

Leverage Wearable Tech to... Reduce Injuries, Build Culture, & Supercharge Your HOP Efforts!

Common Considerations & Case Studies!

NSC Nebraska Chapter

Wednesday, Oct 4th, 1:45pm

Tom West, SPHR, SHRM-SCP, COSS
Vice President, MākuSafe

tom@makusafe.com
makusafe.com | 515-490-6202



Wearable Safety Tech:

**Enabling Safety
Management 2.0 & HOP**

**Providing EHS Leading
Indicators**

**Reducing Incidents &
Claims**

**And Improving Safety
Culture!**



How do you...

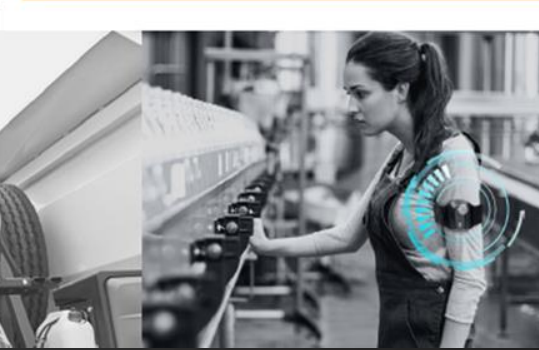
- better understand where risk exists?
- become more proactive & preventative?
- develop participation, engagement, and build culture?
- become more strategic & more data-driven?
- relate safety to the C-Suite and Production/Operations?
- make sure you know about things you know happen, but nobody reports?
- ESG? WPV? DE&I? TWH? Oh, my.
- optimize your safety management process?

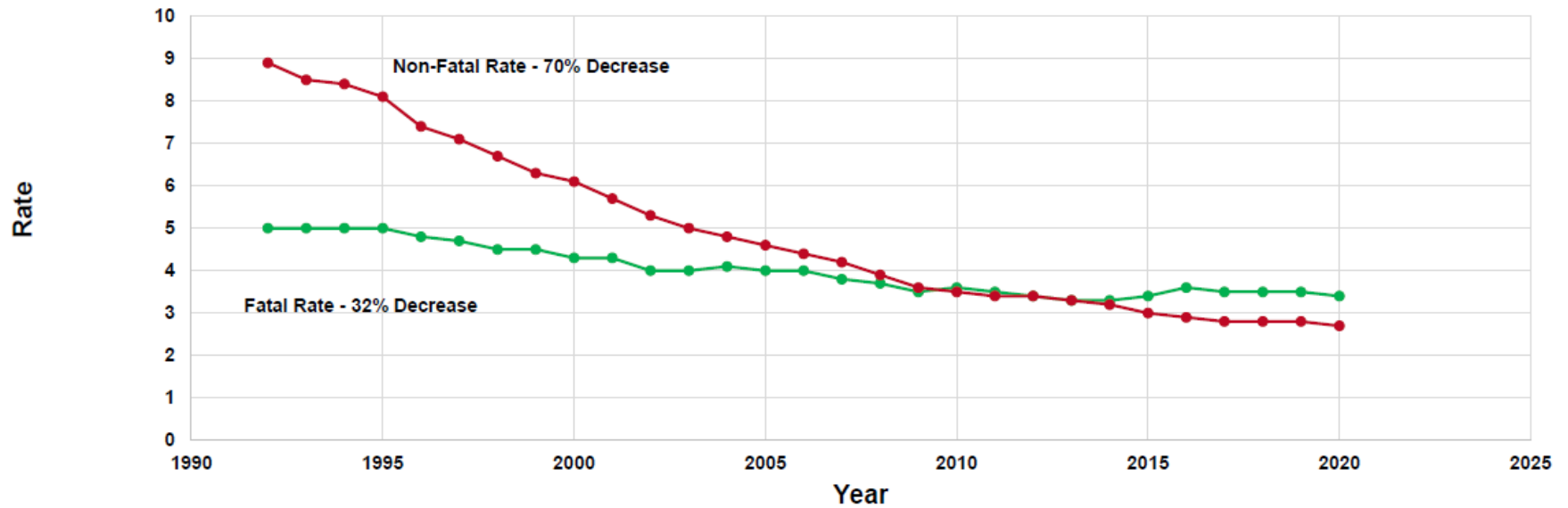
What can I do that is practical and wont waste my time and resources?
Can technology/tools really help without making life more difficult?



MākuSafe is a powerful tool for understanding risk & building enagement







New Thinking, Tools, and Approaches to Safety Management

It's time to evolve.

Human and Organizational Performance (HOP) is a science-based approach to looking at mistakes so we can address them more effectively. It builds an understanding of how humans perform and how we can build systems that are more error tolerant.

Human and organizational performance (HOP)
is a risk focused OPERATING PHILOSOPHY
which recognizes that to ERROR is human
and that an organization's
PROCESSES AND SYSTEMS greatly influence
employee actions and choices,
and consequently, their likelihood of success.

Key Principles of HOP:

1. People are fallible, and even the best make mistakes
2. Workers are masters at adaptive problem solving



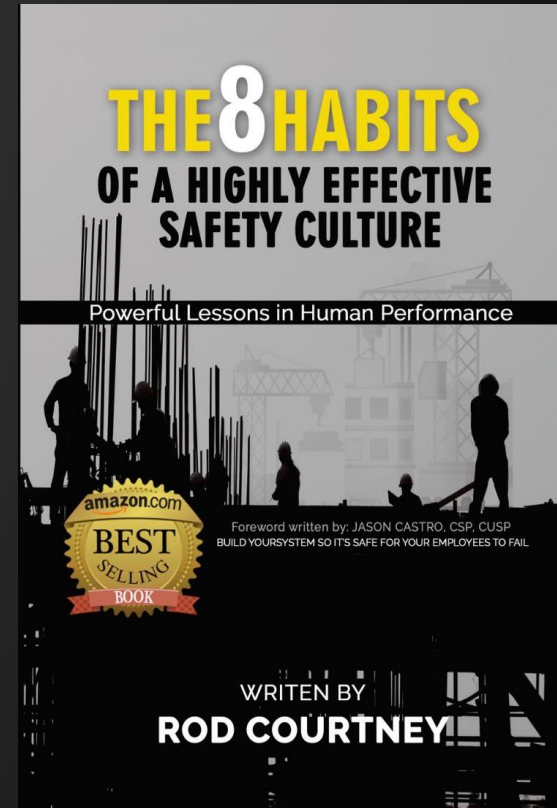
Key Principles of HOP:

1. People are fallible, and even the best make mistakes
2. Workers are masters at adaptive problem solving
3. Context drives worker actions and behaviors
4. Leadership's response to failure matters
5. Blame Fixes Nothing
6. Improvement happens through learning

Values centered H&S approach.
Practical implementation of HOP.
Leadership how-to's.



1. Stop making safety the priority
2. Make it safe for people to raise concerns
3. Make safety the responsibility of operations
4. Focus left of zero
5. Stop managing people
6. Stop trying to fix the worker
7. Find the STCKY & stop the SIF
8. Trying to influence everyone





In every work environment there are clues...



...leading indicators & near-misses that we collect automatically, analyze and use...



Light Levels

High Temp

High TVOC

High Sound dBA

Tripping

...to predict & prevent injuries & claims.

- What are we trying to achieve?
- Does the solution close gaps?
- Is this a good fit for our organization?
- Simple implementation/deployment?
- Easy to use for both leaders and front line users?
- Provide insights that are actionable?
- Actionable, results oriented?
- Leading indicator data?
- Impact on culture, mindset?
- Trackable, closed loop?



- Reduction in Accidents

Claim Frequency - Down 50%

Total Claims - Down 50%

Claims severity - Down 90%

ROI estimates over 1000% +

- Increased Transparency & Communication, Culture Building

Increase in “Good Catches / Near-Misses” & reported observations from front lines.

- Uncover Unknowns

Harness data and sensor technology to discover insights previously unavailable.

- Simplify EHS Documentation

Immediately shows EHS value.

- Safety & Health Management System

Effectiveness, Efficiency & Productivity Impact



Benefits Realized!





Workers check out and return wearables from kiosks





Scalable Solution



MākuSmart
Cloud

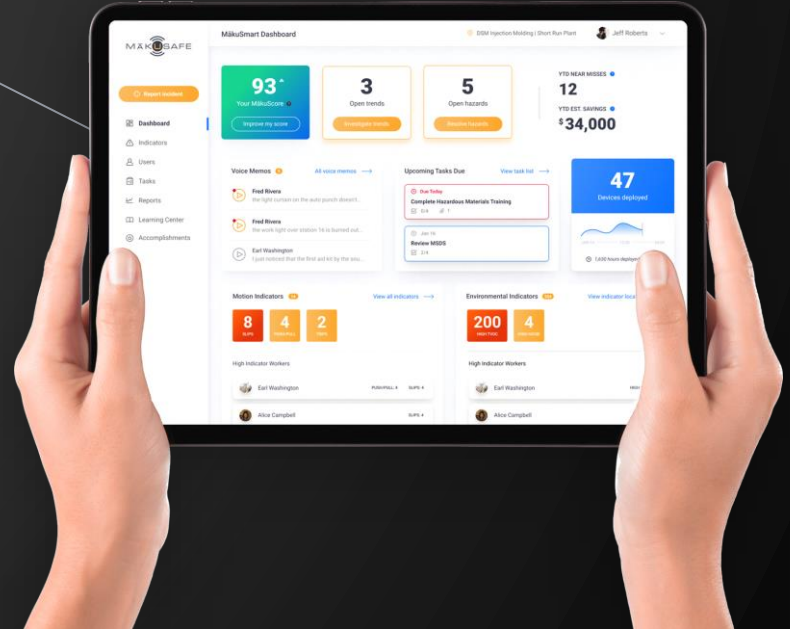
MākuSmart Web & Mobile Application



Wearable



Base Station



Connected Safety Ecosystem



Gathers & transmits data in real-time to the MākuSmart Cloud

Motion Detection



Slips, Trips, and Falls



Repetitive Motions



Worker Physicality



Forceful Exertion

Battery



30 Hour Battery



Multiple Shifts

Record
Voice Memo



Spatial Awareness

Location Identification



Worker-to-worker Proximity



Access Control & Factory 4.0



Contact Tracing



Environmental Sensors

Ambient Light



Air Quality (TVOC & CO2)



Noise / Sound Dosage



Air Pressure



Humidity



Temperature



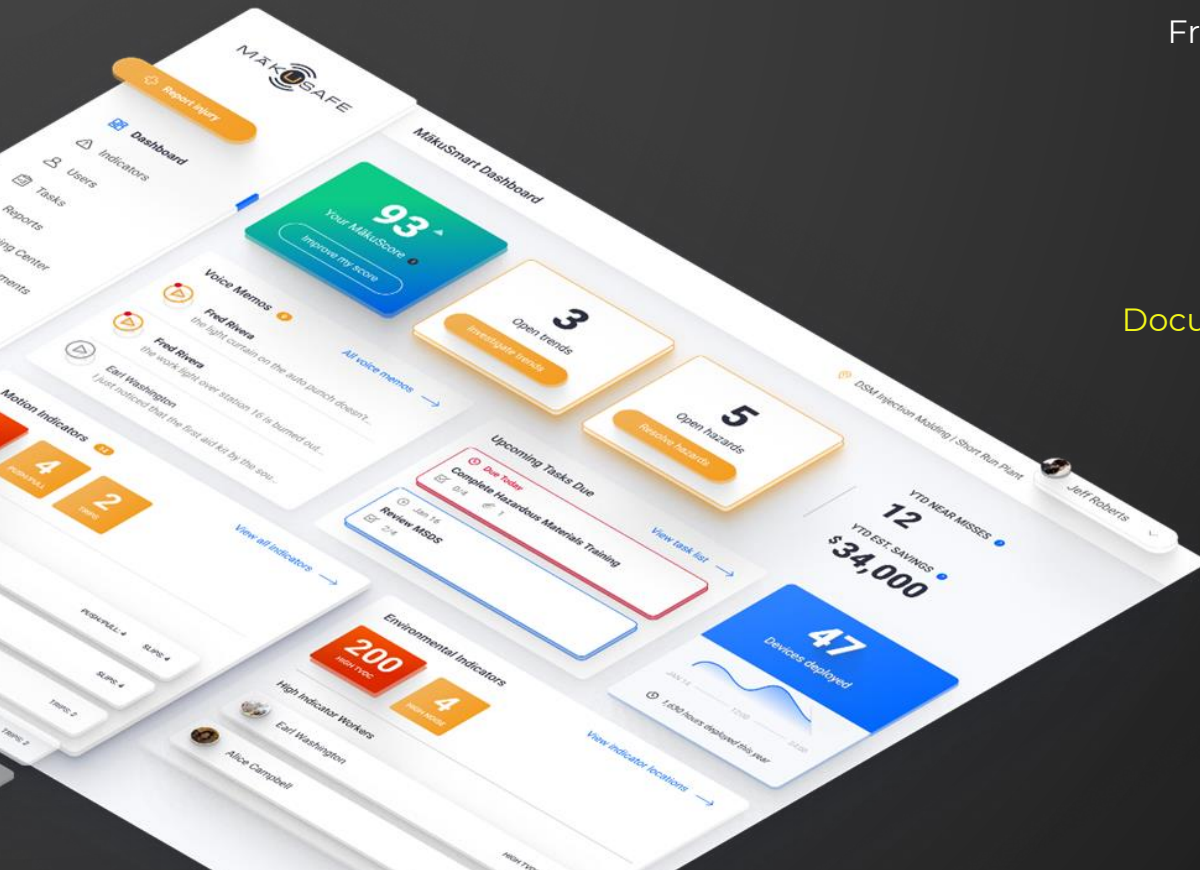
A Sensor-Packed Data-Gathering Wearable Device



MākuSafe Does Not:

- Collect anything personal (No PII)
- Monitor any biometrics
- Deliver any negative feedback to the worker; haptic, visual, or auditory
- Assume the worker is the problem, or knows what to do to correct it
- Continuously track the individual





Frontline communication via Voice Memos

Real-Time Alerts

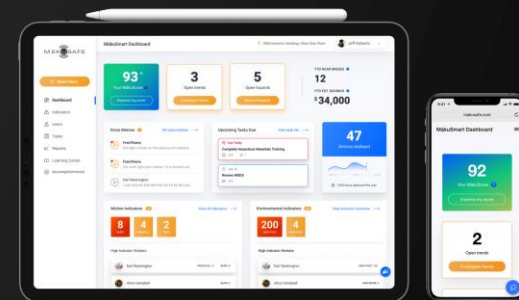
Location Conditions

AI-Driven Trends

AI-Driven Motion & Physicality Analysis

Document Incidents, Injuries, Tasks & Hazards

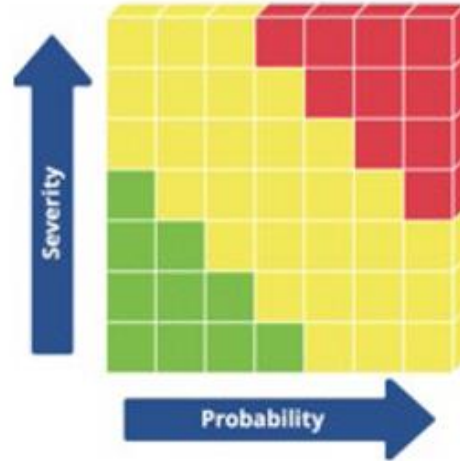
Reporting & Analytics



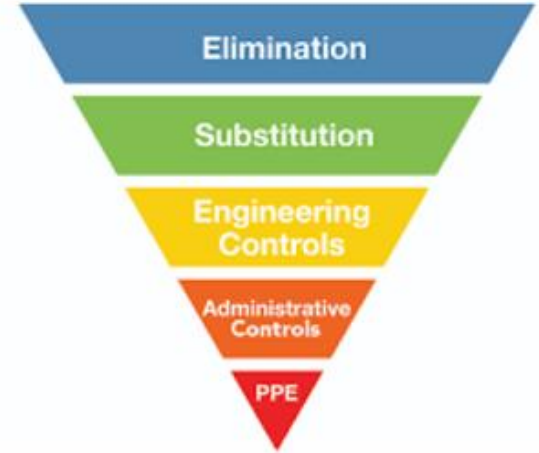
Support for Multiple Devices



**Identify
Hazards**

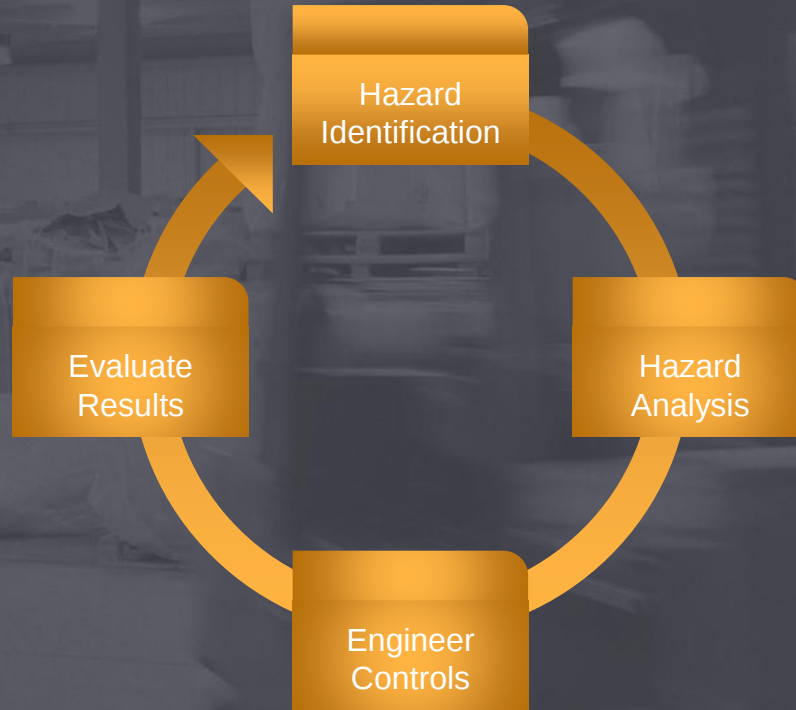


**Assess the
Risk**



**Control the
Hazard**

Safety Management Process



Culture, Engagement, Mindset
Humble Curiosity, Positive Recognition



T.R.U.E. Leading Indicators of Hazards & Risk

T – Timely

R – Relevant

U – Unique & Useful

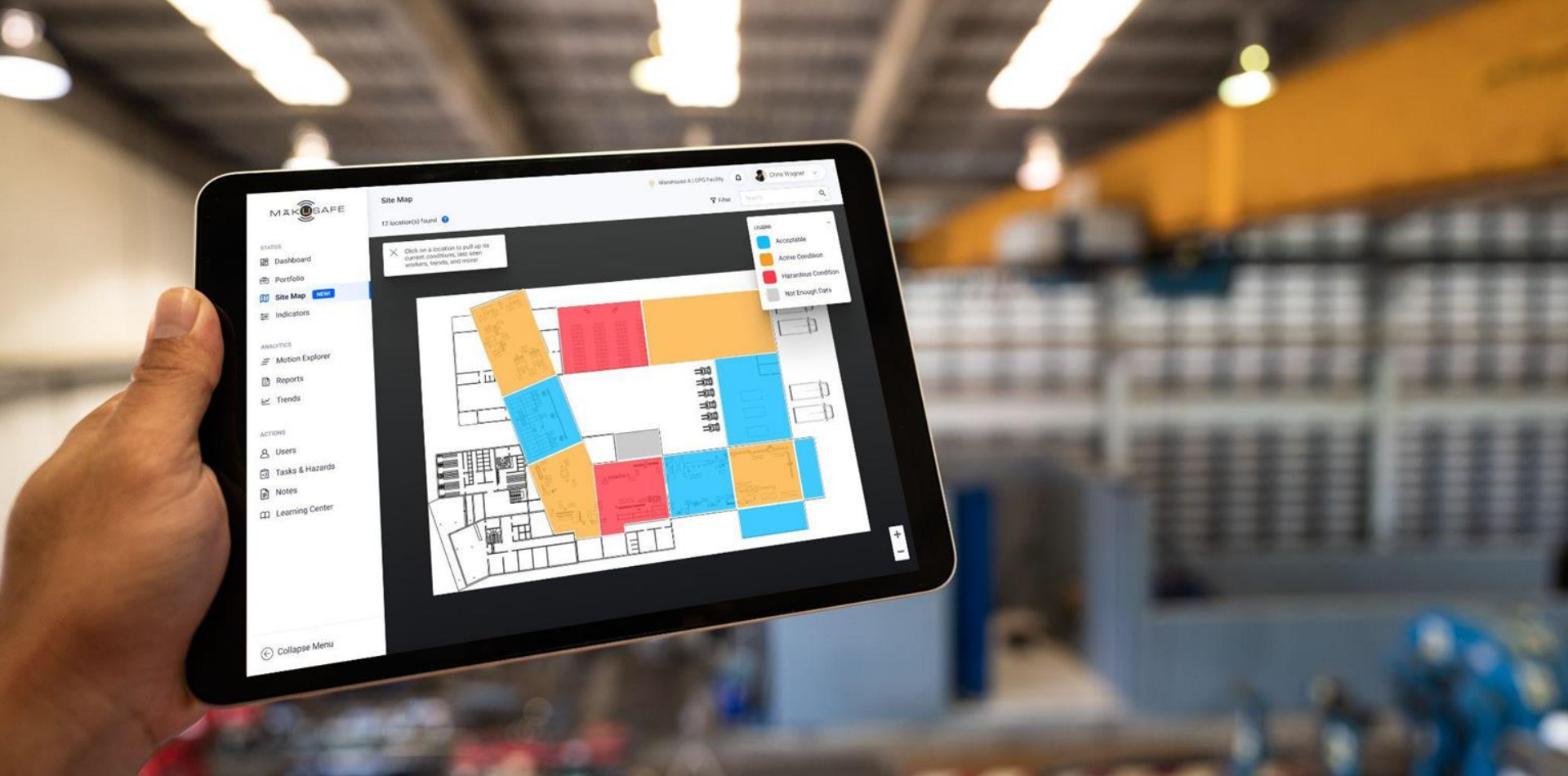
E – Easy & Economical

This facility
has been
accident
free for
1 hours



Environmentals - Heat & Noise Exposure, Air Quality, Light Levels





- Client Case Study
- Long standing construction client
- Deploying across numerous large data center projects
- Multi employer job sites
- ESG & Safety management program reporting to customer helps win projects
- Achieved and maintained 0.0% TRIR on sites where MākuSafe is being used
- 31 months



WEITZ CASE STUDY

YOUR VIRTUAL SAFETY TEAM: MAKUSAFE + DATA CENTERS

WEITZ

LEADING WITH SAFETY IN MISSION CRITICAL

CONTRIBUTORS

KASU ZENOR
Project Executive
Mission Critical
LEED AP
kasu.zenor@weitz.com



GREG MARTIN
Vice President &
General Manager
Mission Critical
LEED AP
greg.martin@weitz.com



The Weitz Company has always put safety at the forefront of our projects. With Mission Critical and data centers becoming a bigger focus of our efforts, MakuSafe was an great way to implement new technology and help protect workers. MakuSafe is a data analytics company located in West Des Moines, Iowa. They specialize in equipping workers with wearable safety devices that record data to help safety managers predict and correct potential hazardous issues on the job site.

MakuSafe prides themselves as an award-winning safety, data & analytics solution aimed at improving worker health, safety, and productivity while reducing incidents and mitigating workplace hazards and risk exposures. This innovative wearable technology provides immediate access to real-time EHS data with predictive value.

THE BENEFITS OF PREVENTATIVE TECHNOLOGY

The vast majority of near misses on the job site do not get reported. These small indicators can be huge signs of a potential hazard to come. When you can approach your job site from a proactive stance, you can begin to see a culture be formed.

On our current data center projects, we have teamed up with our trade partners to deploy all devices and are mining data looking for trends that can prevent injuries. We aren't reacting to an injury report - we're preventing the injury from happening. The National Safety Council reports that the average cost for a slip or trip that requires time away from the job costs a company an average of \$46,000.

HOW IT WORKS

With four different types of data collected, these small armbands collect environmental conditions, forceful motions, sound, and location information.

0.0

TRIR in the last 31+ months for Mission Critical

Wearable Anatomy



THE WEITZ COMPANY // MAKUSAFE

1

NT Nicole Thompson

JAN 4, 2022 4:55 PM



0:00 / 0:06



The electrical panel on the vacuum sealer is hanging open and there's exposed wires in there. I think maintenance needs to get down here and get that closed up before somebody shocks themselves

Archive

Create Hazard

- Client Case Study done with NSC
- Nationwide Logistics Organization
- Reduced lost time injuries by 74% in year one
- Continuous stream of feedback from the front lines
- Positive cultural impact documented



**WORK TO ZERO
NSC CASE STUDY**

Safety Technology Case Study

Data Analytics and Wearables

What's the Risk?

According to the **National Safety Council**, musculoskeletal disorders (MSDs) are the most common workplace injury, affecting nearly one quarter of the global population. They often result from workplace tasks that involve actions like repetitive movements, awkward or static postures, and forceful exertions. Examples of MSDs include:

- Strains and Sprains
- Muscle Rupture
- Tendinitis
- Carpal Tunnel Syndrome
- Herniated Discs
- Hernia

To reduce injuries and better understand the leading indicators of MSDs, NFI Industries began piloting the MakuSafe system, which combines wearable technology with data analytics to deduce the intensity of a worker's effort expended, arrive at conclusions about the level of potential impact on them for each day, and provide other data-driven insights (e.g. movement type, incident time, and location).

Impacts

NFI is currently piloting 120 MakuSafe wearables across three locations, primarily focused on workers performing material-handling tasks (e.g. loading and unloading). Data insights provided by MakuSafe, combined with customized lifting training and behavior-based safety tactics, have allowed safety leaders to **successfully offer support and coaching** to at-risk employees. In fact, quarterly injury results found a **74% reduction in injuries** at the pilot sites.

Culturally, employee survey results show that **safety is in the top quartile in terms of favorability**, further exemplified by the workers' willingness to utilize the units voluntarily.

Lessons

As NFI continues expanding their use of the MakuSafe system, they provided several **lessons learned** when it comes to adopting technology:

- Introduction of a behavior-based safety process allowed NFI to improve the culture around technology and safety organization-wide.
- Maintain transparency and trust with employees. Explain the goals of the technology, how it works, how data will be used, etc.
- Continuously gather formal/informal feedback from employees and managers using the technology.
- Engage with your IT department for issues around configuration, security, and compatibility.
- Understand the capabilities, mechanisms, and shortcomings of the technology, avoid being sold by bells and whistles.

Employer

NFI
Based in Camden, New Jersey, NFI is a third-party logistics provider that offers domestic and international supply chain solutions. NFI employs an estimated 16,806 associates nationwide.

Technology

MakuSafe
Based in Des Moines, Iowa, MakuSafe is a Safety, Data & Analytics solution. The MakuSafe system combines a safety management software platform with wearable technology, providing real-time DHS data with predictive value.

Motion Explorer

Company Name | Site Name

Chris Wagner

Last 30 Days

Last 7 Days

Yesterday

Filter

Search

Q

RANK	USER	PHYSICALITY	WORK ROLE	LAST 30 DAYS
1	JR Jaime Rodriguez	CRITICAL	Packer	
2	RB Robert Brown	VERY HIGH	Packer	
3	GJ Gracie Jones	VERY HIGH	Loader	
4	AR Alejandro Riviera	HIGH	Welder	
5	JM Jose Martinez	HIGH	Welder	
6	JR Jaime Rodriguez	HIGH	Packer	
7	RB Robert Brown	CAUTION	Packer	
8	GJ Gracie Jones	CAUTION	Loader	
9	AR Alejandro Riviera	CAUTION	Welder	
10	JM Jose Martinez	ACCEPTABLE	Welder	

MacBook Pro

Visualize worker's
expended effort and
potential impact on
them for the day



Contact with
Team Member

Obvious change
in behavior

DR

Danny Rodriguez

Ranking #1 At Site

Demanding
Friday

- Client Case Study done through their insurer
- Trucking & transportation
- Reduced strain & exertion injuries by 56% in year one.
- They realized \$450,000 in WC savings per site



CSB CASE STUDY





CASE STUDY

WEARABLE TECHNOLOGY AS A SOLUTION FOR WORKPLACE SAFETY

Incidents in the workplace cause physical harm to impacted employees and financial harm to employers. One of the most effective protections against workplace accidents is the proper usage of personal protective equipment (PPE) including wearable technology (wearables). Wearables are essentially small, unobtrusive devices that can detect an array of hazards in the workplace, giving employers valuable and actionable information on how to manage the impact of such hazards.

THE SCENARIO

Identifying third-party logistics provider knew that lifting, pushing, and pulling product were among their top hazards, but wanted more and better information on the other hazards their employees faced and where they were most prevalent.

The company collaborated with the Center Strong & Builders Red Control team to address this challenge through a hybrid strategy, including implementing a strong and practical lifting restriction program, and piloting wearable technology to monitor other hazards, such as slips/trips/falls, repetitive motion, backfatigue, and more. The company then used the data from the wearable technology to inform where they needed to further enhance employer safety behaviors and correct them where necessary. The program was only self-reported, as it was implemented with maximum transparency and no disruption to employees' regular activities.

THE RESULT

Through the utilization of wearable technology and adoption of the lifting restriction system, the company was able to improve employee training, reinforce best practices and supplement risk management efforts by gathering actionable intelligence on safety hazards. As a result, they reduced lost time injuries from lifting by 54% and reduced \$208K in Workers' Compensation loss savings in one year. In addition, the company was able to enhance their behavior-based safety program with real data from real situations.

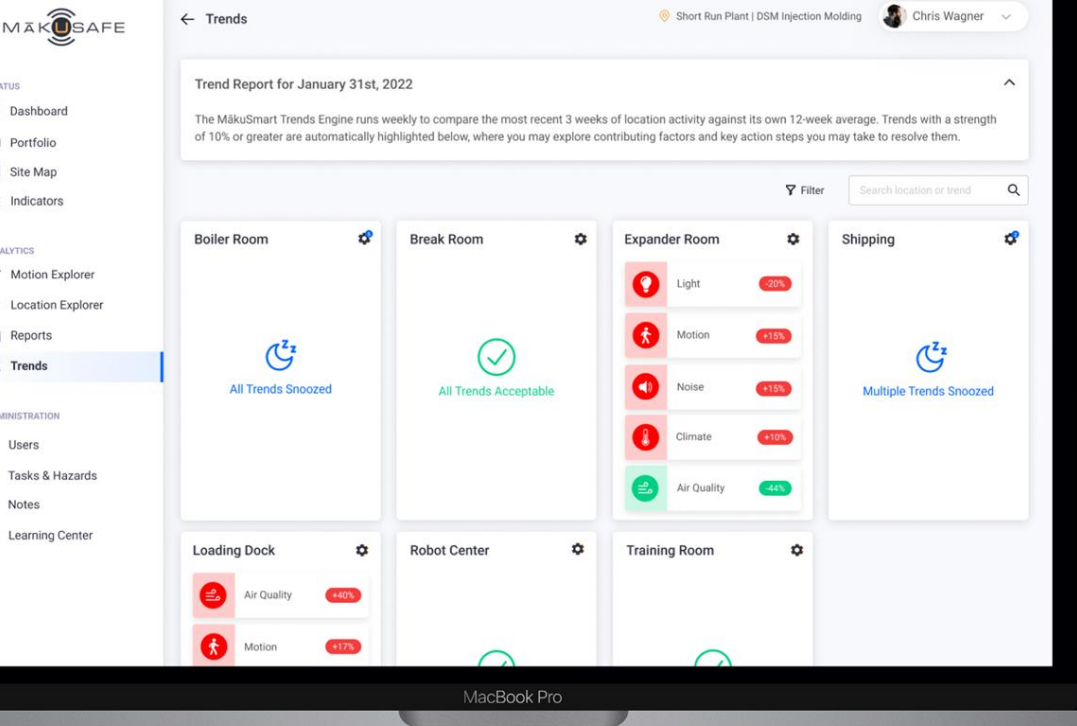
As a founding member of [Wearable Safety Solutions \(WSS\)](#), Center Strong is a leader in identifying innovative and impactful strategies to bring cutting-edge solutions to the insurance industry. Center Strong recommends MakulSafe, a WSS founder participant, as a prime technology partner for this pilot. Center Strong continues to explore wearable technologies with specialized and emerging companies and will recommend the best fit for our clients.

CONTACT US TODAY & REQUEST

NATIONAL REPRESENTATIVE
 MakulSafe
 11 Super Street
 Canton, MA 01860

info@makulsafe.com
 617.461.5242
makulsafe.com

SINCE IMPLEMENTING A LIFTING MECHANICS PROGRAM AND USING WEARABLE TECHNOLOGY, THIS COMPANY REDUCED WC LOSSES BY \$450K IN 2022.



Discover emerging issues or improvements within a location



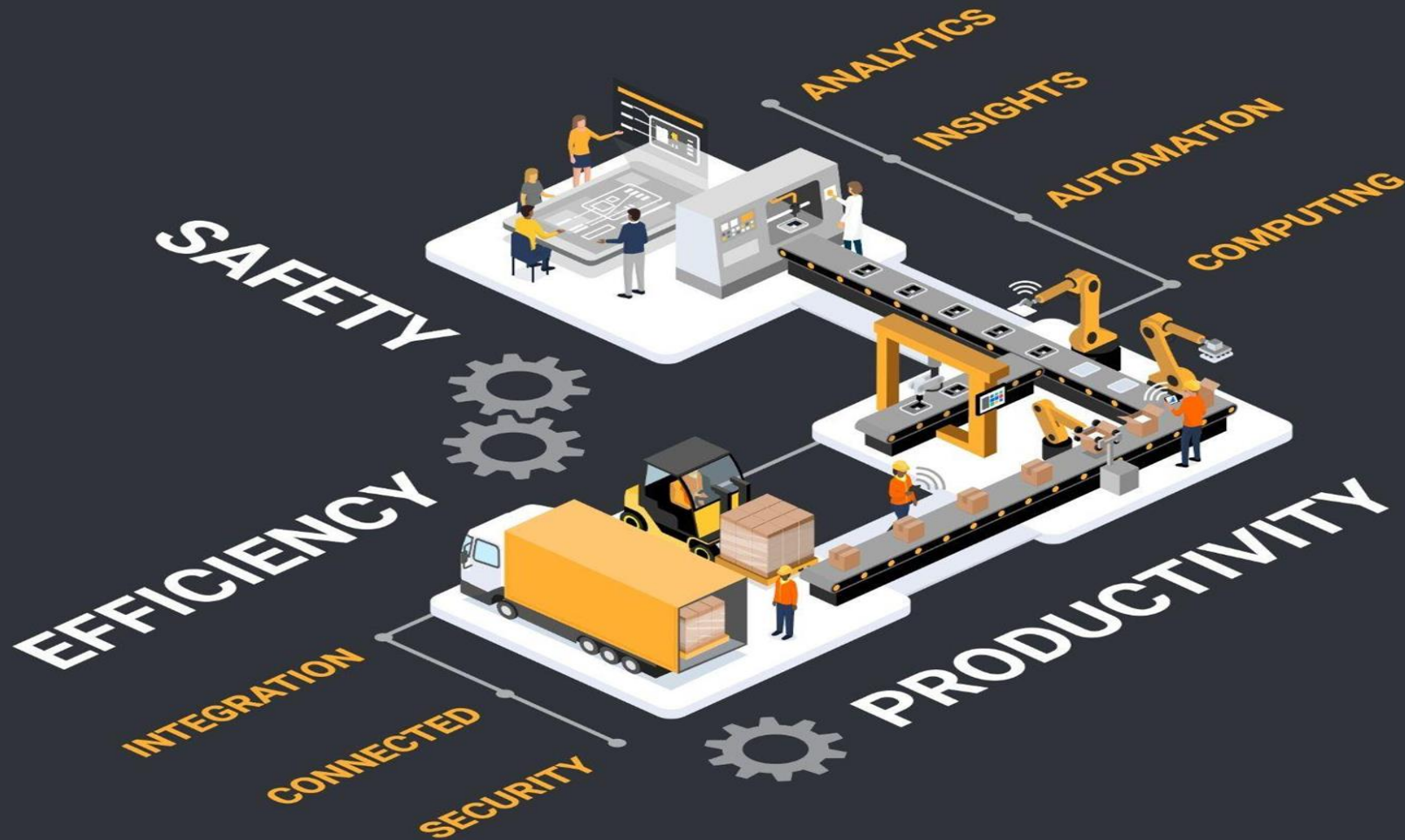
Remote Worker



DANGER

BE CAREFUL
WHEN BELT
IS IN MOTION.



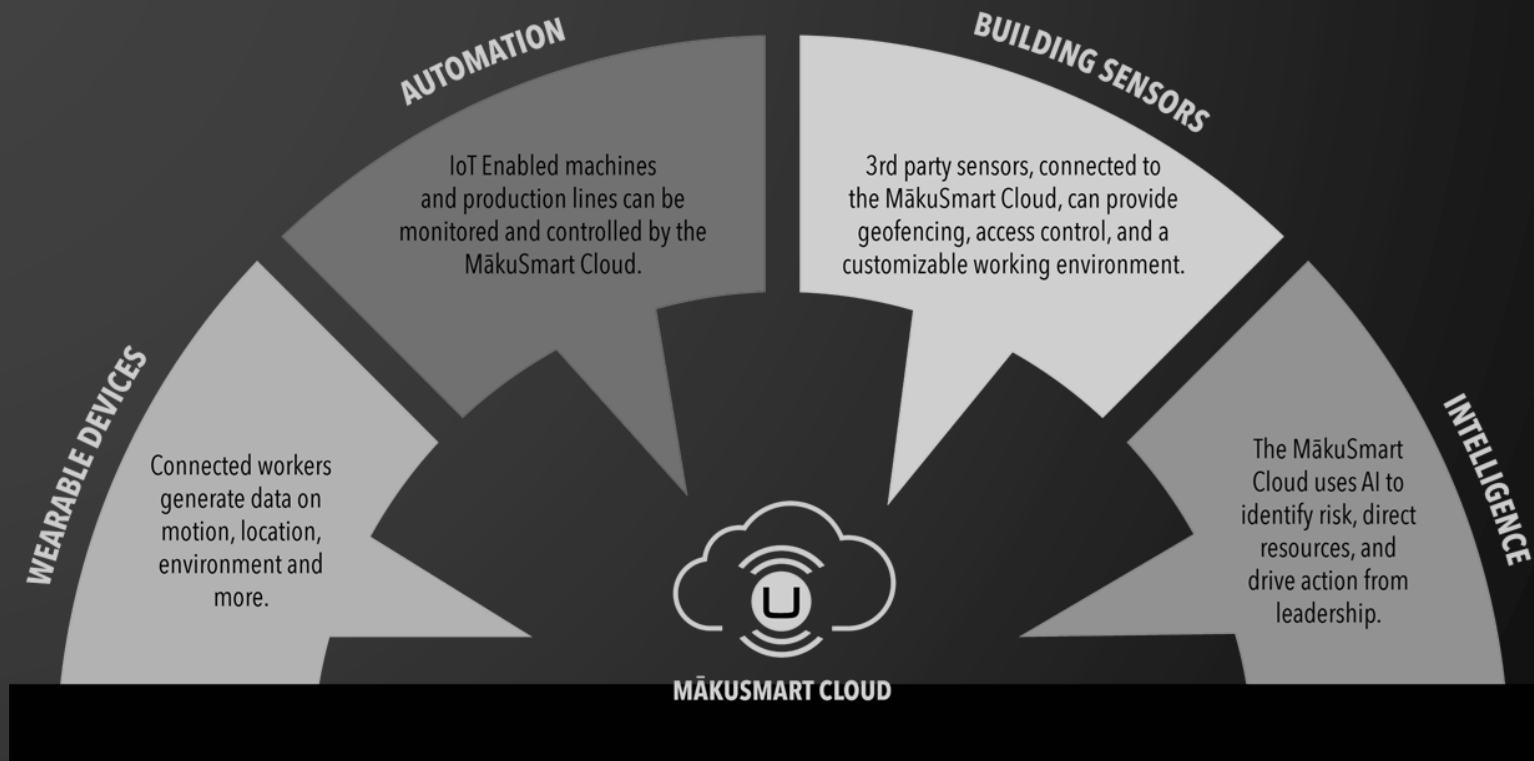


MākuSafe RāngeView

Worker Proximity
Contact Tracing
Connected Workforce



Worksites are complex connected environments, MākuSmart brings them together in a single cloud platform.



MākuSmart Is At The Center Of An Industry 4.0 Solution





MāKUSAFE



*Thank
You!*

Visit our booth
to learn more!



**OVERVIEW
FLYER**



**PRODUCT
SUMMARY**



**MANUFACTURING
USE CASES**

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