

# Make Safety Predictive

This presentation has been handed out to the participants of the GLC European HSE Management Forum, 29<sup>th</sup> September 2017, Berlin.

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Sebastian Bartels  
Vice President, EMEA  
DEKRA Organisational Reliability Ltd.



# WHO IS DEKRA?



DEKRA Automotive



DEKRA Industrial



DEKRA Personnel

39,000  
employees

5 continents

€2.9bn

over 50  
countries

## OUR VISION 2025

We will be the **global partner** for a safe world

Prevent accidents  
to protect lives

Global partnering  
with all stakeholders

Global thought  
leader in safety



# We focus on people

We help organisations  
reduce operational risk and  
foster a culture that cares.

## The Result?

Fewer injuries, improved  
reliability, saved lives  
and better businesses.



WHY ORGANISATIONAL SAFETY?

**In today's world,**

Employees, Customers &  
Communities expect no  
less than great Safety.





# We live in a different era

Regulatory  
Compliance  
1970s



Management  
Systems  
1980s



Employee  
Focus  
1990s



Leadership  
Centric  
2000s



**Science +  
People Driven**  
Today

OVER THE LAST 20 YEARS,  
ORGANISATIONS HAVE DISCOVERED

## **the power of safety**

TO DELIVER ON THE PROMISE OF EXCELLENCE TO  
THEIR EMPLOYEES, SHAREHOLDERS & COMMUNITIES





# Leaders want Safety & Reliability Solutions that deliver results in a dynamic world

Measureable  
outcomes

Real-time  
interventions

Empowered  
employees

Activated  
leadership

Transformational  
work experiences



# SOLUTIONS FOR TODAY'S WORKPLACE



## CULTURE

Protect your  
people, plant &  
process with a  
Culture of Care



## LEADERSHIP

Develop authentic  
Leaders for enhanced  
individual, team &  
business performance

# SOLUTIONS FOR TODAY'S WORKPLACE



## **SAFETY STRATEGY**

Engineer your  
roadmap  
to great Safety  
performance



## **FATIGUE RISK MANAGEMENT**

Apply science to real life  
for optimal workplace  
performance

# SOLUTIONS FOR TODAY'S WORKPLACE



## SERIOUS INJURIES & FATALITIES

Draw on the latest research to protect what matters most



## EMPLOYEE ENGAGEMENT

Engage workers in reducing risk and human error



# SOLUTIONS FOR TODAY'S WORKPLACE



## **OPERATIONAL RELIABILITY**

Create a high-performance organisation with the best in behavioural- & neuro-sciences



## **PROJECT SUPPORT**

Deliver Safety & Reliability on time and on budget

## WHAT OUR CLIENTS SAY...

“DEKRA is a  
**thought leader.**”

“Working with DEKRA  
has **changed the way**  
**our top executives think**  
about safety.”

“**They’re always trying to improve safety.** [With every  
innovation] there’s always a purpose behind it. “

“DEKRA is super easy  
to work with. They're  
very flexible. We've  
enjoyed our **ongoing**  
**relationship** with DEKRA  
and it will continue  
for a long time.”

“Our organization is not just developing safety leadership, it is developing leadership.”

# Make Safety Predictive



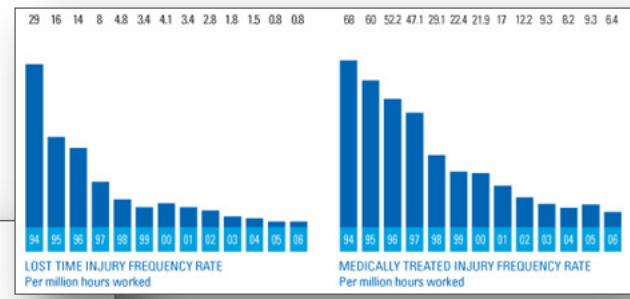
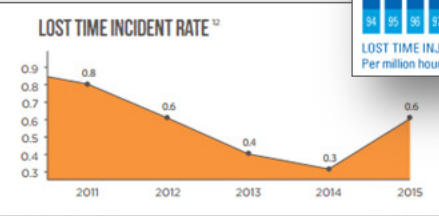
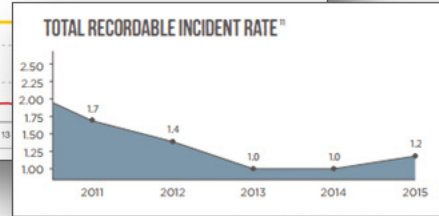
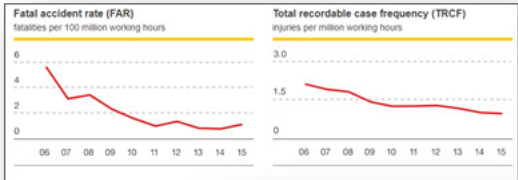
# You

- Who has defined Injury Rate targets?
- Who has defined Injury Rate targets for the management
- Who is monitoring leading indicators?
- Who has targets related to leading indicators?



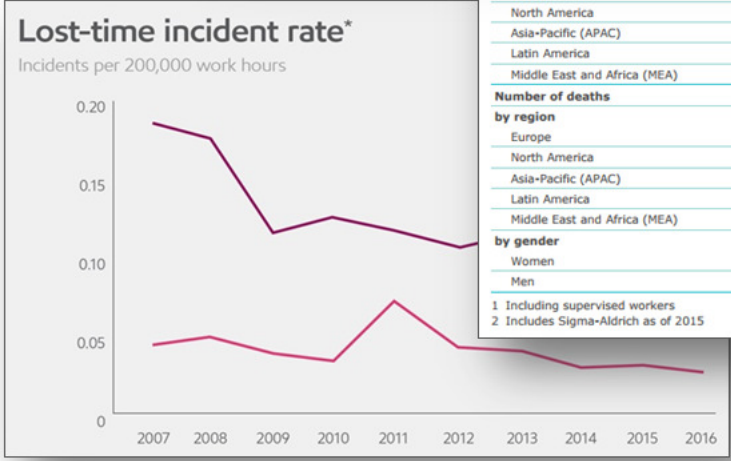
# The focus on incident rates often leads into individual targets

The internet search on safety performance results predominantly in lagging indicators



**Lost-Time Incident Rate\* 2011 to 2016**

	2011	2012	2013	2014	2015	2016
<b>Number of Employees</b>	146,200	150,900	130,600	129,200	123,200	89,556
<b>Lost-Time Incident Rate</b>	2.2	2.3	1.9	1.9	1.6	1.29

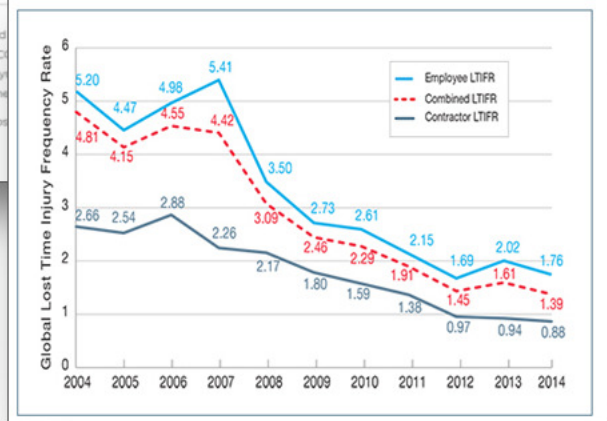


**Incidents resulting in missed days of work per one million man-hours)**

	2015	2016
<b>by region</b>		
Europe	3.7	2.9
North America	0.9	1.0
Asia-Pacific (APAC)	0.3	0.5
Latin America	2.1	1.3
Middle East and Africa (MEA)	1.8	0.9
<b>Number of deaths</b>	<b>0</b>	<b>2</b>
<b>by region</b>		
Europe	0	0
North America	0	0
Asia-Pacific (APAC)	0	1
Latin America	0	1
Middle East and Africa (MEA)	0	0
<b>by gender</b>		
Women	0	1
Men	0	1

1 Including supervised workers  
2 Includes Sigma-Aldrich as of 2015

The data above reflect the total collected employees who are on the payroll of TCC employees who are not on a facility's payroll and provides the details, means, me...  
\*Our lost-time incident rate is based on lost hours worked.







# Lagging vs. Leading indicators

## Why do we use lagging indicators?

- they are easy to measure
- they are accurate
- We have them since years
- We can compare us with others
- We can link them with punishment or bonuses
- We believe “when we measure them, we can control them”
- They seem to support “Zero Accident” visions

## But they are useless for...

- Changing the outcomes
- Deciding on actions
- Predict / forecast the future
- Motivating people or giving them a vision

*A lagging indicator is an output measurement, for example; the number of accidents on a building site.*

*A leading indicator is a predictive measurement, for example; the percentage of people wearing hard hats on a building site*





0 incidents  $\neq$  Safety

# Influencing the future requires different types of measurement

## To influence the future, a different type of measurement is required

- one that is predictive rather than a result, e.g.
  - if you want to increase safety, safety walks could be a predictive measure
  - If you want to decrease employee turnover, predictive measure could be to coach and train leaders
- Measuring leading activities provides you with the possibility to estimate results or at least tendencies.

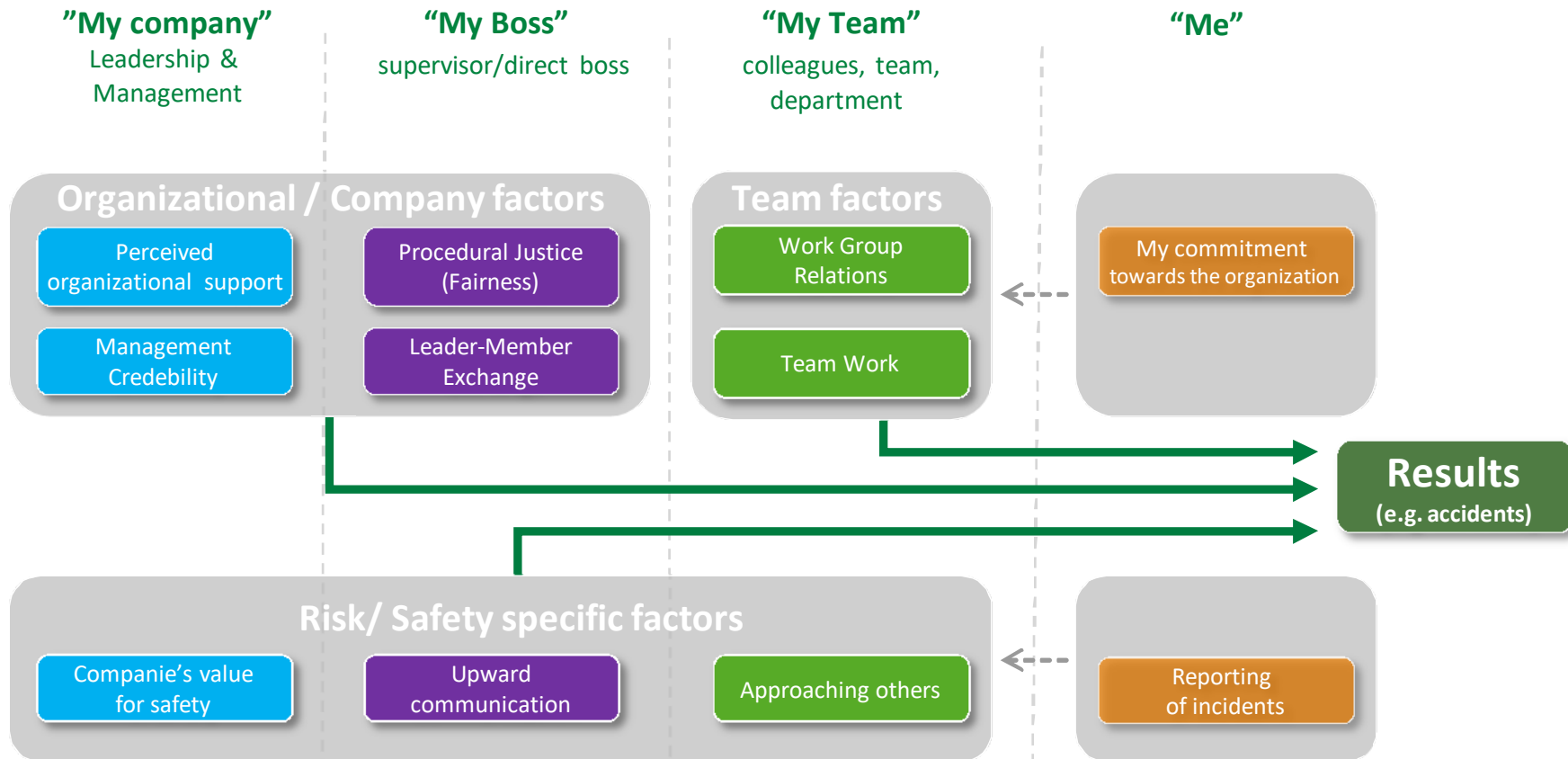
## Why don't we often use leading indicators?

- It is difficult to find the right ones
- It is difficult to report/monitor
- You need several leading indicators
- Acceptance and validity might be low



Quote of Peter Drucker, 1986

# Organizational Culture can be made a measurable indicator

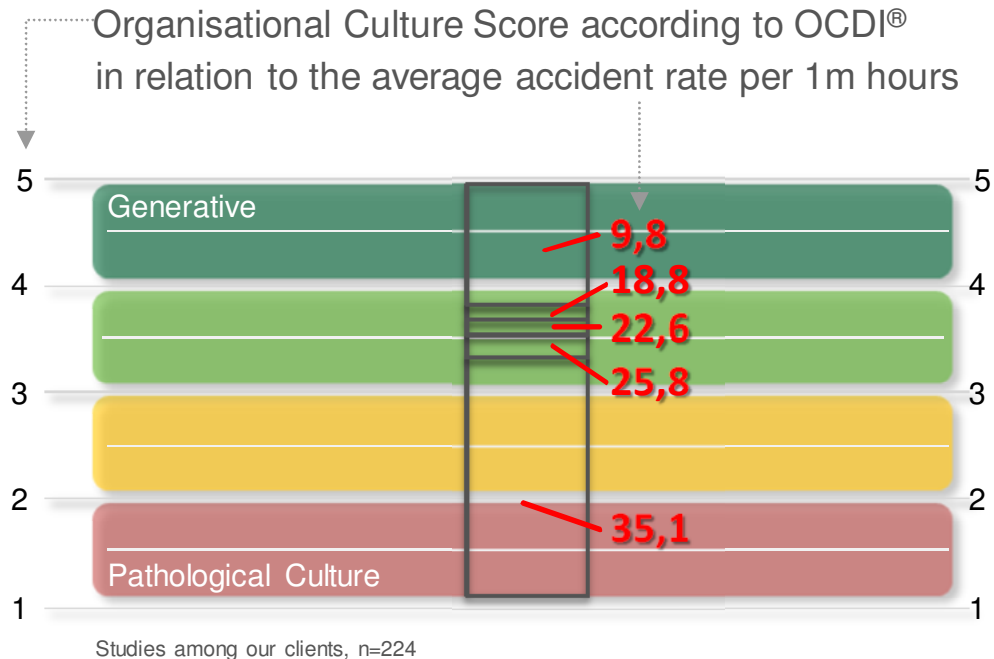


Measurable with DEKRA's Organizational Culture diagnostic Instrument® (OCIDI)





# Organizational Culture *is* a leading indicator

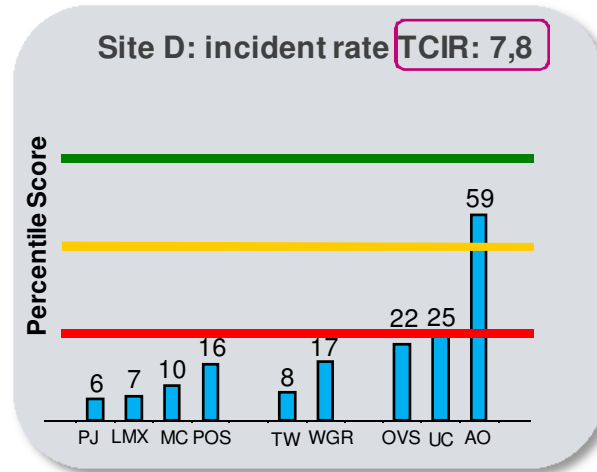
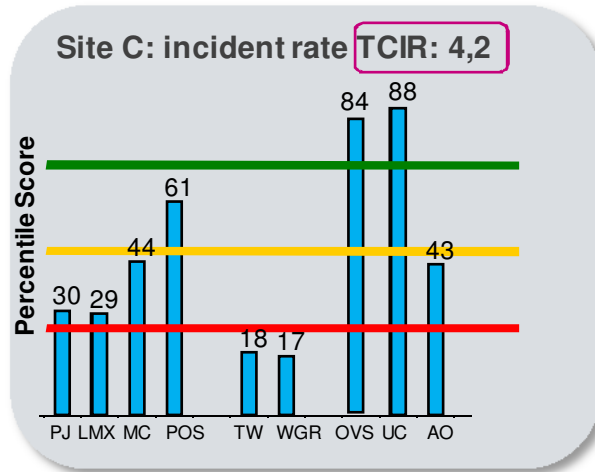
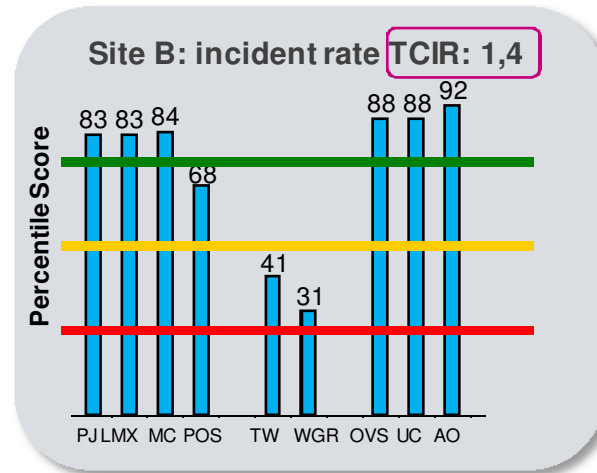
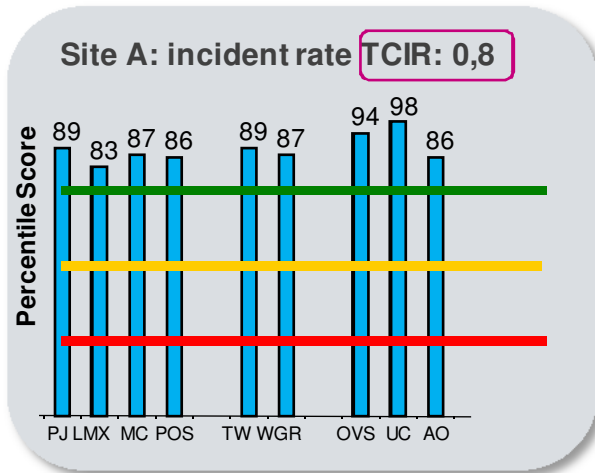


OCDI® Score	Average accident rate per 1 million hours worked	Sample size n=
3,76 – ...	9,8	45
3,64 – 3,75	18,8	45
3,53 – 3,63	22,6	45
3,40 – 3,52	25,8	45
... – 3,39	35,1	44

The Organizational Culture Diagnostic Instrument OCDI® measures 9 different culture dimensions. Employees and leaders score on organizational and behavioral questions. The raw scores range from 1 (“strongly disagree”) to 5 (“strongly agree”). The survey is a perception survey which means that sometimes the results show a gap between what is real and what is perceived to be the case.



# Real samples show the correlation between culture and incident rates



- PJ Procedural Justice
- LMX Leader-Member Exchange
- MC Management Credibility
- POS Perceived Organizational Support
- TW Team Work
- WGR Work Group Relations
- OVS Organizational Value for Safety
- UC Upward Communication
- AO Approaching Others

$$TCIR = \frac{200,000 \times \text{annual \# of injuries incurred}}{\text{annual total \# of hours worked}}$$

Recordable injury: one or more days lost from work, or a fatality



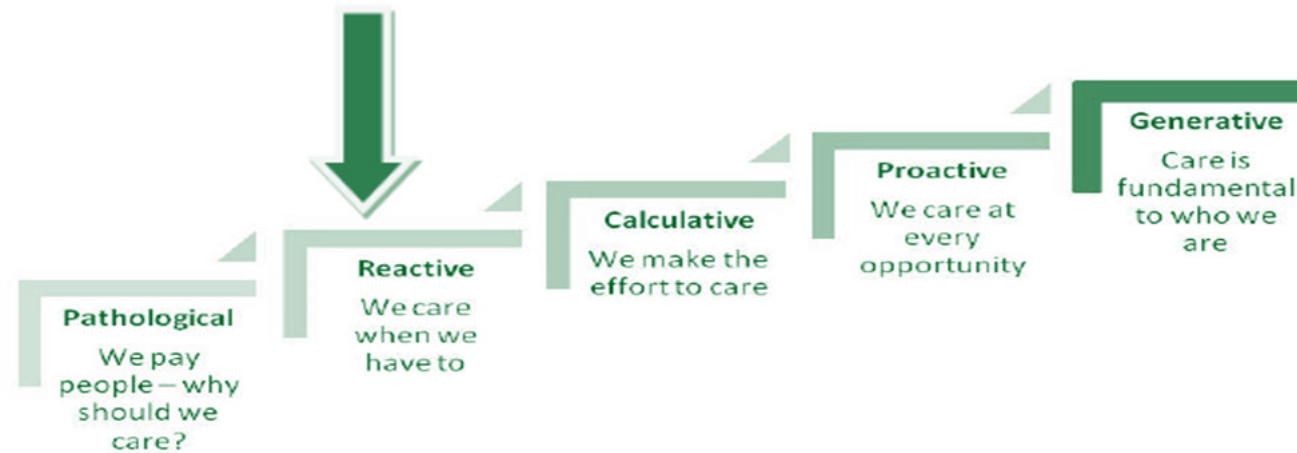


# What and How to measure?





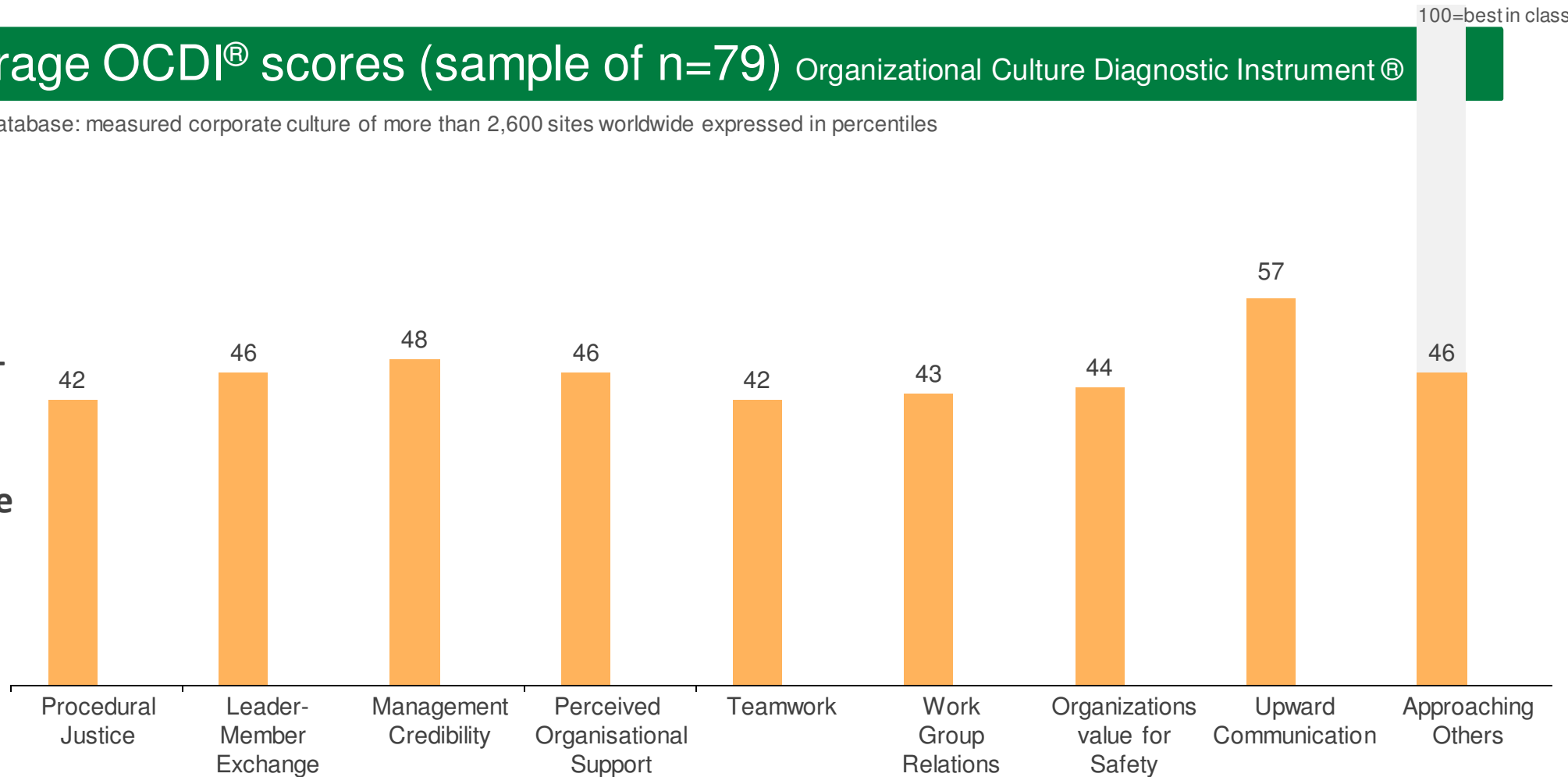
# Culture of Care Maturity Ladder<sup>®</sup>



# Average OCDI<sup>®</sup> scores (sample of n=79) Organizational Culture Diagnostic Instrument<sup>®</sup>

Norms database: measured corporate culture of more than 2,600 sites worldwide expressed in percentiles

Organizational Culture Percentile Score



Organizational Factor

Team Factor

Safety-Specific Factor

Baseline

Follow-Up

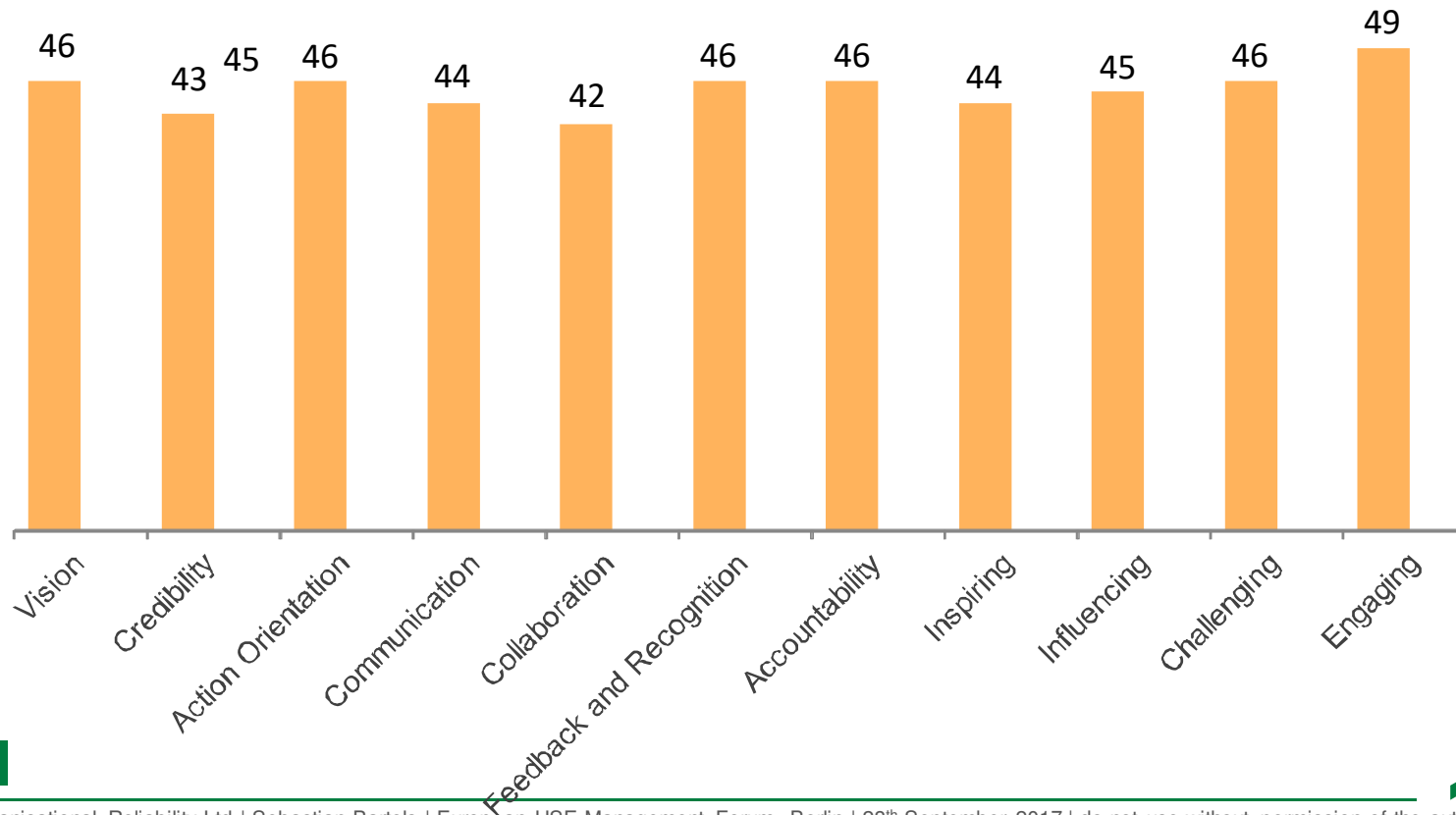


# Average Leadership Diagnostic scores (n=1200) (Leadership Diagnostic Instrument®)

Norms database: measured leadership best practice of thousands leaders worldwide expressed in percentiles

100=best in class

Leadership  
Best  
Practice  
Percentile  
Score



Baseline

Follow-Up





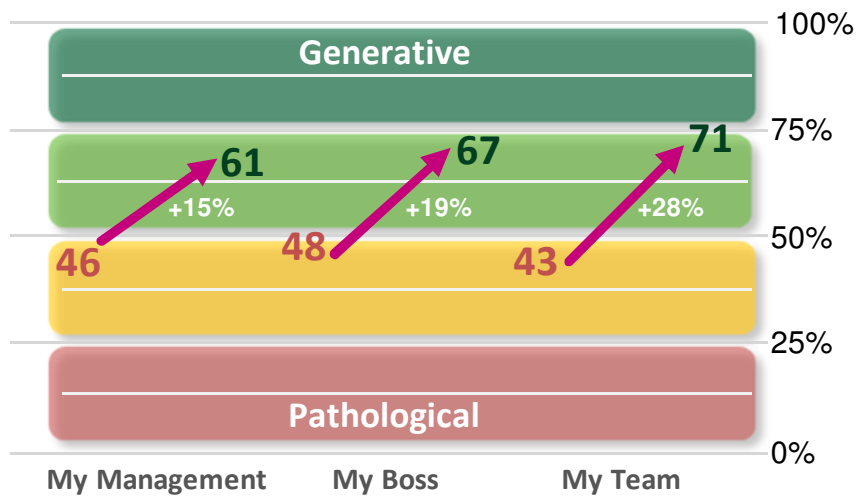
How to influence Safety and what to expect

**START**



# Culture up → Incident rates down

## Culture increases



Average Improvement of the measured company culture  
Evaluation of n = 79 locations (DEKRA clients)

Increasing culture through leadership development and employee engagement results in decreasing incident rates

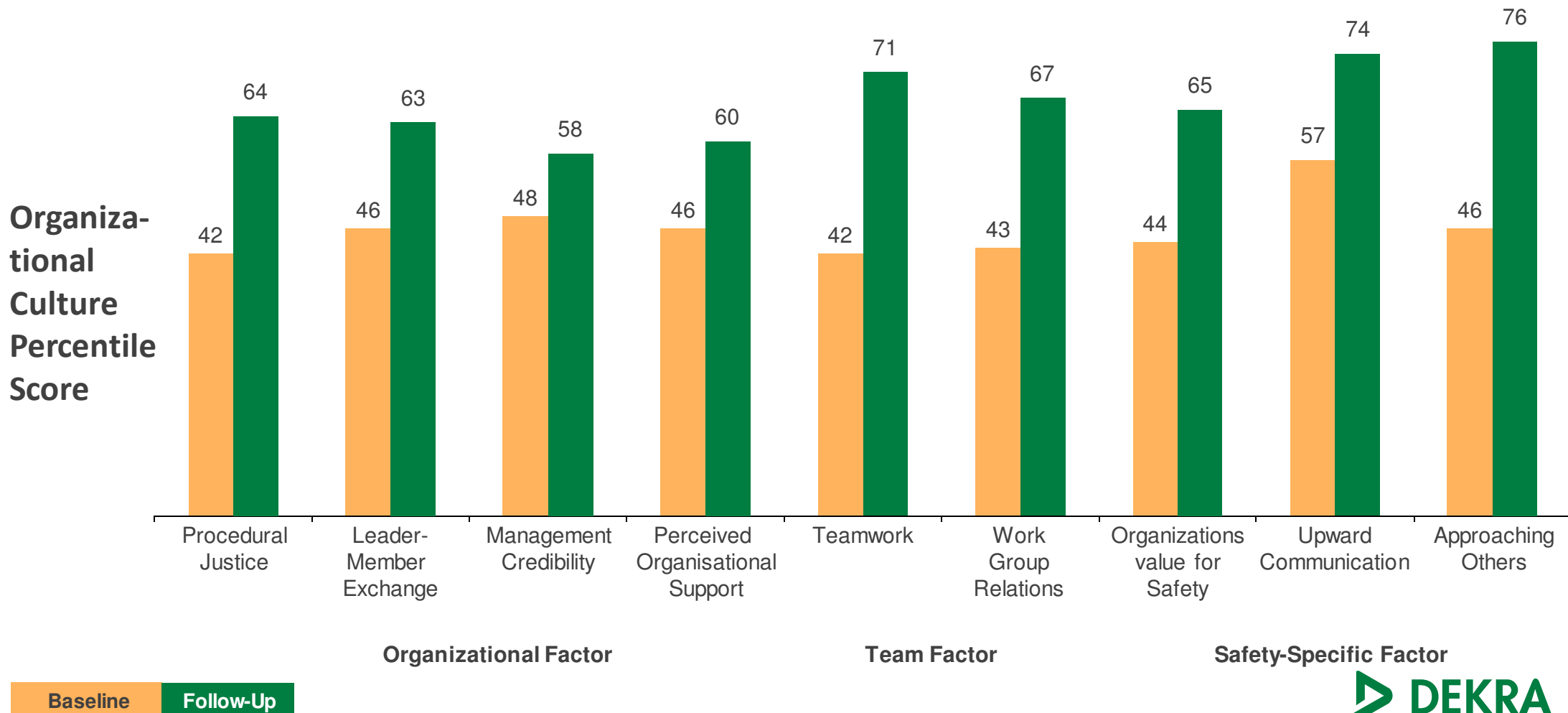
## Incident Rates decrease predictable



Average Improvement of the incident rates as a result of the intervention.  
Evaluation of n = 353 locations (DEKRA clients; at least 1 day lost time).

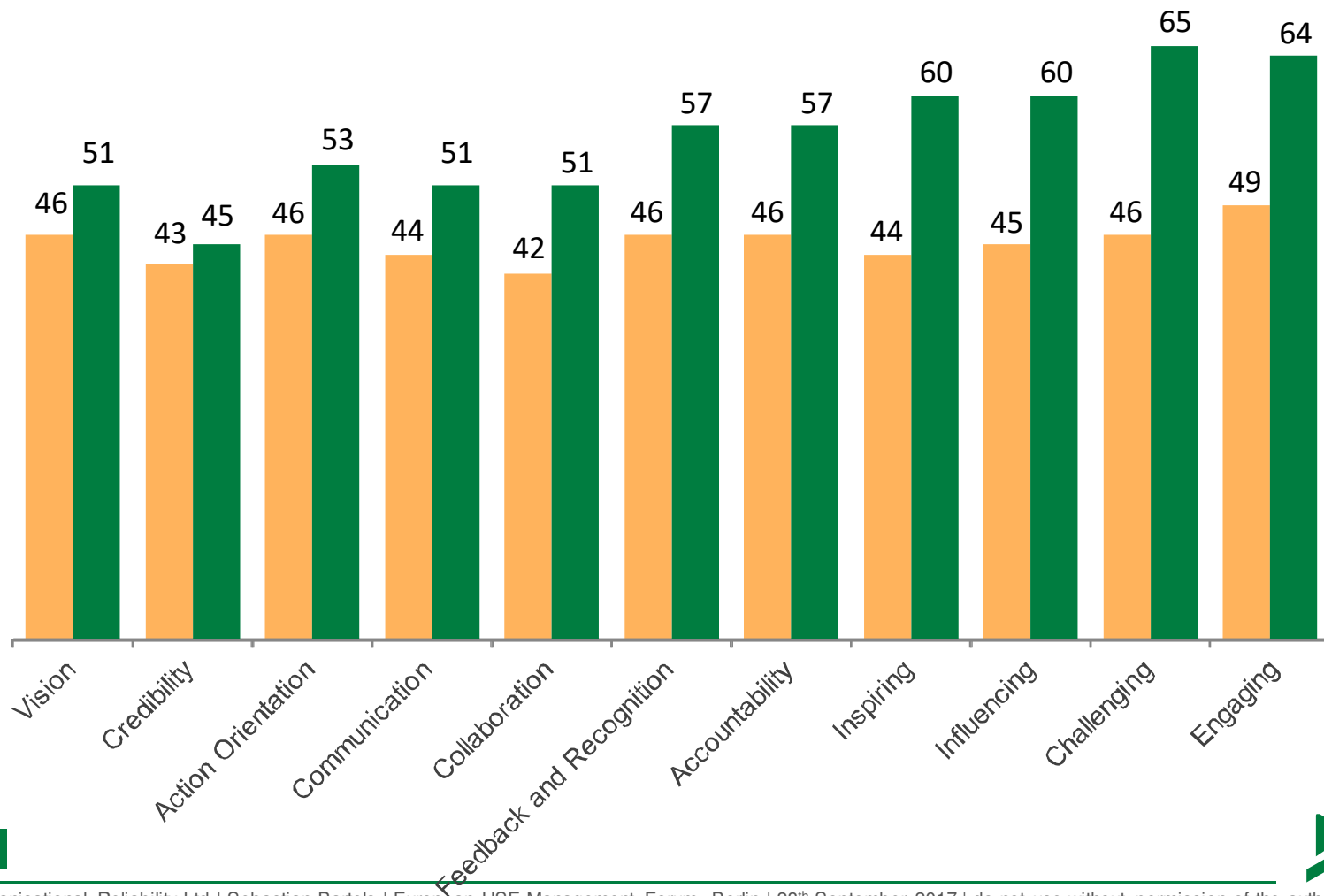


# Average OCDI<sup>®</sup> score improvement (n=79) Organizational Culture Diagnostic Instrument<sup>®</sup>



# Average Scores Leadership Diagnostic (n=1200) (Leadership Diagnostic Instrument®)

Leadership  
Best  
Practice  
Percentile  
Score



Baseline

Follow-Up



## Also other indicators can be improved

Industry	Topic	Performance Measurement	Measured Improvement	Description
Printing Factory	Quality	Redo incidents per 100.000 pieces	67%	Baseline performance showed a redo incident rate of 7.4 for the 3 months preceding DEKRA's intervention. After DEKRA's methodology was implemented the redo incidents were reduced by 67% after 6 months to a 2.4 average.
Heavy Equipment Distribution	Quality	Claims per 100,000 pieces shipped	38%	Baseline performance showed a rate of 36.1 for the 2 years preceding DEKRA's intervention. After DEKRA's methodology was implemented the claims were reduced by 38% after 6 months to an av. rate of 22.3.
Pharmaceutical Manufacturing	Human Error	Human Error Discrepancy Index	68%	Baseline performance showed a rate of 1.1 for the 2 years preceding DEKRA's intervention. After the methodology was implemented the discrepancies were reduced by 68% after 1 year to an av. rate of .35.
Specialty Chemicals	Quality	Tons out of specification	43%	Baseline performance showed a rate of 4.4 for the 1+ years preceding DEKRA's intervention. After DEKRA's methodology was implemented the discrepancies were reduced by 43% after 6 months to an average rate of 2.5.
Pharmaceutical Manufacturing	Human Error	several	22% / 43%	After DEKRA's methodology was implemented, errors were reduced by 22% in the 2nd quarter compared to the 1st quarter, and again by 43% in the 3rd quarter compared to the 1st quarter. No baseline data were available. The 1st quarter results served as proxy for baseline.







*"DEKRA Insight's approach to transforming our culture using safety as the lever just made absolute sense. The tools, technology and strategies enabled dnata to achieve positive, transformational change across a large and diverse global business."*

Stuart Hayman  
SVP Safety dnata



## CASE STUDY: dnata

### ORGANISATION:

Ground handling, cargo, catering arm of The Emirates Group. 28,000 employees. Headquartered in Dubai with operations in Middle East, Europe, Asia, Australia and Latin America.

### CHALLENGES:

Leadership saw the need to transform their culture around safety. Employees equated "safety" with aircraft damage.

### APPROACH:

Our partnership with dnata began in 2013 with a global culture assessment and the global implementation of our behaviour-based safety system. Based on assessment findings, we expanded the scope to include establishing executive and local governance structure for the change initiative and cascaded safety leadership development.

To date, 2,200 supervisors have had skills building workshops and in-field coaching; 500 managers, all regional leadership teams, and the executive team have participated in leader assessments and individual coaching. We helped dnata develop new leading and lagging safety metrics. In addition, we introduced a process to identify and address the potential for serious injuries and fatalities.

### RESULTS:

[Client holding specific results confidential.] dnata has seen tremendous improvement year over year in reducing overall injury rate, measurable potential for severity, equipment damage, and improvement in key business metric of On Time Performance (OTP).

Culturally, they have seen improved labour management relations; employees are more likely to stop a job to prevent an incident; team functioning has improved; people watch out for each other and freely approach supervisors with safety issues.

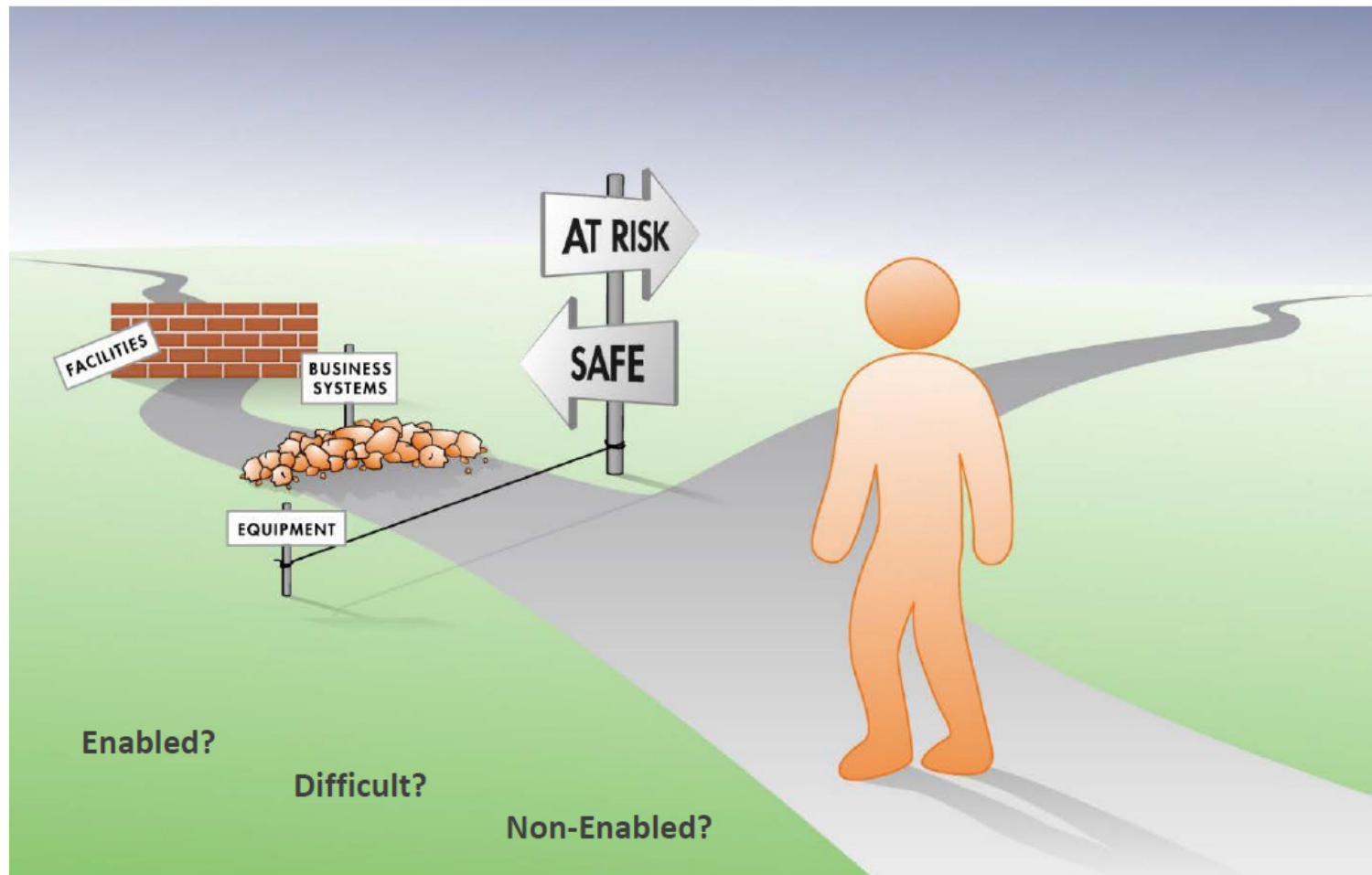
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What are successful ways to become safer



# What the organization and employees are doing



# What Leaders Are Doing

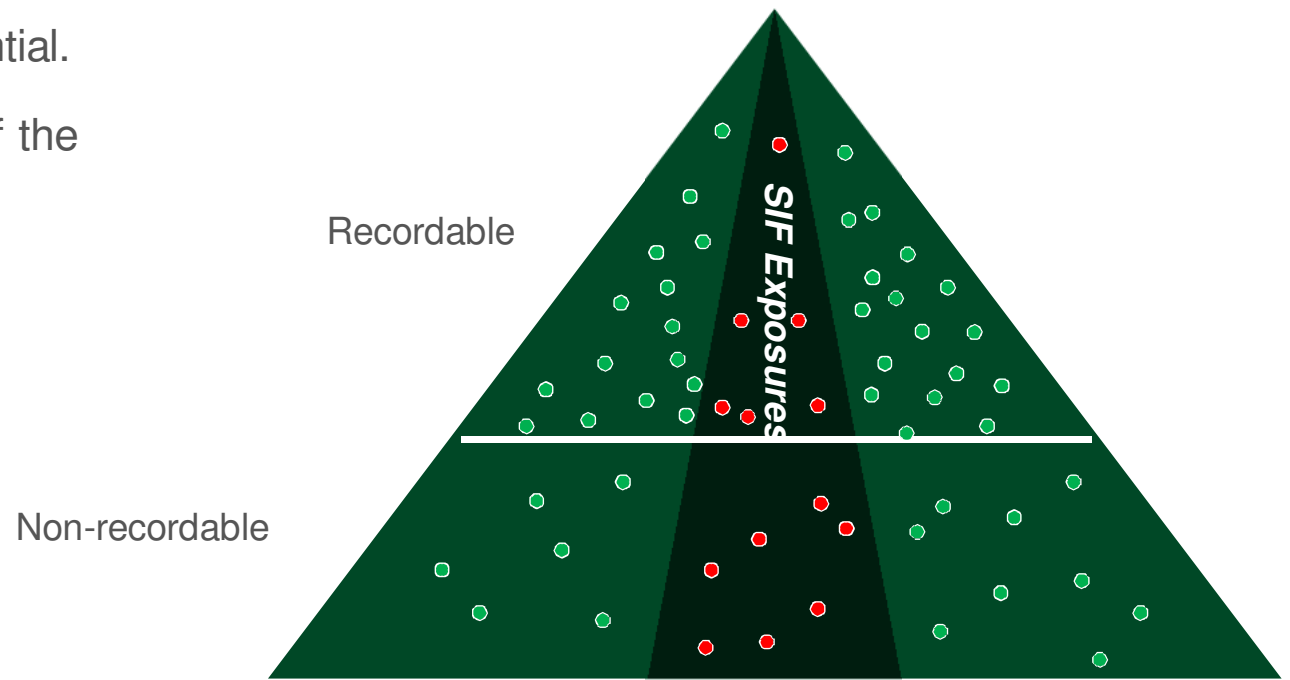
- Less about TRIR/LTIR, more about what happened, personal impacts, concerns, feelings.
- Keep case management vigor behind closed doors.
- Everybody is protected and counted.
- Climate supports and encourages near-miss reports.
- Leaders become “advocates for their workers.”
- Gather more info with live conversations, site visits.
- Never walk past.
- Focus on what really matters. Question critical exposures and controls, especially material risks.
- Zero tolerance for deviation from centerline, and authority to grant variances is tightly controlled
- Requirements for ROI are eliminated or reduced.





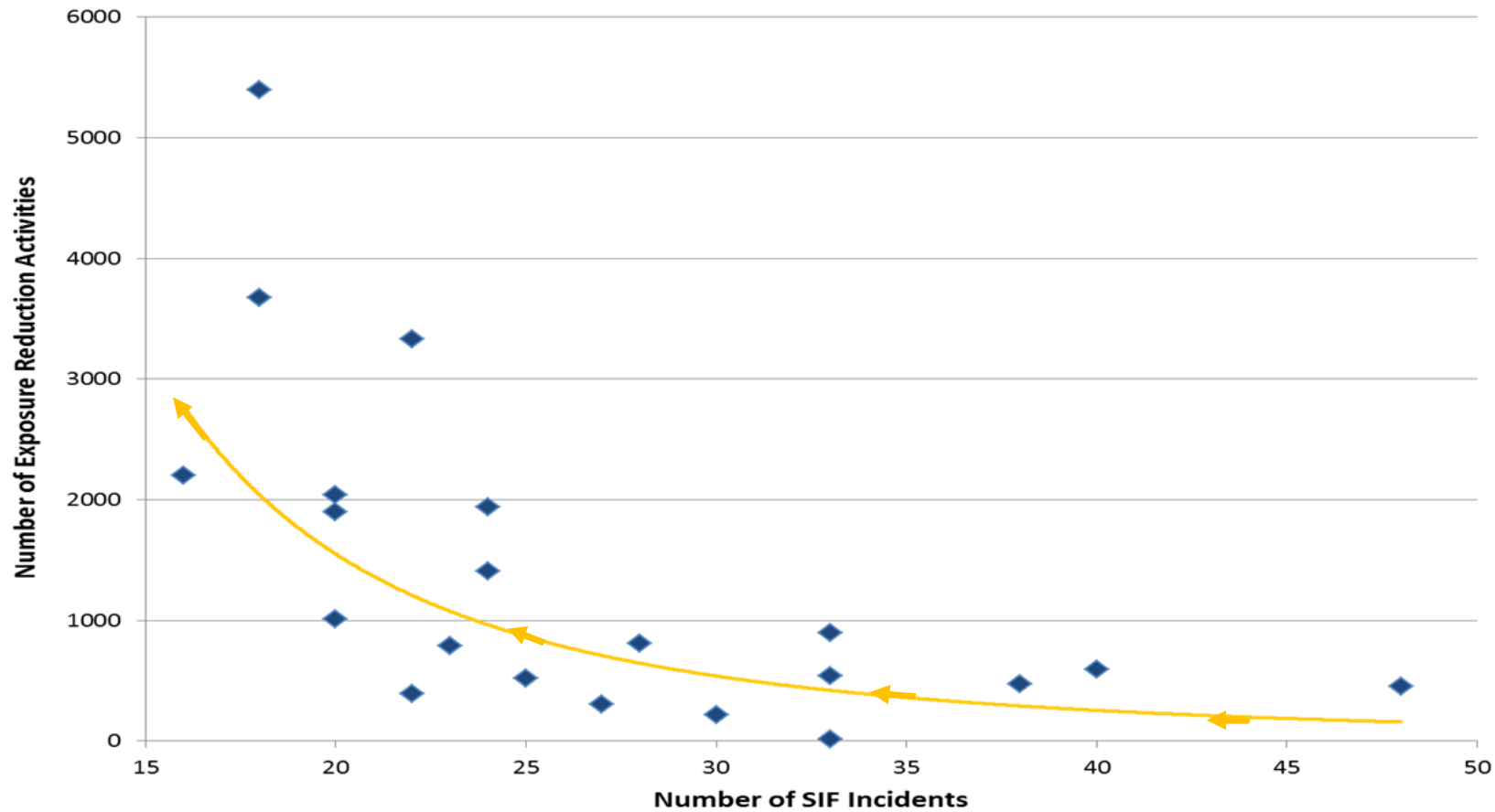
# What the Risk Management approach is doing

- Not all injuries have Serious Injury and Fatality (SIF) potential.
- A reduction of injuries at the bottom of the triangle does not correspond to a proportionate reduction of SIFs



Precursors: High-risk situations in which management controls are either absent, ineffective, or not complied with, and which will result in a serious or fatal injury if allowed to continue

# Exposure reduction activities correlate with decreasing SIF incidents



## Ideas for Leading Indicators...

- **% SIF Exposure** and **Ratio SIF Actuals to Potentials**
- **Ratio** “X” SIF cases reviewed/”Y” SIF cases reported (by executive management)
- **SIF Repeats** % reduction in repeat SIF events, reduction in repeat SIF rate
- **Preventive Action Extension**  
(number of times implementation of corrective and preventive actions have been extended beyond deadline)
- **% Implementation of lessons learned**
- **% Leadership Best practices improvement**
- **% of exposure reduction** measures successfully **completed**

Thank You!

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