



**Our Greatest Opportunity is Granting
Permission to Imagine What Was
Foolish to Consider.**

North West Construction Consumer Council

2024 Annual Summit

Field JSA's Via AI



Jamie Dabbs, CSP

VP, EHS



Barry Nelson

President & CEO



TDIndustries

Founded in 1946, TDIndustries is the premier facilities service and mechanical construction company serving the Southwest. With offices in Arizona, Colorado and Texas.





**FactorLab provides people-centered applications and
data science
for continuous improvement and injury-free
operations.**

Artificial Intelligence and Machine Learning
Are Nudging Some of To Us Become To
Better Versions of Ourselves.



Seven National Safety
Awards in the Past Four
Years

2024 Association of
General Contractors Safety
Professional of the Year.



2024 GARY E. BIRD HORIZON AWARD

International Risk Management Institute

Construction Risk Conference




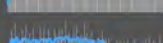


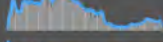
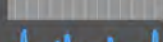




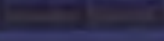

Jamie Dabbs

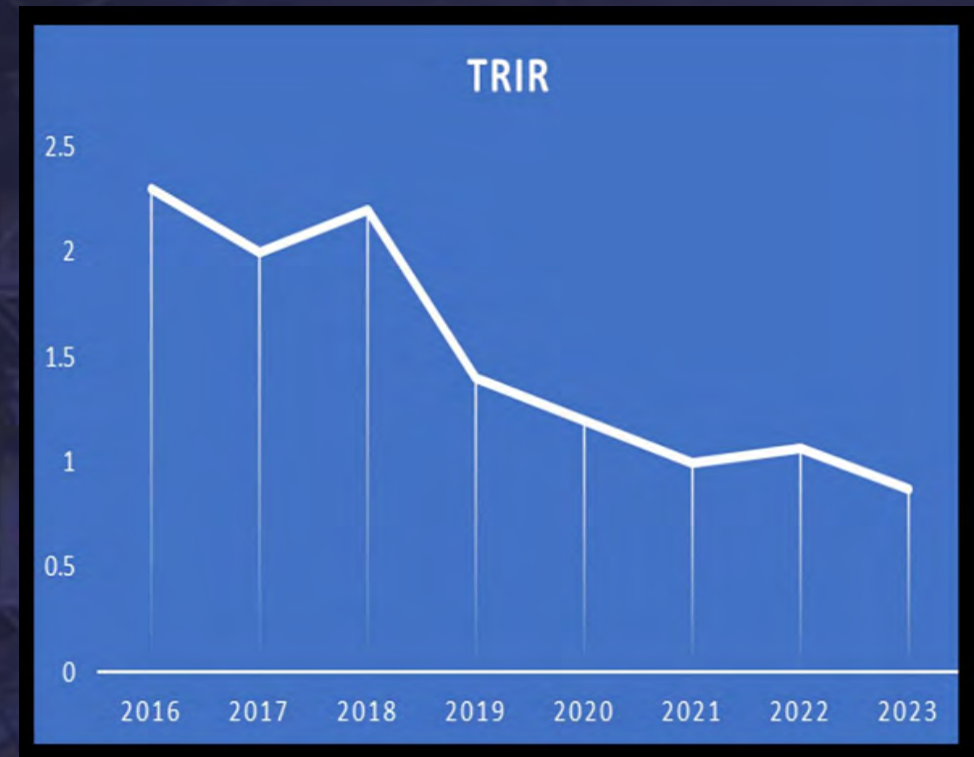
**Vice President | Safety, Health & Environmental
TDIndustries**



Impact of Increasing Engagement



TOTAL ENGAGEMENT	720,923	
OBSERVATIONS	84,405	
AT RISK OBSERVATIONS	33,395	
AT RISK PCT	40	
SAFE OBSERVATIONS	51,578	
WORK PERMITS	13,410	
PRE TASK PLANS	527,047	
PTSP VIDEOS	36,387	
AVG SEVERITY	2.4	
SAFETY MEETINGS	13,223	
CONSTRUCTION INSPECTIONS	3,207	
FACILITY INSPECTIONS	2,987	
MANUFACTURING INSPECTIONS	195	
SERVICE INSPECTIONS	2,185	



Agenda



- ✓ **TD's Safety Engagement Journey**
- ✓ **Attacking Daily Planning**
- ✓ **Safety Observations 3.0**
- ✓ **Feedback and Results**
- ✓ **What's Next**

Safety and Operations Impact



**Safety Lagging Metrics
Improved**

Improved Visibility

**Improved EHS
Intentionality**

Vision and Journey



TDI PTSP Journey...



Paper



**Digital PTSP +
Scoring of
Written
Documents**



**Daily Planning
Conversations +
PTSP - AI Assist**

This is Not a Good Conversation

- **Why Are They Being Tortured?**
- **What Purpose is This Serving?**
- **Can You Imagine If You Had to Suffer Through This?**

In

20K

In

20K

AI- Breaking Down the Language Barriers

Roberto Rodriguez 2/16/24

Transcription

SPEAKER_1: Let's start. Good morning. How are you today?

SPEAKER_2: Good. Today is Friday.

SPEAKER_1: Remember, he is new. There are things you don't know, let them know. It can be one of these colleagues, inform them, ask. Whenever something happens, ask. Because asking is for the good, not for the stupid. Today we are going to clean the drainage where the rain water falls. There in the back of the alley. There are about four that need to be repaired. We are going to clean them. And we are going to put new gravel back. The other time it seems that you were doing it. We are going to put new. What else?

SPEAKER_3: What dangers can there be? You have to be careful not to fall down.

SPEAKER_1: The dangers that can occur are when you lift that because it is heavy. We are going to take the machine to lift that, Mr. Henry helps us with that. The machucones. Don't put your hand when you put it back because you're going to hurt yourself. Okay? I'm going to try to get the equipment small and you put it there to throw all the garbage out of it. When we clean it, because the inside is what we are going to clean more, and you can put it there to throw all the garbage out of it when we clean it because the inside is what we are going to clean more. Those that are there have poop. What is called the condado has thrown the flat condado there and the county has flaked there, they have washed and gone there.

SPEAKER_2: There are parts of ULA that have chemicals, half a layer that infects the part of the...

SPEAKER_3: And there are some of them that were the same as this one, but they are already here. You also?

SPEAKER_1: Those are the ones that order, we put them.

SPEAKER_3: Well, they stay here and we put them in the room because they are in the room.

SPEAKER_1: I bring some blue ones that are there, that's what I have for the day and then I cover a material here you have to cover a material then he is going to work with us, you direct him, if I am not there you direct him work with us, you direct it, if I am not, you direct it, you do what you want. What do we have of security?

SPEAKER_2: Always be alert to the people around you, inspect everything that we are going to use to lift or do different things. We are going to use it to make chains, bars, chascos. We are going to use it to do things that lift. Also things that the machine has in the air. Or to be well controlled, to be under the load. You have to be careful with the traffic, be alert when you are going to make a signal to the operator of the machine. Only one has to make a signal the other day there were two or three making a signal. One was pointing to one side, the other to the other.

SPEAKER_1: What happens when that happens? When there are three people making a signal what does the operator have to do?

SPEAKER_2: Stop.

SPEAKER_1: The operator stops because he is not sure who is giving the correct signal. So, he as an operator calls the three and tells them, hey, I just want one person to make the signal. There can't be more than one. Either one with radio or one that is... If you look, there are people who have this, these lines. That means they have made the rigging to signal.

SPEAKER_2: And another thing, if you have...

Overview of Applied AI/ML for the Natural Language of Incident Prevention



ENGAGEMENT

There's back and forth.
The conversation is a two-way dialogue, not a one-way lecture.

1. **Leader Engagement:** The person leading the conversation is asking the crew questions that prompt thoughtful responses, not canned replies.
2. **Participant Engagement:** Multiple crew members are answering questions, asking new ones, and responding to each other.

Planning

They cover all the bases.
Everyone understands the expectations for the day's work.

3. **Planning and Work:** As well as talking about hazards, the leader also covers the day's work and expectations.
4. **Question Quality:** The leader's questions are framed to elicit meaningful responses that move the conversation forward and establish common understanding.

The Simple Seven

They move past compliance to care.
Effort is made to foster trust, convey respect, and promote authentic sharing.

5. **Active Caring:** The safety leader demonstrates genuine interest in the conversation, uses words like "please" and "thank you," and makes people feel comfortable speaking up and participating without fear of judgement.

They discuss risks, big and small.
Above all, everyone talks about what's needed to keep each other safe.

6. **Real Hazards:** The leader addresses the hazards and controls related to the day's work and encourages others to add to the discussions and report unsafe conditions or behaviors.
7. **High Hazards:** Everyone is made aware of the hazards and controls associated with potential serious injuries and fatalities.

CARE

HAZARDS

Sentences for Care

TOP SENTENCES FOR TOPIC: Care

Sentence

Watch your step at all times.

He's gonna try to watch out.

Make sure things taped up real good.

There are some bugs out here and we have seen some dogs, so just be aware of them.

It's a pretty simple task.

Let's make sure we have our flashes on, cut our headlights off facing towards the traffic, and put out our cones.

Fall protection, EH boots, long-sleeve shirts, hardhat, safety glasses, all our normal PPE, three points of contact on and off the truck, watch footing in the ditch, al..

It was swinging out over the road, so make sure I keep it up high enough to where no oncoming traffic or passing vehicles can hit it.

Make sure I don't damage any personal property.

Pressure, use proper rigging, set a line of fire, inspect any, inspect your strap voice before use, make sure we use the appropriate equipment for the job.

Good morning everybody, no, good afternoon everybody, good night everybody.

I know we've all been slacking in the cooler weather, but it got a little warm today and I saw y'all sweat.

So just make sure you watch out for your pinch points and your press, your fingers don't get in the way.

Stay out of a lot of fire, overhead loads, all that good stuff.

Always put your body in a good, safe position, ergonomic, stretch, make sure you're good on their part.

Bubble's going to have a good day.

Sentences for Housekeeping

TOP SENTENCES FOR TOPIC: Housekeeping

Sentence

It's Friday, so we'll get a good clean up, get everything, our work area, lay down area presentable and everything ready to go.

Just keep our working and walking areas clear and organized so we don't slip and fall.

Keep our work areas clear of any debris and stuff.

Look out for any hazards, flag them if needed keep our area clean we want a 5s clean as we go keep so we eliminate those trips slip hazards and be safe

We're gonna be doing an inventory of material, cleaning up the connex.

In the same way, you have to clean the area where we are going to work because if you realize there are materials that can damage it, we can fall, damage it.

Dust, hey, housekeeping.

Piss poor housekeeping.

Remove the combustibles from the area.

At the end of the day, today is Friday, you know, you have to leave everything clean for the weekend.

I will be cleaning up the yard, taking out trash and all that, emptying out the dumpster.

and to seal the lines that we have to put material and here we will cover all the ducts that are uncovered on Friday and we will clean them we will clean everything..

Any kind of trim hazards, falling, any dust or metal shavings, anything that we cut in or screw in.

We're not cleaning up any trash when we're going to be doing any hot work.

And just use the lift, make sure all is around, keep clear before you go up.

Pick up trash, you know, out-thread, leftover stuff on the ground, water bottles.

Sentences for Expectations

TOP SENTENCES FOR TOPIC: Expectations

Sentence

And the walls, make sure we're careful with the walls and just be safe.

Hey Andre, it's gonna be warm today.

Let's just be safe.

Let's make sure we're not running over the little sleeves that are on the floor that are sticking up with the limbs.

That's all I got.

We will be installing risers on levels 2 to 4 on riser 5.

All right, let's have a good day.

Be careful when the people around us because it's gonna be people down there and we don't want to drop anything on them or anything that don't matter.

Make sure we have a fire extinguisher in a fire watch at all times.

We're gonna be utilizing the porch, putting some some threading in there.

We.. gotta make sure we communicate with them.

Yeah, we're gonna be working around other trades.

You have to be careful with the other trades around us, especially when we're cutting.

Always be aware of your surroundings and team lift anything that is heavy or out of proportion and make sure you maintain a safe day.

And just make sure you wear all your PPE and be safe out there.

Back strain is gonna be another one.

Marked Increase in Expectations Being Set



Marked Increase in Care Demonstrated

Care Over Time

All Observers vs Observer Lifetime Data



This Conversation Scored an 8

I was not injured yesterday, I'm gonna start my project tomorrow on shrink wrap which I'll do the latter part of the day.

I also building a rack that needs to go under the slash unit, right over here. Have a good weekend y'all.. Thank you.

This Conversation Scored a 15

SPEAKER_1: Good morning, this is Ben. We've been planning this for awhile and I was not able to make it.

SPEAKER_2: Good morning, everybody. Yeah. I'll get to it.

SPEAKER_1: Good morning, this is Juan. Today we'll be doing power heating. So just, uh, for a few weeks, drink plenty of water.

SPEAKER_2: This morning we've been working on several things, but right now I'm going to start on the left side to get this project out and ready for people that are looking to change equipment. Today I need green bay 5, bay 4, bay 3, bay 8. No injury yesterday. Thank you.

This Conversation Scored a 31

SPEAKER_1: Good morning guys, it's November 29th out here at Heinz Maple Terrace. Timothy, what you got going on today and some of your hazards?

SPEAKER_2: I'm going to be on the 15th floor, wiring up squash lights. Some of my hazards are cuts and scrapes from the grid, frames. You want to get good head placement, proper PPE. Also trip hazards, you want to be clear of any debris, keep good housekeeping going, clean up after your work so you can minimize falls and slips.

SPEAKER_1: Alright, Aiden.

SPEAKER_3: Today I'll be on 15th, setting squash lights and pulling IMC to them. My hazards will be ladder safety and cuts and scrapes. To avoid cuts and scrapes I'll be wearing my gloves at all times, proper hand placements, and just watch out for the ceiling grid, my ladder safety. I'll have three points of contact at all times, make sure all four of my joints are on the ground, and check my ladder for a red tag before climbing on top.

SPEAKER_4: Cody?

SPEAKER_3: Good morning, today I'm going to be working on 15th. I'm going to be installing sconce lights, the rest of the exit signs, light fixtures,

SPEAKER_4: wand doors, and fire alarm circuits because I'm an electrical god. And things to look out for is nothing because I'm perfect. Nothing touches me. Thank you.

SPEAKER_5: I'm working on temp power, taking that down, make sure I lock that tag up, make sure I'm pulling in without damaging anything in my way, and make sure I know where everything's at, make sure I don't have the bulbs in people's legs or anything that can smack or break. So I've got to be aware of my surroundings as well.

SPEAKER_1: And always test before you touch.

SPEAKER_6: Today I'm going to be pulling IC wire. Something you've got to worry about is tight corners, three points of contact. As you pull the wire, make sure you're not screwing yourself, inspect your ladders, make sure there's nothing on the light that you can trip on, make sure that you take everything up there, look up when you look up, look down when you look down, there's sensitive equipment as you pull wires, so be mindful of that from then. HVAC units, stay safe in production.

SPEAKER_1: One of the main things is strains and sprains when we're pulling this IEC cable, so what's a good prevention from having strains and sprains, something we can do in the morning?

SPEAKER_6: We stretch, we make sure that you don't hurt your muscles,

SPEAKER_1: got to work together, cooperate, you don't need to pull that wire by yourself. Good communication.

SPEAKER_7: Kurt? I'm going to be turning med-aid and feeders in the panels. Use the knife, make sure you wear your proper PPE, wear your gloves, watch out for people around you, watch out for debris on the floor, and just communicate with the people around you and stay hydrated.

SPEAKER_1: And the same thing with you, that cable is pretty hard to maneuver and stuff when you get it in the panel, you've got to kind of bend it and stuff, so there's strains and sprains with that one too.

SPEAKER_8: I'm going to be pulling IEC on 17. Some things we need to watch out for are strains and sprains, we can avoid that by stretching and asking for help when you need it. Some other things we need to watch out for is cuts and scrapes in the ceiling and watch out for existing installed stuff.

SPEAKER_1: How do we prevent our cuts and scrapes from the ceiling grate and the ceiling?

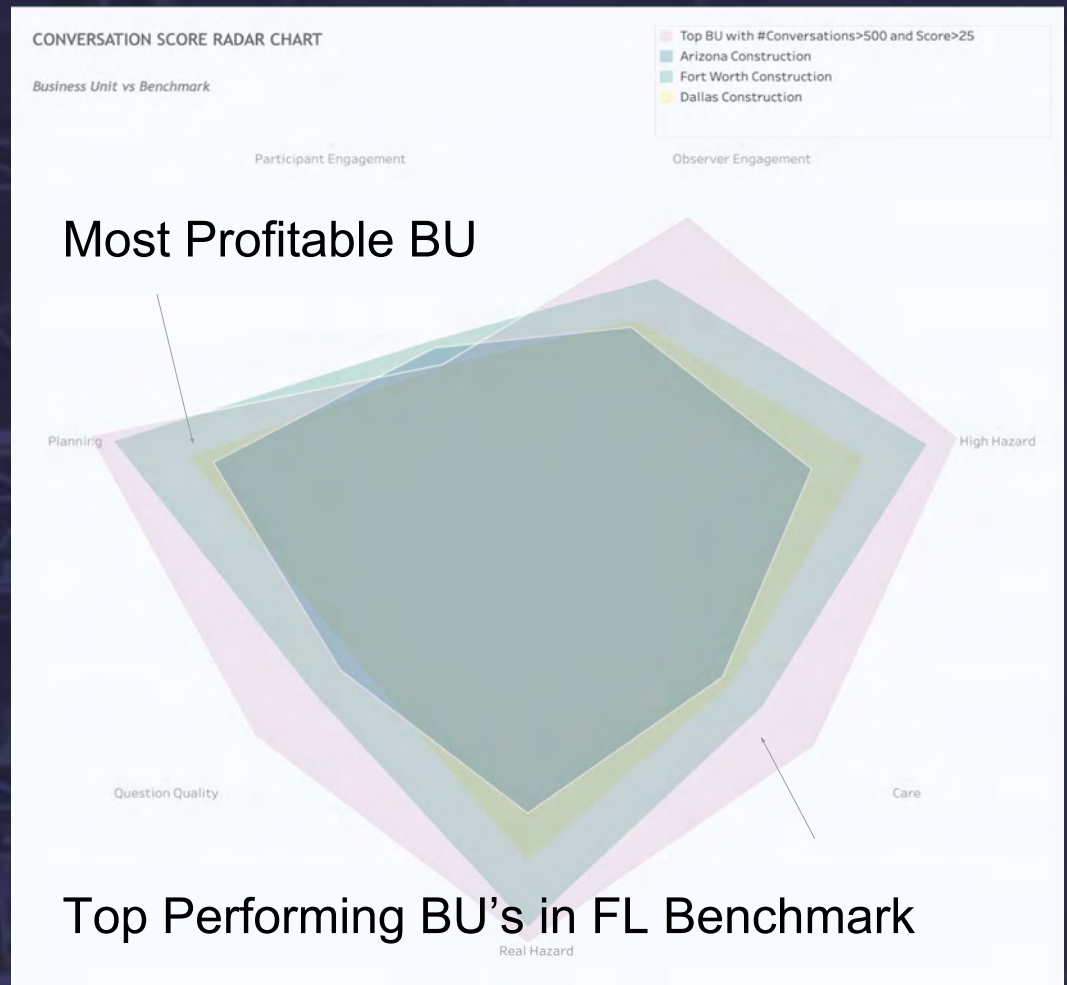
SPEAKER_8: Make sure we're wearing sleeves at all times and your gloves at all times.

SPEAKER_1: All right. I don't believe we have any more cranes on the job site. I think they took that crane down over there, but we do still have the swing stages, people over here cleaning the windows and stuff, so we've just got to watch out for them. Just watch out for the red tape and stuff like that. We've got Skytrax driving around here. They don't pay attention. They fly around here pretty fast around the corner, so watch out for them. You guys in the corridor, Baker, like I said, they like to walk through there and bump our ladders with their studs and stuff, so make sure we talk to them and communicate with them before they just push their way through. And that's it for a safe and productive day

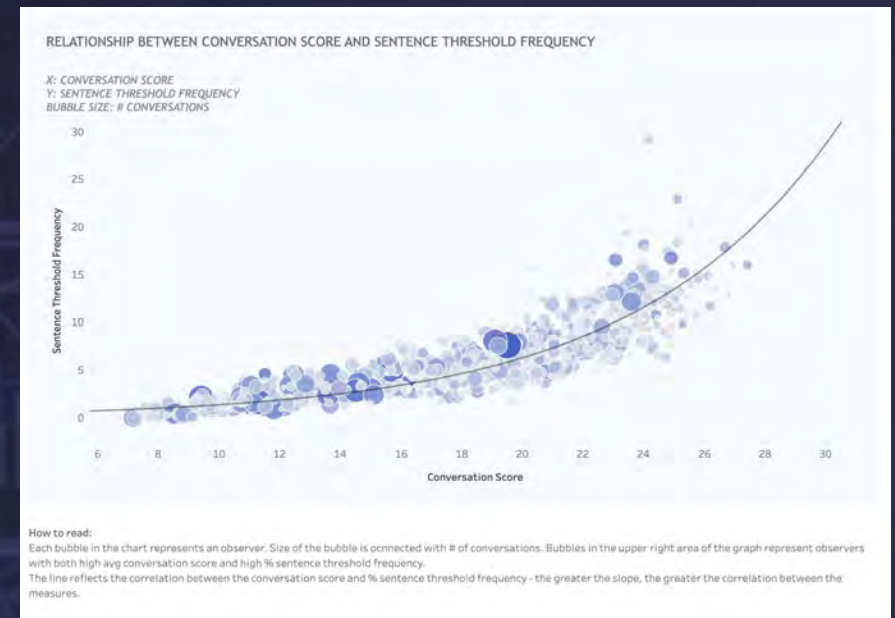
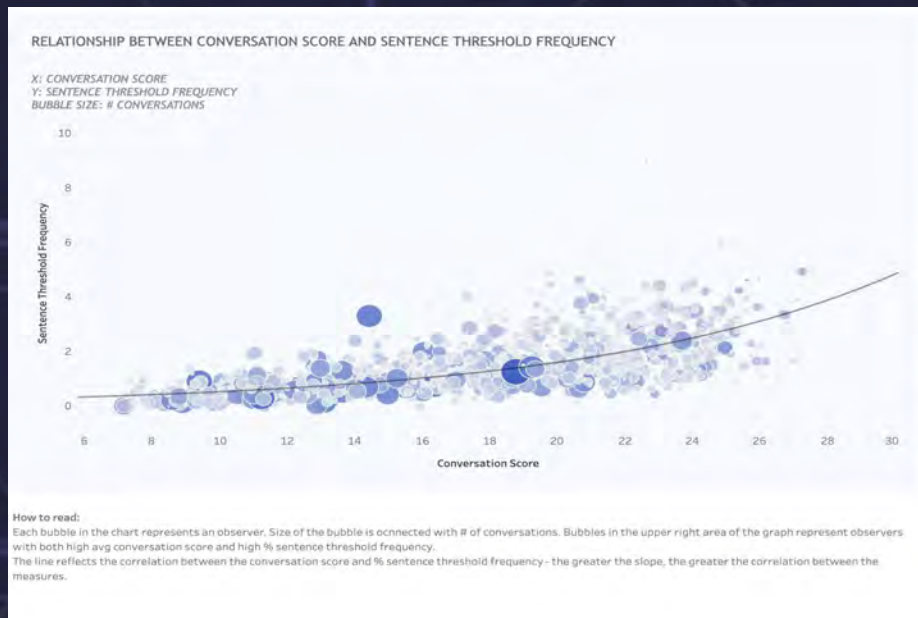
Measuring The Quality of Planning Conversations

	# Conversations	Care	High Hazard	Observer Engagement	Participant Engagement	Planning	Question Quality	Real Hazard	Conversation Score
NDOZA	394	4.6	4.3	4.3	2.1	4.7	3.2	4.5	27.6
URCHFL..	327	4.0	4.3	4.0	1.8	4.6	3.7	4.4	26.8
NDOVAL	473	3.0	4.3	4.3	2.7	4.7	3.1	4.5	26.6
O MEND..	309	4.4	4.2	4.4	1.9	4.6	2.6	4.4	26.5
LETIER	489	4.1	4.3	3.3	2.1	4.4	3.6	4.4	26.3
MARTIN..	334	4.2	4.3	4.3	2.5	4.5	2.0	4.4	26.2
AS	491	3.7	3.9	3.8	1.9	4.5	3.7	4.3	25.7
Mendoza	331	3.6	3.9	4.3	2.1	4.6	2.9	4.2	25.5
ROBLEDO	414	3.3	4.0	3.6	2.8	4.3	3.2	4.1	25.3
OLORIO	530	3.8	4.0	4.0	1.8	4.4	2.8	4.2	25.0
GA GOM..	612	3.8	3.8	4.3	2.0	4.4	2.5	4.1	24.9
MERCADO	425	4.1	3.8	3.9	2.0	4.1	3.1	3.9	24.9
LOPEZ	348	3.4	3.5	4.1	2.6	4.3	3.0	3.9	24.7
RN	338	3.8	4.0	3.7	2.3	4.1	2.9	4.0	24.7
GIL, SR.	375	3.8	3.7	3.8	1.9	4.4	3.0	4.1	24.7
NDEZ	320	3.4	3.7	3.7	2.7	4.1	3.2	3.8	24.7
SON	411	3.9	3.7	3.5	1.7	4.1	3.8	3.9	24.6
RUVAL..	432	3.7	3.8	3.6	2.3	4.3	3.1	3.9	24.6
ES	549	3.7	3.9	4.0	1.9	4.3	2.7	4.0	24.5
HUGA	651	3.0	3.9	3.7	2.7	4.2	2.9	4.0	24.4
GUAYO ..	685	3.6	3.6	4.0	2.3	4.3	2.6	3.9	24.4
TORRES	342	3.9	3.5	4.1	2.5	4.2	2.2	3.8	24.2
GURA	481	3.6	3.4	4.1	2.5	4.3	2.3	3.8	24.0
MARTIN..	376	3.2	3.6	3.9	2.6	4.2	2.7	3.8	23.9

Business Unit Conversation Performance Averages with Industry Benchmarks and Incident/Financial Outcomes



Stronger Correlation Between Care and Overall Conversation Score



Providing Context For Impact and Challenges



40% of All Crew Leaders
Showed A Measurable
Improvement in
Conversation Scores

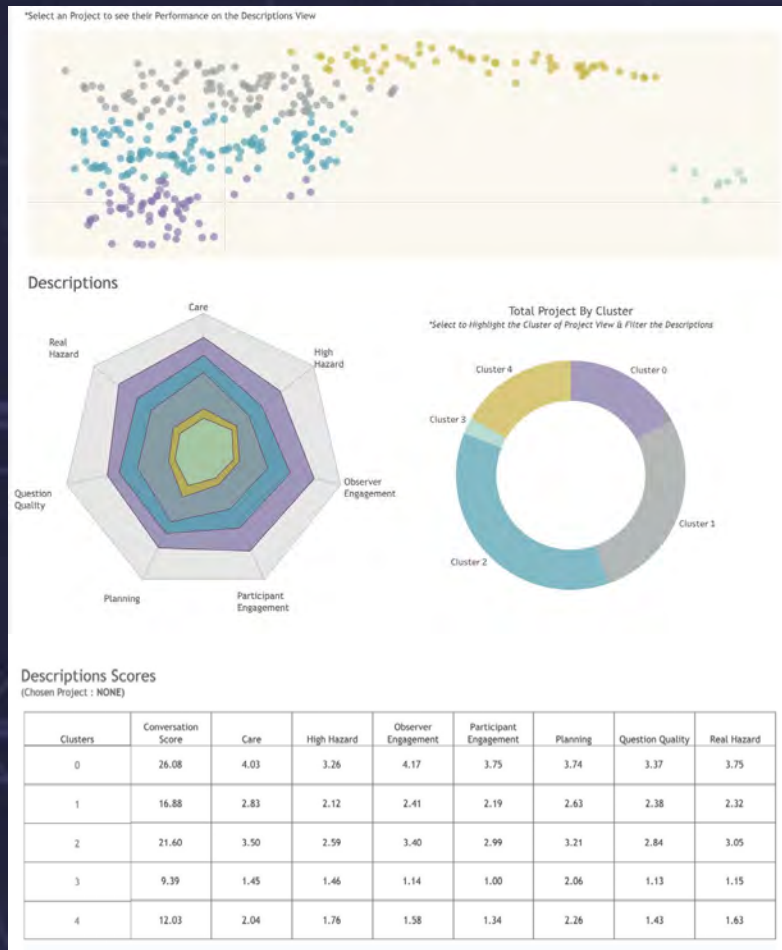
Nearly 70% of All Users
Showed Improvement
After 50 Events

Providing Context For Impact and Challenges



52% of All Crew Leaders Showed A Measurable Improvement in High Hazard Engagement and Discussion After 50 Conversations

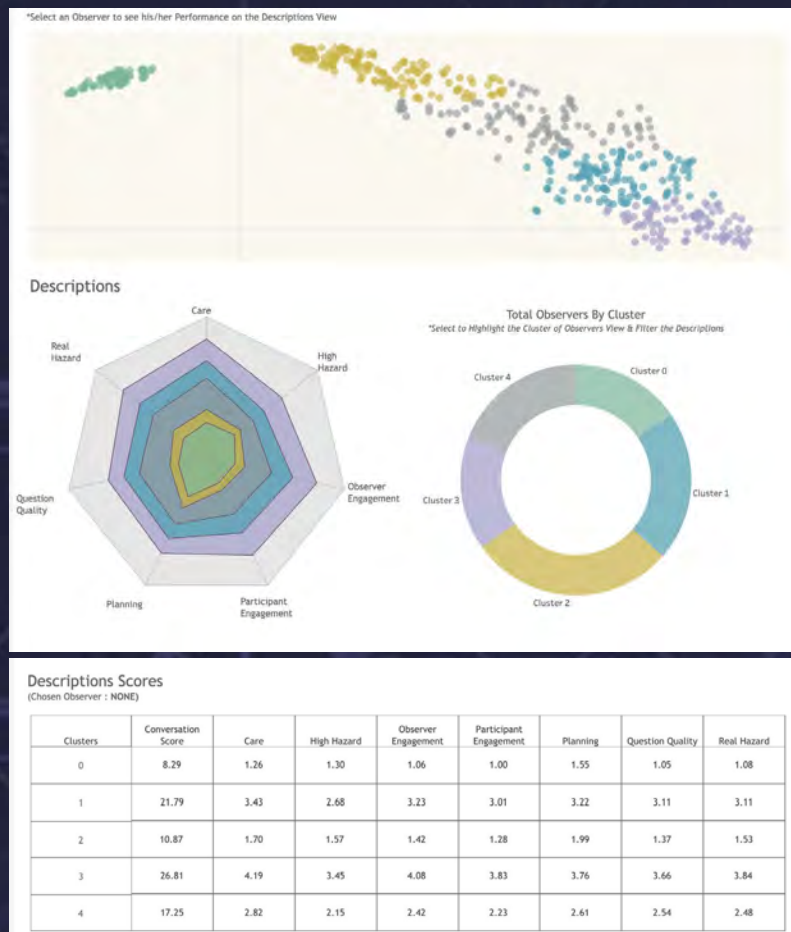
Project Clustering By Daily Planning Conversation Quality



Easily Identify High Performing Projects

Quickly Identify Projects Struggling with Planning Conversations

Leader Clustering By Daily Planning Conversation Quality



Easily Identify High Performing Leaders and Their Others Who Are Similar

Discover Which Observers Need Coaching or Are Most Distant from Better Leaders

Servant Leaders Are Special Leaders

“How You Say it is More
Important Than What You Say”

Dr. Alex Pentland
Distinguished Professor MIT



“It is not the seed,
it’s the soil
that matters.”

Michael Beer
Professor of Business Administration,
Harvard Business School

Thank You!



Jamie Dabbs, CSP

VP, EHS



Barry Nelson

President & CEO



Thank You!



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