by presentations.

## ISO 45001:2018

- Jebel Ali smelting and casting
- Al Taweelah smelting and casting

Environmental management systems and performance standards



### Aluminium Stewardship Initiative

- Al Taweelah smelting and casting

### ISO 14001:2015

- Jebel Ali smelting and casting
- Al Taweelah smelting and casting



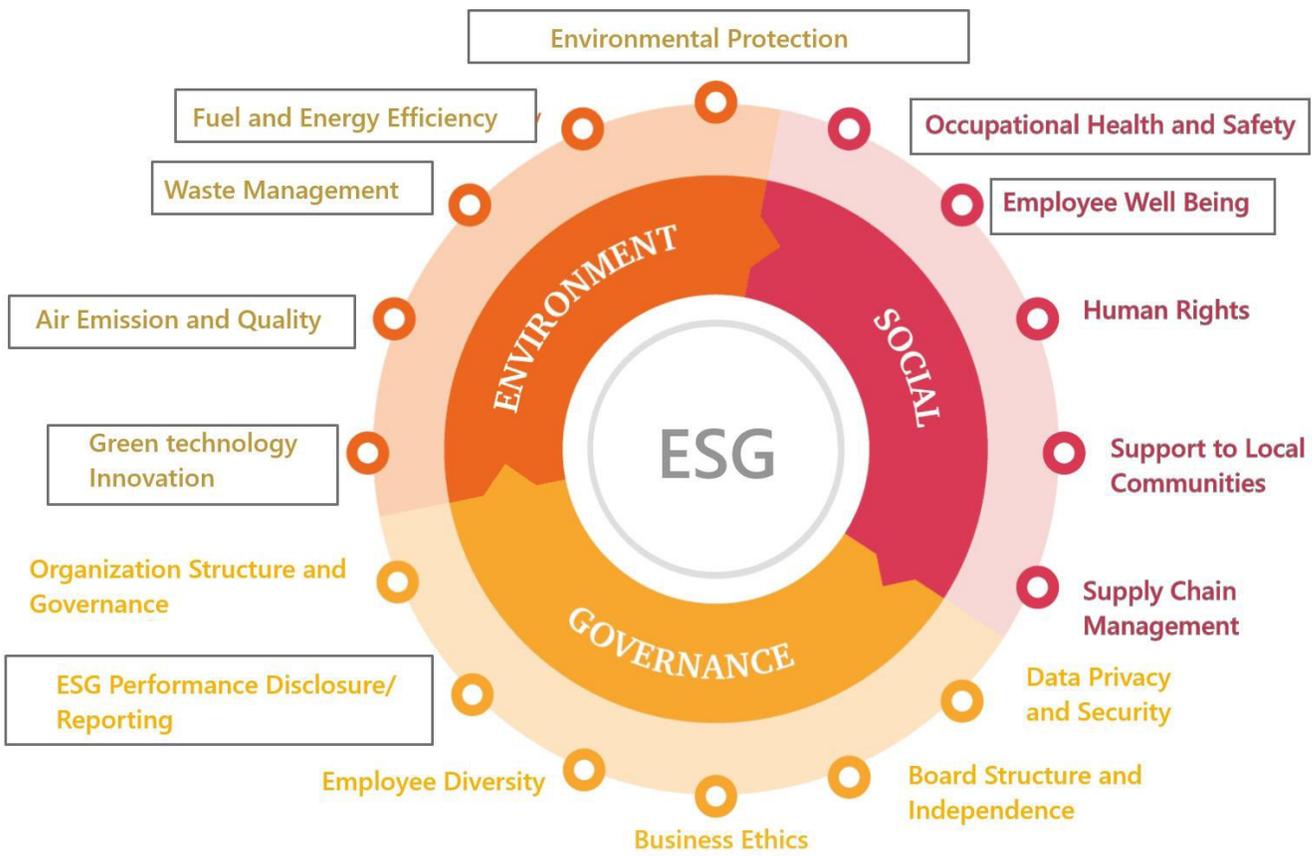
## Leveraging technology to drive sustainable performance



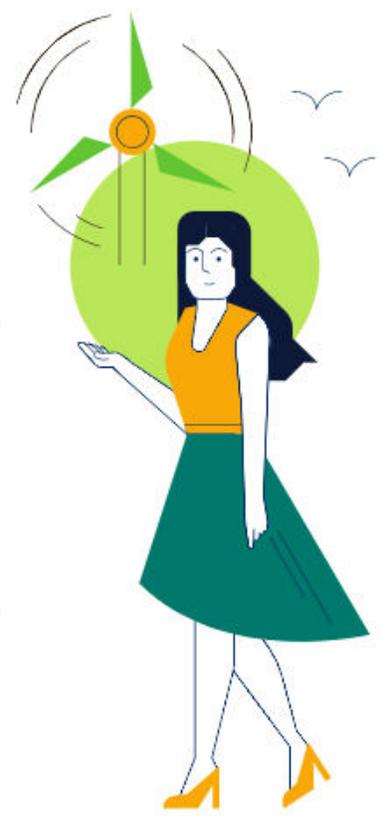
ADNOC Distribution's governance structure places the onus on leadership to manage and execute all environmental agendas and plans. As per the Delegation of Authority HSE department is tasked with implementing, tracking, and reporting all ecological initiatives.



# HSE KPIs: Integral to Sustainability & ESG



Areas of importance to potential investors on a scale of 1 (not at all important) to 10 (extremely important)



**+70% Sustainability & ESG KPIs driven by HSE performance & priorities**



# Digital as an Enabler in Meeting Your HSE & ESG Needs

Benchmark offers cloud-based, best practice driven management system solutions that are **affordable**, **scalable**, and **fast-to-deploy** with **immediate ROI**.



Increased Compliance & Proactive Risk Management



Global Visibility to Performance



Data Integrity



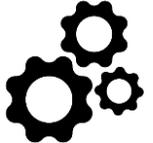
Process Efficiency & Productivity



Best Practice Sharing & Employee Engagement



Data Analytics & Trending



Operations Decision-Making Support

## Engage Leadership:

*“We recently had our board of directors meeting, and all of our outputs were from Benchmark ESG”*

- Director of Global Environment

- Standardize & Centralize ESG Processes
- Drive Operational Excellence
- Ensure Compliance Globally Minimize Risk
- Avoid Penalties
- Manage Change
- Identify Emerging Trends
- Enhance Productivity



# Top 4 Digital HSE Needs

## 1. ESG & Sustainability Reporting Software

More than 70% ESG & Sustainability KPIs are driven by HSE performance & priorities. With ESG and sustainability reporting demands from governments and investors, HSE professionals can leverage their health & safety and environment management systems to meet ESG needs.

## 2. Incident Management Software

With HSE professionals aiming to seamlessly manage workplace incidents at scale, they've recognized the power of digital in having automated and standardized workflows, seamless connectivity among teams, and powerful workflows.

## 3. Audits & Compliance Software

From coordinating audits to assigning teams, and collecting data to share with one another, HSE professionals are looking for a digital auditing solution that can connect audit teams, streamlining the auditing process and saving valuable time.

## 4. Competency Training Software

HSE program leaders are looking for a robust digital tool that provides the structure for training assignments, session scheduling, completion/qualification tracking, and reporting—making it easy to manage employee training, even as they scale.



# Roadmap – HSE Digital Transformation

## Stage 1

### Define

- 1 Secure Management Commitment to go Digital...make your Business Case
- 2 Set clear, ambitious targets...programs to be digitized, timelines etc.
- 3 Secure Digitization Budget for the year

## Stage 2

### Launch

- 4 Start with lighthouse projects, modules, business location
- 5 Appoint a cross functional launch team – EHS, IT, Operations etc.
- 6 Organize to promote new, agile ways of working
- 7 Nurture a digital culture

## Stage 3

### Scale Up

- 8 Review feedback & sequence digitization milestones, start with higher ROI
- 9 Build capabilities, imbibe digitalization in the organization DNA
- 10 Adopt Digital EHS as the operating model

**Think big, start small, and demonstrate value...**



# Benchmark ESG® Subscriber Stories: Operational Solutions



## Risk + Compliance

### Objectives

- Integrated system to develop a centralized global collection of data from across the regions for monitoring Quality, Health, Safety, Sustainability and Environment
- Instant and easy access for Executive Management Team to review QHSSE Performance on Corporate Level
- Reducing time spent on administrative tasks (manual entry) to increase time on practical solutions, research, & communication with other departments

### Digital Strategy

- Engaging key users & QHSSE managers in understanding the benefits of digital HSE management
- Training key users to understand and propagate digital HSE solutions to QHSSE teams, new visitors, customers, and clients at site

### Highlights

- Seamless monitoring of QHSSE performance Business Units for ISO 9001, ISO 14001, and ISO 45001 compliance
- Data mining and analysis to identify strengths and weaknesses in the QHSSE System



## Risk + Compliance

### Objectives

- Improve safety culture by leveraging on health and safety data management
- Efficiently manage data including leading & lagging indicators

### Digital Strategy

- Develop a platform to standardize the record baseline HSE data
- Develop real time reporting tools
- Integration with other Business Applications
- Add new workstreams into the platform including Health management, Sustainability Management, ESG

### Highlights

- Implementation complete for 8 Countries where AVERDA Operates
- Adopted as Tool for Management Meetings & Reviews
- Performance improvement
- Foundation for Further Integration

## Risk, Safety, Occ Health & Environmental

- ▶ SAFETY MANAGEMENT
- ▶ OCCUPATIONAL HEALTH MANAGEMENT
- ▶ ENVIRONMENTAL MANAGEMENT
- ▶ RISK MANAGEMENT SYSTEMS & ISO PROGRAMS

## Risk Controls

- ▶ ACTION / OBLIGATION MANAGEMENT
- ▶ AUDIT & INSPECTION MANAGEMENT
- ▶ INCIDENT MANAGEMENT
- ▶ TRAINING/COMPETENCY MANAGEMENT

## Focused Programs

- ▶ CHEMICAL & HAZMAT MANAGEMENT
- ▶ CONTRACTOR MANAGEMENT
- ▶ PERMIT MANAGEMENT
- ▶ PROCESS SAFETY MANAGEMENT

## Operational Programs

- ▶ QUALITY PROGRAM MANAGEMENT
- ▶ SECURITY PROGRAM MANAGEMENT
- ▶ EQUIPMENT RELIABILITY & COMPLIANCE

### ACTION / OBLIGATION

- ✔ Action Tracking System
- 📅 Compliance Calendar

### AUDIT / INSPECTION

- 📋 Inspection Tool
- 🔍 Audit Assistant
- 📅 Audit Planner
- 🔍 Reg Auditor

- 📄 Reg Tracker

### HEALTH & SAFETY

- 🧠 Safety Risk Assessment (ISA)
- 👤 PPE Manager
- 👁️ Safety Observations
- 🗣️ Safety Dialogue
- 🔒 Lockout Tagout
- 👤 Permit to Work
- 🪑 Ergo Solutions

### OCCUPATIONAL HEALTH

- 🩺 Med Care
- 🌿 Industrial Hygiene

- 📊 Dashboards & Analytics Powered by DWH | Tableau®

### INCIDENTS

- 📊 Incidents Management
- 👥 Concern Reporting

### TRAINING

- 🎓 My LMS
- 📅 Training Tracker

### ENVIRONMENTAL

- 📄 Permit Manager
- ☁️ AirLog
- 💧 Water Watch
- ♻️ Waste Tracker
- 🚧 ODS Sentinel (CFC)

### CHEMICAL & HAZMAT

- 📄 SDS System
- 📦 Dangerous Goods Shipper

### PLATFORM

- 🍏 📱 Mobile App for iOS & Android

### RISK & PROGRAMS

- 🚨 Risk Registry
- 👤 MOC Manager
- 📅 Mgmt Systems Scorecard
- 👤 Contractor Manager
- 👤 Profiler
- 📄 Doc Manager
- 🎯 Forms
- 📊 Ops Metrics
- 🔍 PHA Manager

### QUALITY

- 📄 Quality Escapes Reporting
- 📧 Quality Concern Reporting
- 🔄 Continuous Improvement

### EQUIPMENT MANAGEMENT

- 🔧 Equipment Tracker
- 👤 Maintenance Manager

### SECURITY

- 📄 Security Concern Reporting
- 📄 Security Incident Reporting

- 🗣️ Virtual Assistant: Ask Genny! Included standard with every subscription

*Managing and improving operational sustainability requires cross-functional engagement, transparency, and insights from across the enterprise. With our Sustainability solutions suite, corporate and functional leaders can compile investment-grade ESG data, drive action on projects, and deliver on ESG & sustainability commitments.*

## Meet the Growing Demand for Sustainability Data, Action & Results

- Track and analyze sustainability performance
- Identify decarbonization initiatives
- Monitor progress toward Net Zero Carbon targets
- Document & allocate offsets (Renewable Energy Credits & Carbon Credits)
- Manage GHG Emissions, including Scope 3 metrics for supply chain sustainability
- Forecast progress on sustainability targets

### SUSTAINABILITY PERFORMANCE REPORTING

-  Sustainability Reporting
-  Incidents & Metrics

### ESG REPORTING & ENGAGEMENT

-  Sustainability Reporting
-  Materiality Advisor
-  ESG Director™

### SUSTAINABILITY IMPROVEMENT PROGRAMS

-  Sustainability Projects
-  Sustainability Prospector
-  Compliance Calendar
-  Sustainability Scorecard

### PLATFORM

-  Mapper
-  Business Reporter
-  Instant Insights
-  Dashboards & Analytics  
Powered by DWH | Tableau®
-  Mobile App for iOS & Android
-  Virtual Assistant: *Ask Genny!*
-  U Connect: In-App Collaboration
-  Help Me!
-  Utilization Index
-  User & System Mgmt

*Included standard with every subscription*



# Benchmark Stewardship®

*Ensuring global product compliance, smarter product design, supplier responsibility performance, and supply chain continuity demands cross-functional collaboration and effective supplier engagement. With our Stewardship solutions suite, organizations and cross-functional teams can satisfy global demands for product compliance, transparency and responsible sourcing.*

## Stay Ahead of Supplier and Product Risks for A Sustainable Supply Chain

- Ensure product compliance with global regulations and standards
- Connect with suppliers directly via an award-winning supplier portal for ESG & sustainability data
- Deliver stakeholder value and inform decision making with automated insights
- Manage change effectively through systems integration and included regulatory monitoring

### PRODUCT STEWARDSHIP

Product Steward

Compliance Calendar

Reg Tracker

### RESPONSIBLE SOURCING

Supplier Manager

Profile

Survey Engine

### SUPPLIER AUDIT & RISK MANAGEMENT

Supplier Auditor

Audit Planner

Audit Assistant

Inspection Tool

Action Tracking System  
 Compliance Calendar

### PLATFORM

Mapper

Business Reporter

Instant Insights

Dashboards & Analytics  
Powered by DWH | Tableau®

Mobile App for iOS & Android

Virtual Assistant: *Ask Genny!*

U Connect: In-App Collaboration

Help Me!

Utilization Index

User & System Mgmt

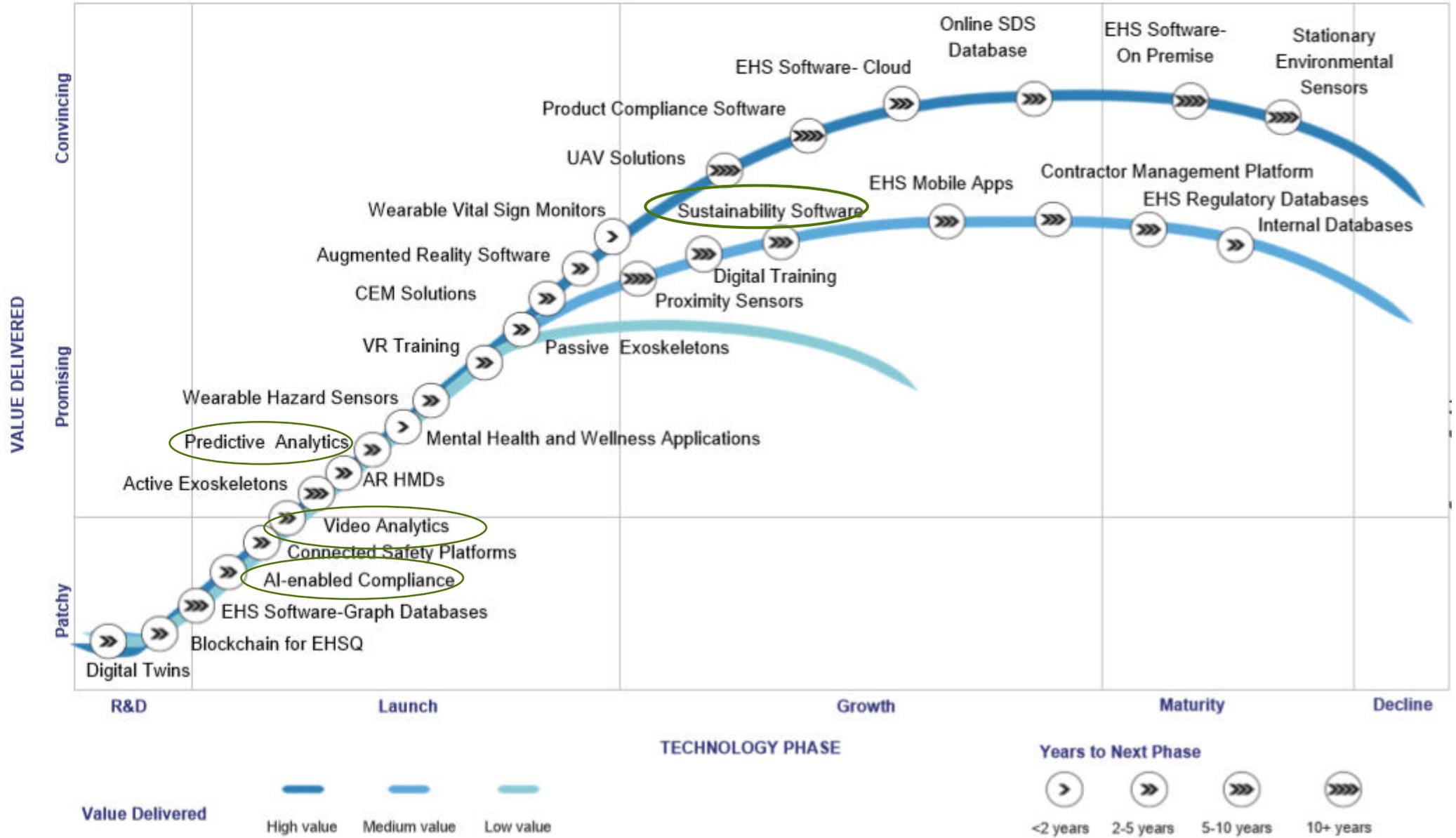
*Included standard with every subscription*



# Adopt Advanced Tech to Optimize Your HSE Program



# Roadmap for HSE Technologies (2021)



# Benchmark AI Advisors ... A Tech Tour!

## Describe-It AI Advisor

**Injury/Illness Details**

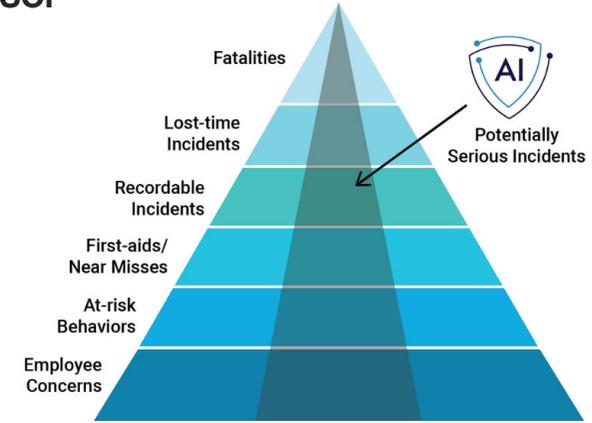
**Injury/Illness Description (F)**

Employee was walking in the aisleway near the shelving row B in the warehouse which is the darkest aisleway in the shop. He was carrying a large box which knocked the hard hat off the employee's head. The employee bent down behind the box to pick up his helmet and a forklift came around the corner. The forklift driver was going approximately 15 MPH and did not see the employee right away. Once the driver noticed the employee as he stood up, the driver veered the forklift into the shelving unit. The forklift driver cut his arm on the cage of the forklift upon the collision and did not seek medical attention.

**AI** Strong Description  
✓✓✓✓✓✓  
Great description!

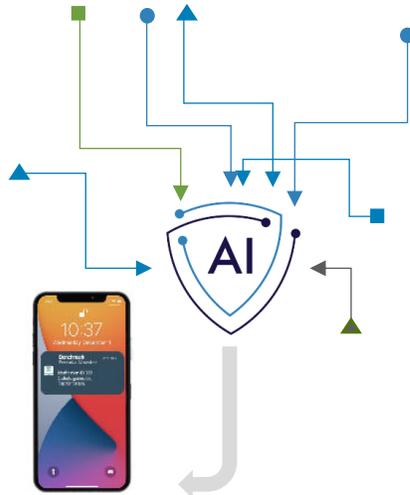
*Assess Description Quality, Provide Real-Time Feedback*

## PSI AI Advisor



*Identify Potentially Serious Incidents and Underlying Risks*

## Executive AI Advisor



*Monitor, Flag Alerts & Spot Trends in Real-Time*

## Quality AI Advisor



*Automate Categorization of Quality Concern Reports*



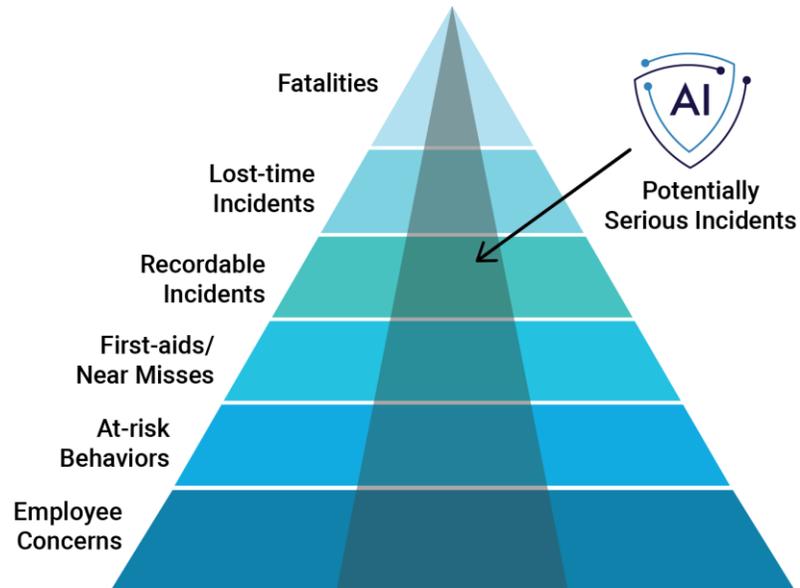


# Benchmark PSI AI Advisor



# Consistently Classify Potentially Serious Incidents (PSI)

*Identify critical risks for focused corrective and preventative actions, safety measures, risk mitigation, and awareness!*



Benchmark's PSI AI Advisor analyzes various data sets including: Injury & Illness Cases, Events, Concern Reports, and Behavior-Based Safety Observations.

- Quickly and consistently identify Potentially Serious Incidents
- Focus on addressing operational & systemic issues that have the highest potential to lead to Serious Injuries and Fatalities
- Leverage workplace serious injury & fatality reports to uncover new risks
- Greater insights to focus on areas with the highest potential consequences

Leverage Benchmark Data Ocean™ of 68,000+ publicly available injury and fatality records to identify *PSI Probability, Operational Risk Category and a Similar Serious Incident Report*





# Integrated PSI Identification within the Incident Management Workflow



## Available to advise all authorized users as a part of

- Gain insights from PSI AI Advisor knowledge base of 68,000+ publicly available records
- User can consider recommendations from PSI AI Advisor in the incident management workflow
- Users can select a determination using manual drop down menu
- AI processes results in the background upon record submission
- Results available on Data Mining and Tableau Reports

**Injury/Illness Details**

**Injury/Illness Description (F) \*** ⓘ  
Employee was hit by forklift when walking into the aisleway

Do not input employee's name or other personal details in the Injury/Illness Description. Do not input '\*' or '-' special characters, they will be strip out of the description.

**Illness \*** ⓘ

**Site Case #**

**OSHA Recordable? \***  
Is this case Recordable per the Benchmark ESG Demo and OSHA definition?

**Recordability Rationale?**  
Indicate why Recordable or non-Recordable

**Place of Accident or Exposure \***  
If not on company premises, please provide address or place of reference to location

**PSM Incident \***  
No

**Workers' Comp ID**  
Insert alpha-numeric ID

**Does this case meet the Escalation Policy criteria for notifications? ⓘ**

**Serious Incident & Fatality (SIF) ⓘ**

Ask PSI Advisor ⓘ

### Benchmark PSI AI Advisor™ Recommendations

✕

The Benchmark Potentially Serious Incidents (PSI) Artificial Intelligence (AI) Advisor™ analyzes descriptions, generates insights and a risk profile to show how often similar incidents, resulting in a severe injury and/or fatality, have occurred in industry. The PSI AI Advisor is trained on an industry-wide knowledge base of 68,000+ publicly available severe injury and fatality records. The PSI Advisor continues to learn and improve based on feedback provided by users.

<b>Incident Description* ⓘ</b>	Employee was hit by forklift when walking into the aisleway.	<b>PSI Classification (User-Selected)</b>	Not Selected
<b>Similar Incidents (Industry-wide Knowledge Base) ⓘ</b>	Employee was walking in an open area when a forklift weighing 26,000 pounds struck his right lower leg and rolled over the leg.	<b>PSI Recommendation ⓘ</b>	Yes
<b>Operational Risk Category ⓘ</b>	Vehicle Collision or Similar	<b>PSI Confidence Rating ⓘ</b>	85%
<b>PSI AI Advisor More Insights</b> ⤴			
<b>Severe Injury Match Count (Industry-wide Knowledge Base) ⓘ</b>	57	<b>Fatality Match Count (Industry-wide Knowledge Base) ⓘ</b>	2

Latest AI Version Results

1.0.0

Benchmark PSI AI Advisor™ (Patent Pending)

\*Benchmark Translator™ powered by Google®

**Actual**

Potential

None



# AI-Enabled Batch Historical Data Analysis



## Uncover Hidden Risks and Gain Deep Insight

- Batch analyze I&I Cases, Events, Concerns and Behavior-Based Observations
- Available to all organizations as a turnkey project service
- PSI AI Advisor analysis for PSI Classification, Confidence Rating Operational Risk Category and Similar Incidents from the Knowledge Base.

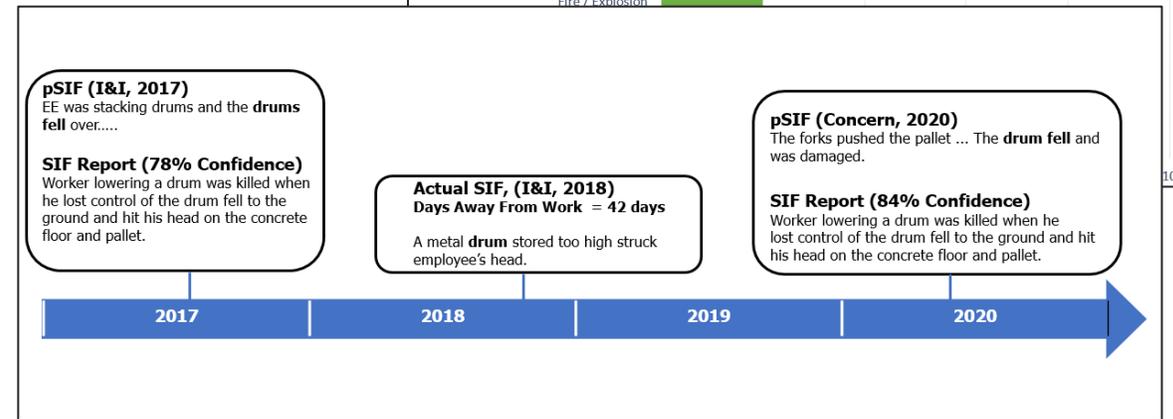
## Raw Data Extract (Excel)

Incident Description (Required)	Similar Incidents (Industry-Wide pSIF Knowledge Base)	pSIF Confidence Rating (>72% = pSIF Yes)	pSIF AI Engine Generated High Risk Activity Category
Employee suffered a contusion from standing on a pallet jack while another worker drove the pallet jack over to the shipping department	Maintenance worker received fatal injuries in electric pallet jack accident.	85%	crushed by machinery/moving objects
Employee cut their hand while using a grinding wheel, wheel needs to be replaced	Victim during a grinding operation was struck by an exploding grinding wheel.	88%	crushed by machinery/moving objects
The employee flipped a rock with forklift. While doing so, the fork from the forklift fell off. Then the employee pinched his skin when attempting to place the fork back on the forklift with his own hands. The fork slipped and fell. Causing his foot to be pinned.	Worker struck and killed by falling forklift fork.	94%	crushed by forklift or similar
The worker jumped from a piece of equipment when it shifted on the trailer and rolled his ankle but it did not result in a sprain.	Worker struck and killed by equipment that slid off trailer during loading.	85%	crushed by machinery/moving objects
While working with a hoist, the strap from the load broke and hit worker in the arm causing a welt.	Worker performing hoisting and lifting operations at a construction site died when the hoisting strap failed causing the load to fall on him.	89%	crane/boom or similar

## Operational Risk Trends



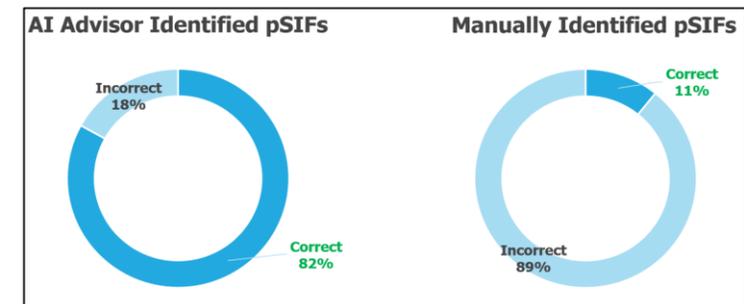
## Deep Dive Connection



## Breakdown of PSIs by Record Type

	I&I Cases		Events		Concern Reports		Total Records	
	# I&I Cases Analyzed	# I&I pSIFs Identified*	# Events Analyzed	# Event pSIFs Identified*	# Concerns Analyzed	# Concern pSIFs Identified*	# Records Analyzed	# pSIFs Identified
Total	5,336	262 pSIFs	19,075	702 pSIFs	4,022	313 pSIFs	28,433	1277 Total pSIFs

## Accuracy Test (If Applicable)



# How can I get engaged & deploy PSI AI Advisor?



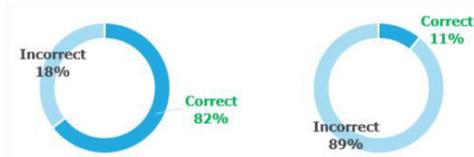
## PSI Advisor Data Analysis & Insights Reporting

- One-time data analysis project to process incident, concern, and/or safety observations data through the PSI AI Advisor AI Engine to identify potentially serious incidents (PSIs) and high-risk incident types.

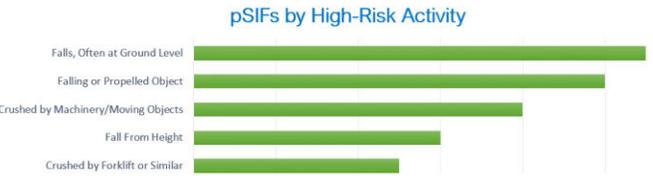
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The employee flipped a rock with forklift. While doing so, the fork from the forklift fell off. Then the employee pinched his skin when attempting to place the fork back on the forklift with his own hands. The fork slipped and fell. Causing his foot to be injured.	Worker struck and killed by falling forklift fork.	94%	crushed by forklift or similar

### Accuracy Test (If Applicable)



### Operational Risk Trends



### Deep Dive Connection



## Project Effort

- Based on data record volume being processed, can include I&I Cases, Events, Concerns, and Safety Observations data.
- Cost ranges: \$10,000 (To Process up to 10,000 records), \$15,000 (Up to 100,000 records), \$20,000 (Up to 250,000 records)

## PSI Development Consortium Workgroup

- Established a Benchmark Subscriber Consortium workgroup to develop the integration of the PSI Advisor AI Engine into Benchmark ESG | Gensuite to enable real-time insights to PSIs and operational risk incident types.

### Digital Integration Points:

I&I Cases, Events, Safety Observations, Concerns, Analytics | Tableau, and Mapper



### Contribution Request and Timing:

- Workgroup commenced in November 2020, Launched and expanded New PSI AI Advisor with enhanced capabilities October 2021. Expanding Capabilities in 2022
- \$15K per subscriber for pooled budget targeted for development and expansion of PSI AI Advisor integration into Benchmark

## Join the Team ...





# PSIs ... Applied Analytics



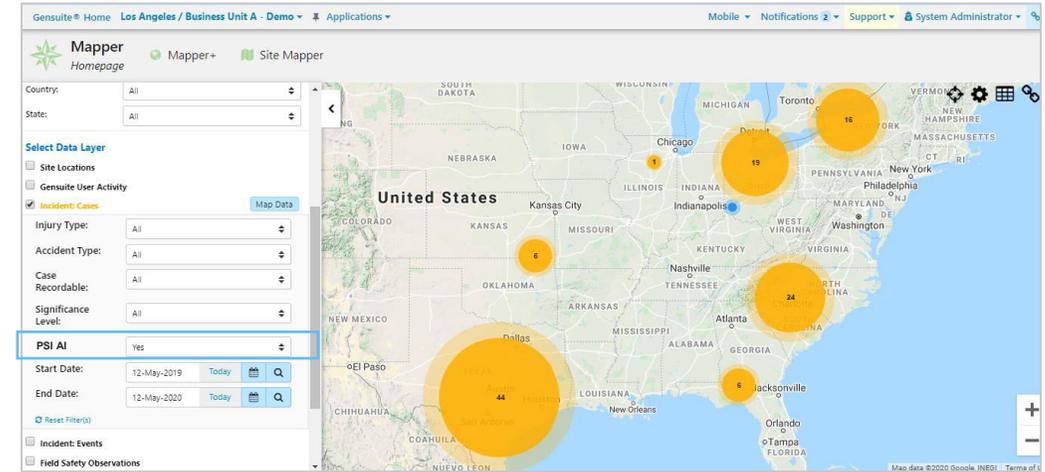
## Focus on Risks with the Highest Potential Consequences

- Review of data across Injury & Illness cases, Events, Concerns, Observations
- Identify the greatest risks to your workforce and where they occur
- Inform decision making and resource investment smartly
- Integrate into existing workflows and influence safety culture

## Data Mining

Los Angeles, 10-Apr-2020 23-Aug-2020 11-Apr-2020 8:00 PM 12-Jan-2021 12:38 PM Case#: 222 IIR ID #: 172 OSHA Recordable	Injury Recordable DAFW Lost Time Start Date: 13-Apr-2020 Lost Time End Date: 01-May-2020 No Does this case meet the Escalation Policy criteria for notifications?: Serious Incident & Fatality (SIF): Potential <a href="#">View On Map</a>	Eugene Myers Electrician [Not Defined] Manufacturing Building 1 Kade Medd	Shoulder Fracture Falls, different level Gensuite Demo facility Level C Associated Inspection: No Associated Events: No	Employee Fell Off Ladder None <a href="#">Case History</a> resulted in loss of days at work Yes (92.92% recommendation confidence rating)	Immediate Cause No Unsafe Condition No Unsafe Act Root Cause No Job Factor No Personal/Behavioral Factor Follow-up: Not Submitted Closure Verification Status: Not Required
Los Angeles, 07-Apr-2020 02-Jun-2020 07-Apr-2020 8:50 AM 02-Jun-2020 12:00 AM Case#: 214 IIR ID #: 162	Injury Non-Recordable No Lost Time Status No Does this case meet the Escalation Policy criteria for notifications?: Serious Incident & Fatality (SIF): Has case been reported to MSHA?: No Is Case OSHA Recordable?:	Piper Powell Contractor [Not Defined] Finance Building 1 Gensuite Account Contingent/Temporary Worker	Ankle Fracture Falls, different level Gensuite Demo facility Level C Associated Inspection: No Associated Events: No	Employee fell from the stairs due to wet floor None Yes (74.19% recommendation confidence rating)	Non-Specific Site Activity Not a normal part of job 6 - 12 months 6 - 12 months Immediate Cause Wet, icy, snowy road or walkway No Unsafe Act Root Cause Work environment not controlled by business No Personal/Behavioral Factor Mgmt System Applicable Preventive Maintenance

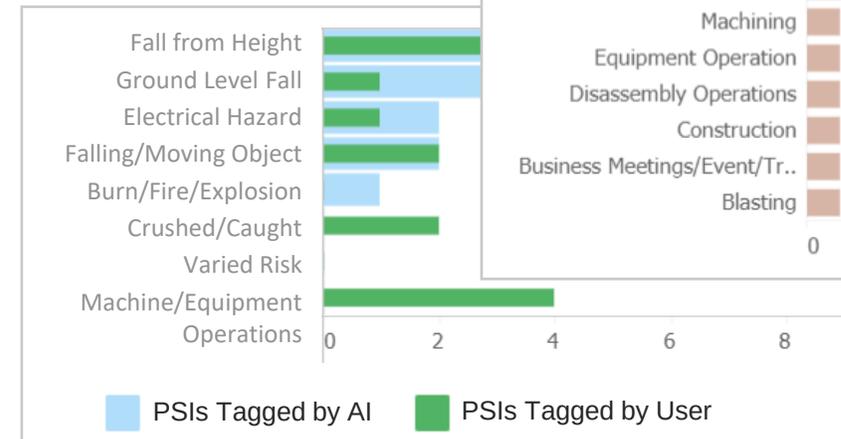
## Mapper



## PSIs by Core Activity



## User vs AI Identified PSIs by Operational Risk



And More...



# New Innovation - Executive AI Advisor

# Benchmark Safety Culture/Net Safety Score Model



## Business Need

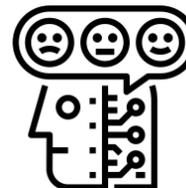
- Track & trend employee sentiment.
- Develop insights related to Safety Culture by using AI technology and identify sites/areas for improvement.

## Benchmark Solution

- Apply Benchmark Sentiment Analysis AI on various Benchmark Data Sets (e.g. Concern Reporting, I&I Cases, Observations, Inspections, etc.)
- Each analyzed free text field/data record would have sentiment result generated
- Benchmark to develop a custom Safety Culture/Net Safety Score based on datasets and feedback from the business team in inputs
- Benchmark to create roll-up aggregate results and visual reports

## Workflow Model

### Benchmark Sentiment AI



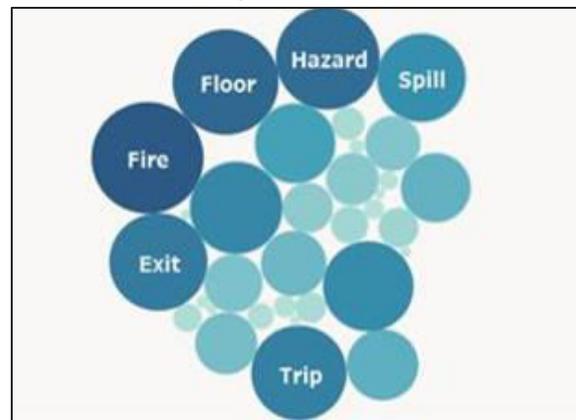
### Benchmark & External Data Sets

- Concern Reports
- I&I Case Descriptions
- Events/Near Misses
- Safety Observations
- Leadership Survey Results
- Focus Group Survey

## Benchmark Safety Culture Scoring

Model Business Unit	Concern Reports	Safety Obs	Focus Group Survey	I&I Cases	Events/Near Misses	Leadership Survey	Safety Culture Score
Site 2	60	85	80	150	105	66.875	547
Site 4	60	50	67.5	110	60	90.625	438
Site 1	80	10	80	110	60	36.25	376

## Tableau Analytic Outputs



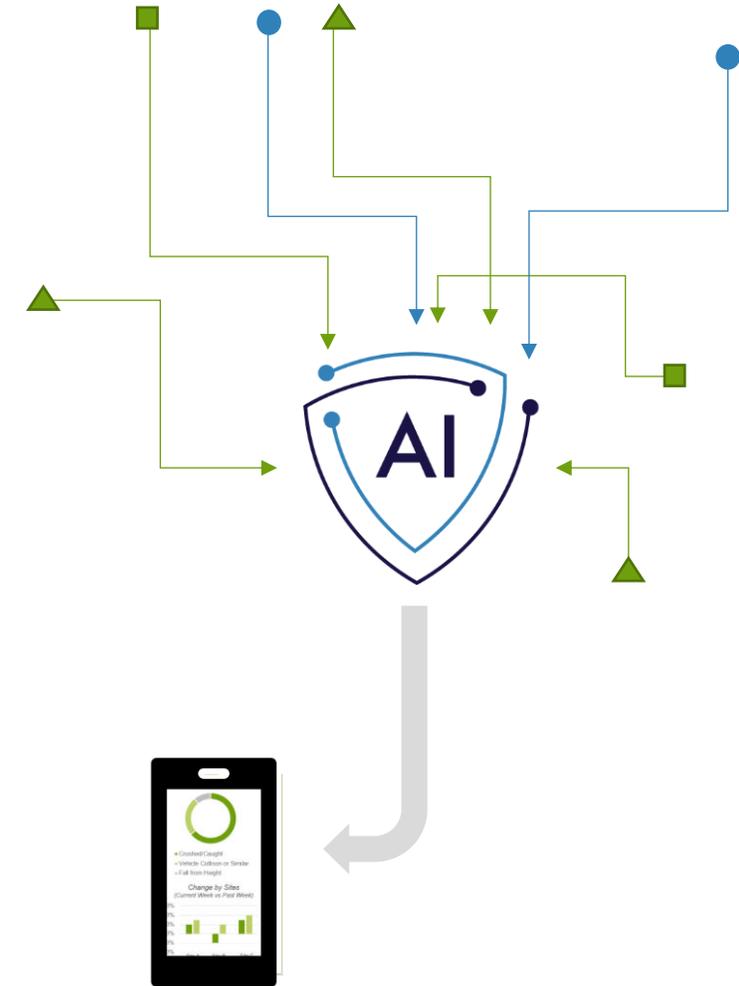
# Executive AI Advisor Concept

## Current Landscape for Executive Leadership

- Multiple enterprise-wide data streams; key data streams within Benchmark ESG platform
- Data streams expanding in transaction volume
- Limited bandwidth and constrained teams to gather, analyze and interpret data

## Opportunity for an AI to monitor and flag alerts & spot trends reflected within these data streams...an *“Executive AI Advisor”!*

- Use AI to discover patterns w/o having to examine, digest, interpret & analyze trends
- Help identify useful data for decision making that you care about, at the time you care about it
- Delineate data and findings into three parts: Real-Time Alerts, Weekly Briefings, Monthly / Quarterly Insights
- Customizable outputs for what you personally would like to investigate in more
- Engage the PSI AI Advisor Engine to bring forward information regarding items of importance/incident(s) of relevance as a starting point.
- Create a platform where businesses can build their own discrete criteria for real-time push alerts



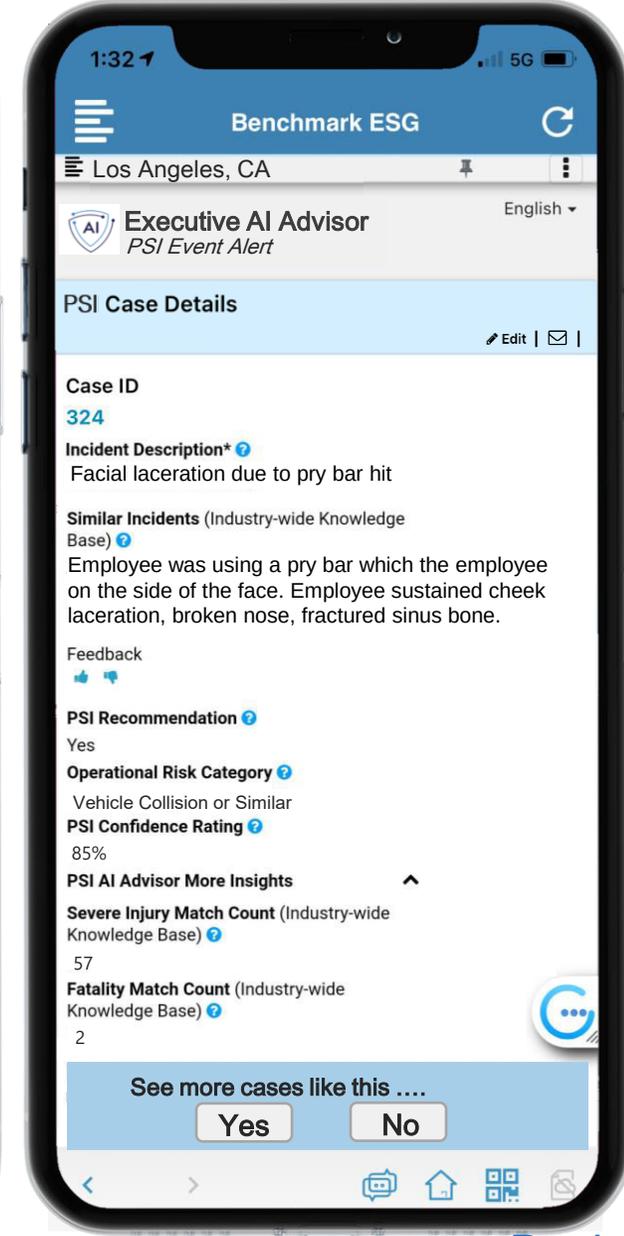
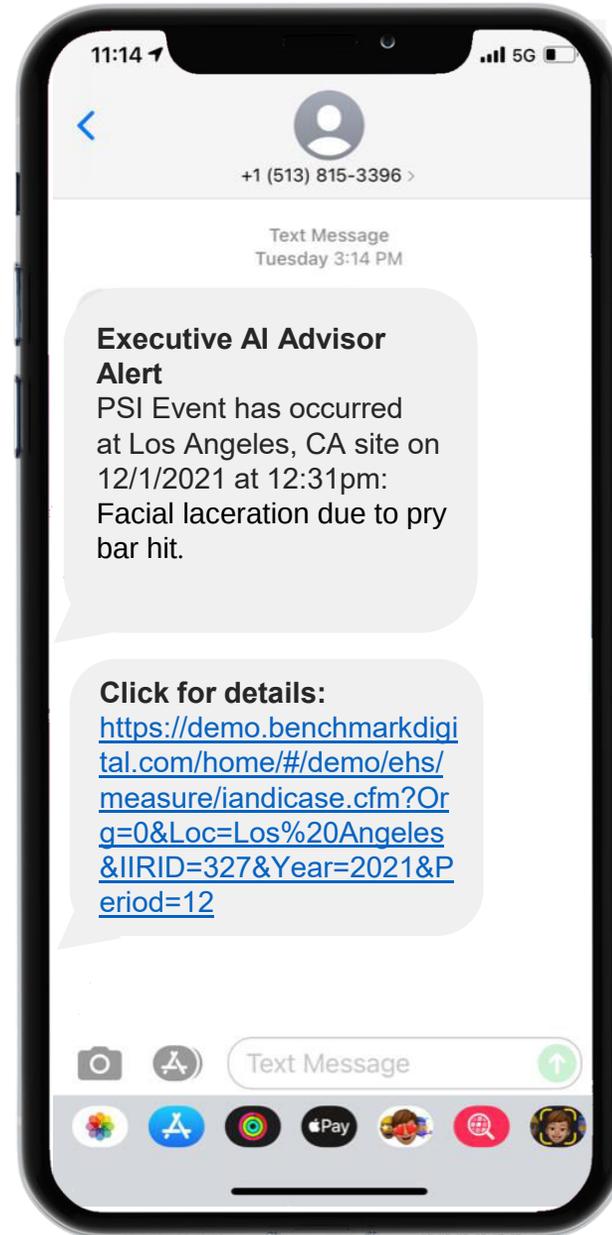
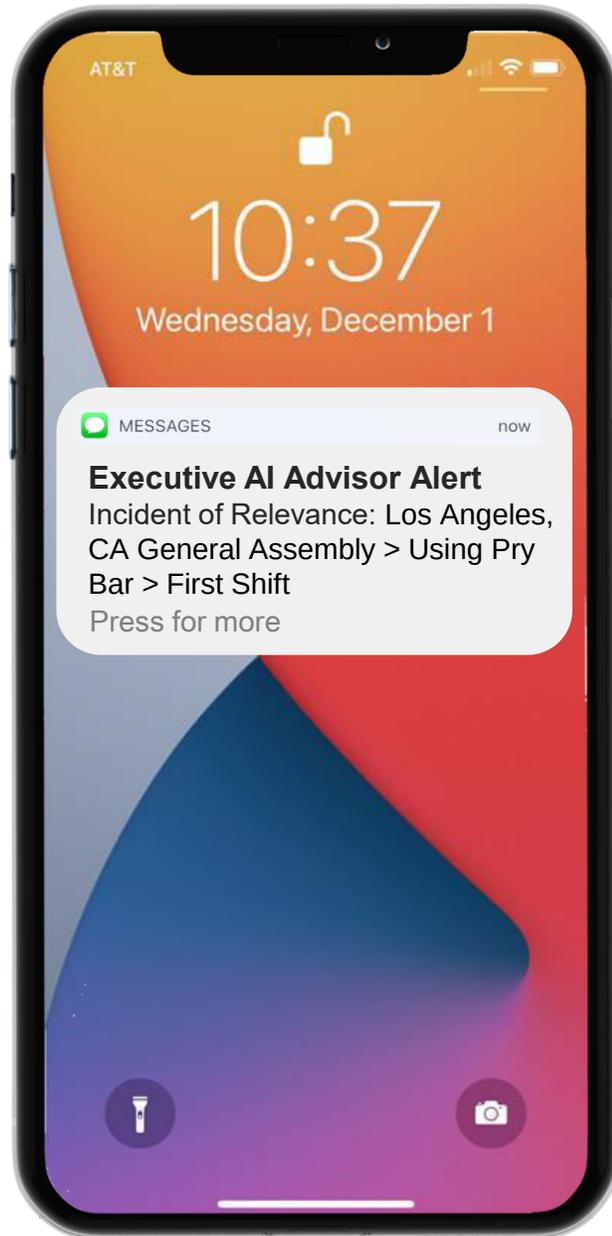
# Executive AI Advisor ... *Real-Time Alerts*

## Feature Ideas

- Real-time push notifications from the Benchmark Executive AI Advisor providing insights:

## Focused Events:

- Incident of Relevance PSI (potentially significant incidents)
- Specific events with keywords such as 'stop work', 'closed site', 'shut down', 'site closure', 'evacuation', 'in the line of fire' etc.
- Focused event types will be adjusted and learnt by AI overtime
- Detailed information associated with the Text Alert is available in one click
- Drill down for details





# Describe-It AI Advisor



# Quality AI-Advisor

## Key Challenge:



Improve the efficiency of review, coding, and escalation workflow of Quality Concern Reports (QCR) by replacing manual review processes with automated tagging/escalation

## The Solution:

AI engine trained on text related to various cause codes (Warranties, Repairs, etc.) and tags the Quality Concern to help organize/tag concerns before a review

## Custom Layering Solution

AI to identify Quality Concerns that could lead to High Impact Codes





# Computer Vision

# Computer Vision – Image Recognition & AI



## Subscriber Pilots



## Integration Partners



# GE Gas Power ... Computer Vision Showcase

AutoSave  Off

Benchmark

Search

Share Comments

File Home Insert Design Transitions Animations Slide Show Review View Recording Add-ins Help

Thumbnail

16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Reducing EHS incidents  
at customer and manufacturing sites  
by leveraging digital technology

General Electric Gas Power  
Ron Wissenburg

Wissenburg, Ron (GE Gas Power) WR

Video settings

16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

# How Computer Vision can improve safety

Phase 1 – POC with in house developed solution for PPE Detection

## Goal

- Ensure Employees and contractors wear their PPE when entering the site – Reduce the number of incidents by ensuring compliance at entrance and enforce a culture.

## Approach

- Install Camera's at the entrance that detect PPE Equipment



### Feature detection



### Entrance Gate – Camera positioning



### The detection



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# How Computer Vision can improve safety

Phase 2 - POC with scaled solution provided by Benchmark/ Integration Wizards at two Manufacturing locations

Use Case: Machine Guarding



Use Case: Working at Height



Use Case: Moving Objects



Challenges: (country specific) Regulations (Privacy)



Mask faces in CCTV output to avoid privacy issues



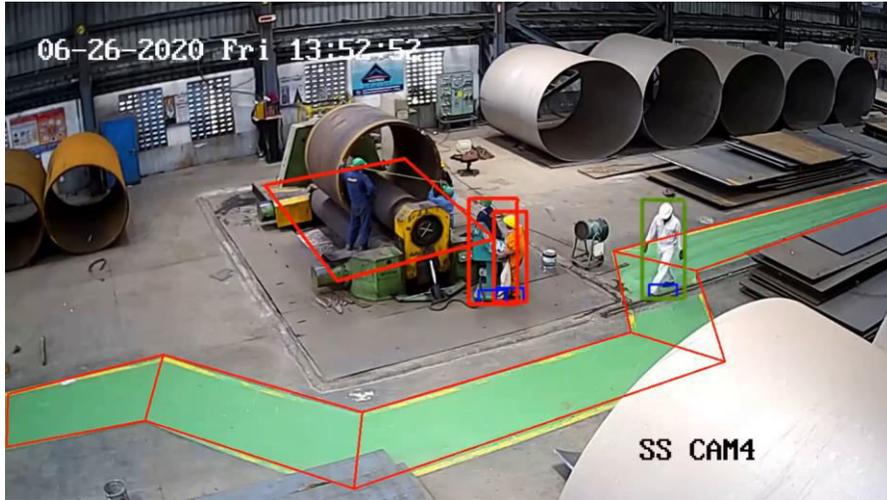
Mask vehicle numberplates in CCTV output to avoid privacy issues



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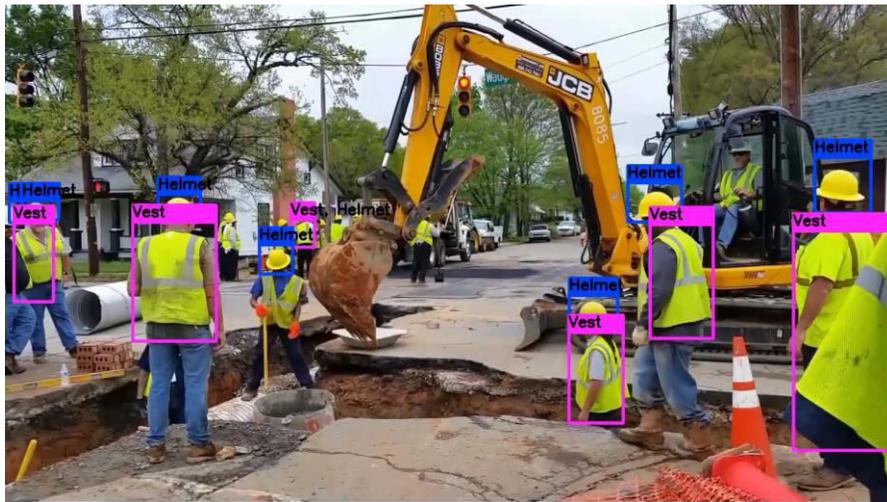
# Other Computer Vision Use Cases



**Machine Guarding** – Check Machine Status – Detect Worker in Designated Area



**Package Handling** – Box Counting – Records Incident – Inform Supervisors



**PPE Checks** – Actively Scan and Check for PPE Compliance – Autonomously Inform Supervisor, Warn Workers and Log Incident Report

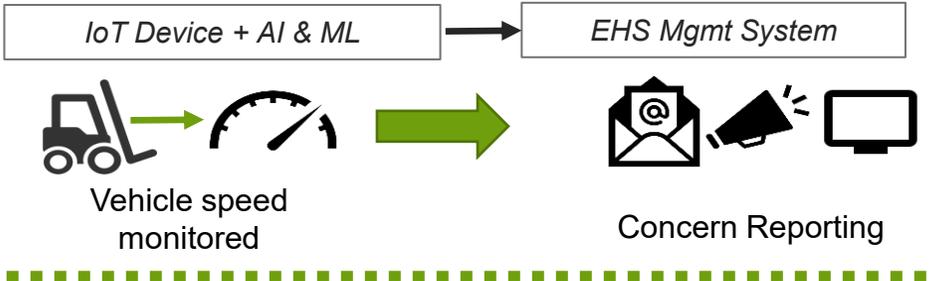


**Ergonomic Assessments** – Detect Workers in Distress – Trigger alerts for Assistance

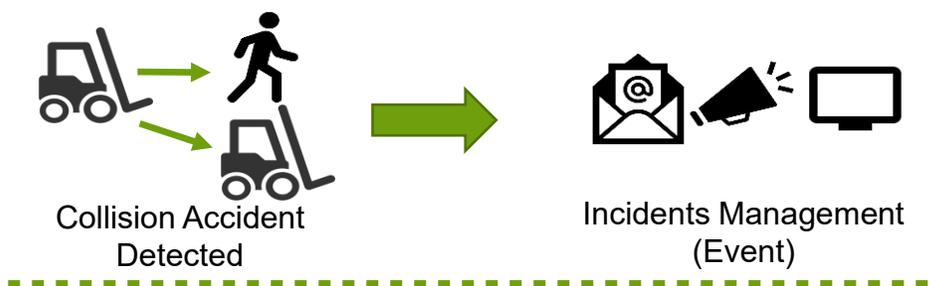


# Analytics: Providing a Holistic Representation of Operational Risk

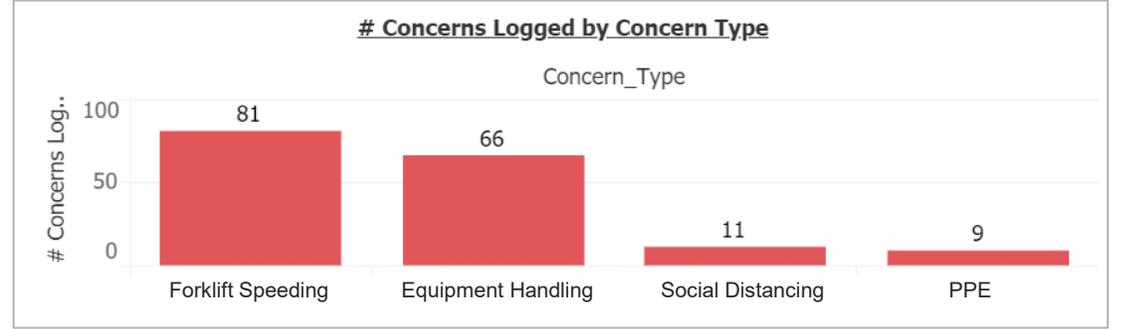
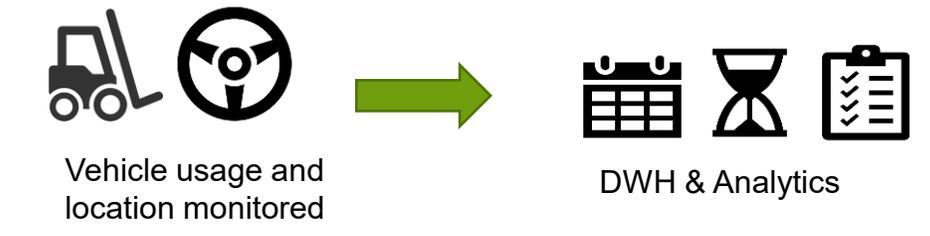
Concerns & Near Misses



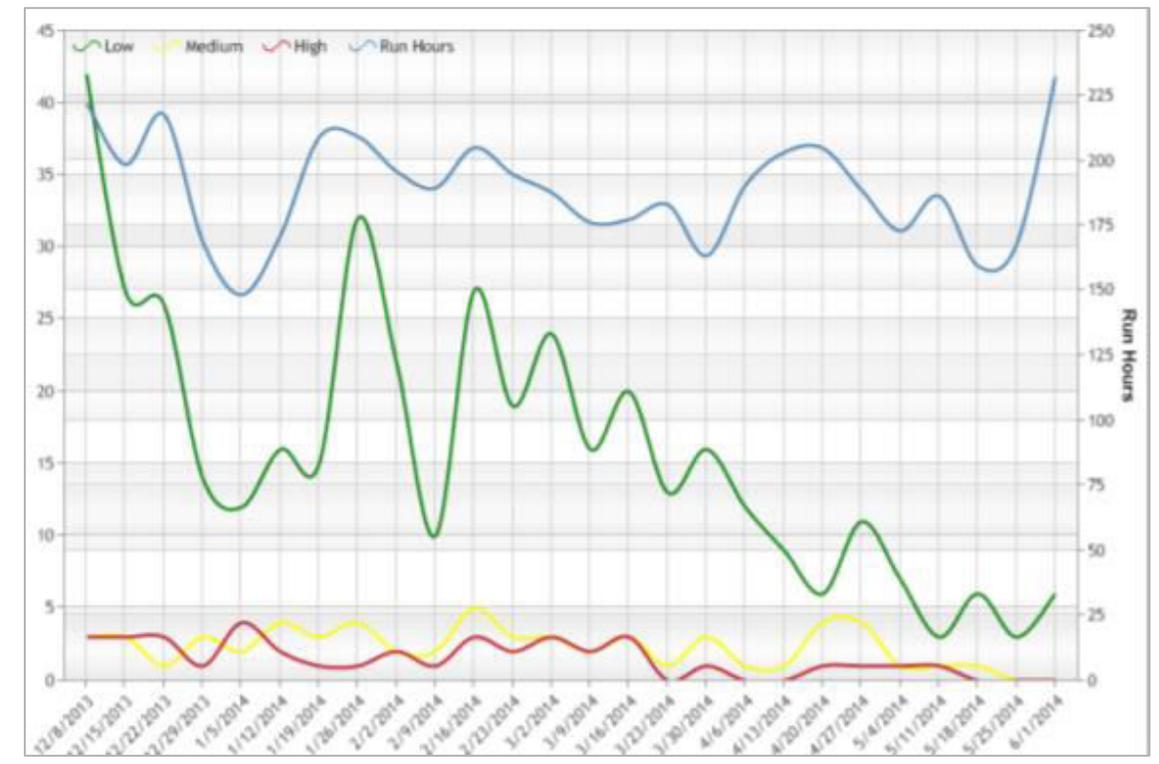
Accidents



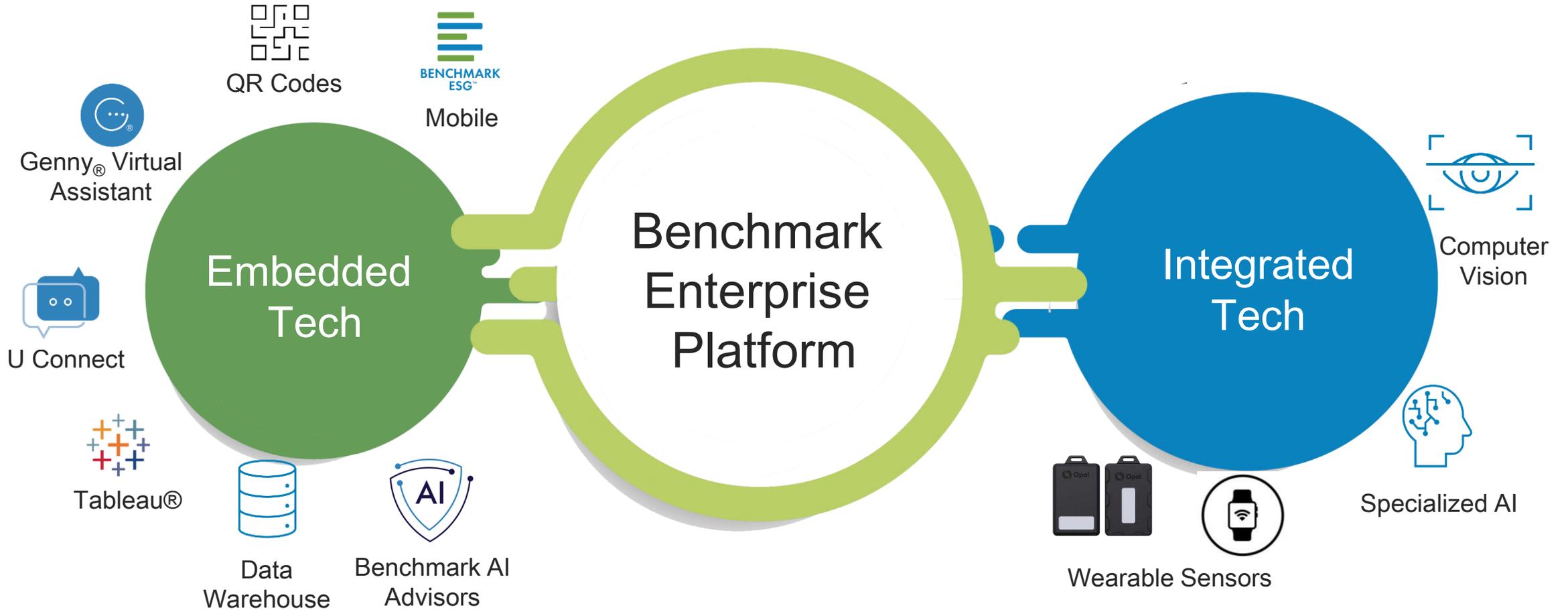
Operation



Forklift Operating Profile ... Usage vs Speeding Over Time



# Benchmark Approach for Advanced Tech



Comprehensive and Actionable Insights on Risk Across Operational



# 5 Key Advanced Tech Takeaways & Success Stories

- 1 Automate Quality Concern Processes & Save Time with Quality AI Advisor!** TK Elevator Sees 97% Issue Closure Rate, Saves \$20.2 Million by automating quality concern processes so program managers can save the time it takes to individually review, tag, and escalate each quality concern record.
- 2 Enhance Incident Management with AI Advisors!** For the HEICO companies, pairing the Describe-It AI Advisor and PSI AI Advisor allowed users to get immediate feedback when reporting incidents and better matching PSI's as well.
- 3 Increase Visibility to Reduce Risk Factors with Integrated Technologies!** Partnering with advanced technology and AI providers to intelligently integrate their tech into corresponding Benchmark ESG workflow applications maximizes user experience and value, ensuring intuitive workflow, follow-up, and email notifications together with integrated technologies.
- 4 Empower Teams to Identify Electrical Hazards with Proxii Band Wearables !** Integrated with Benchmark ESG solutions, band wearables alert users when they are in the proximity of dangerous electrical currents, automatically logging concern reports based on risk data, and notifying key stakeholders for timely investigation and/or remediation.
- 5 Enhance Personal Protective Equipment (PPE) Monitoring with Computer Vision!** GE uses on-site cameras to identify and capture safety triggers like forklift speeding, automatically logging key details within the Benchmark platform and analyzing video data to gain key safety insights!





**Thank You!**

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