Highly Reliable Organizations

What Are They and What Traits Do They Display?

The Truth About Employee Safety

- Safety Improvements are slow to materialize
  - Why? The usual suspects:
    - Lack of time – 43%
    - Budget – 48%
    - Competing priorities – 48%
- Two of the biggest challenges for Safety Professional are:
  - Employee Engagement
  - Common Injuries
- The Third challenge:
  - Management buy-in for investing in safety

Management Mindset

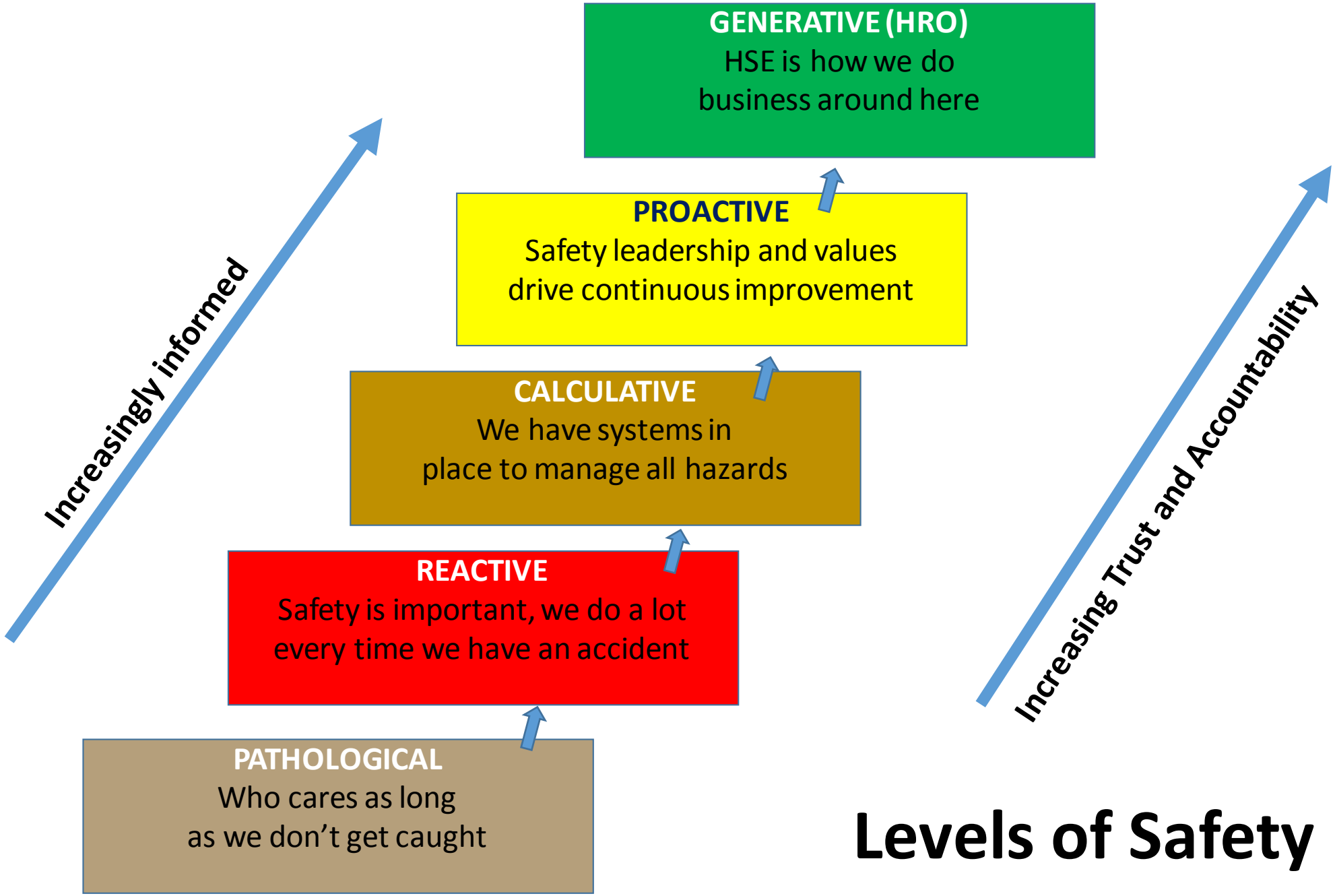
- Clearly, managers have figured out how to engage at least 70% of their workforce to outperform their competitors.
- We need to have the same shared relevance with safety.
- To accomplish this, you have to have effective data to identify the areas of needed improvement.
  - Easy to see in production
  - Much harder in safety
- It takes a mindset change to get there.

What Are Highly Reliable Organizations?

High reliability organizations are organizations with systems in place that make them exceptionally consistent in accomplishing their goals and avoiding potentially catastrophic errors.

Examples: nuclear plants, airline industry, petro-chemical industry

To do this: Best Practices have to be identified and established, metrics give us the direction for identifying them.



Levels of Safety

Characteristics of HROs: The AIER Model

The Leader's Role In Preventing Catastrophic Events

1. **Anticipation**. Fostering systems and behaviors that are sensitive to "weak signals" that may be indicative of increased risk of catastrophic events.
2. **Inquiry**. Making effective use of information to analyze, understand, and plan mitigation of risks, while making a conscious effort to overcome bias.
3. **Execution**. Monitoring, reinforcing, and verifying program execution, while staying true to the process.
4. **Resilience.** Developing and exercising the ability to react in ways that prevent upset conditions from becoming catastrophic events — and then learning from the experience.

Five Traits of High Reliability Organizations:

1. Sensitivity to operations (systems)
2. Reluctance to oversimplify the reasons for problems
3. Preoccupation with failure
4. Deference to expertise and
5. Resilience.

HROs are Sensitive to Operations

- Leaders and staff need to be constantly aware of how processes and systems affect the organization.
- In high reliability organizations, each employee pays close attention to operations and maintains awareness as to what is or isn't working.
- An ongoing concern with the unexpected.
- Hallmark actions include closing loopholes in processes where there is potential for employee harm, maintaining situational awareness, developing teams that speak up and paying attention to the frontline.
- There are no assumptions.
- This steady concentration on processes leads to observations that inform decision-making and new operational initiatives.

HROs are Reluctant to Accept “Simple" Explanations for Problems

- Broad, rational excuses can be attractive when processes don't work well.
- But high reliability organizations resist simplifications.
- While it is beneficial to simplify some work processes, high reliability organizations recognize the risks of painting with broad strokes and failing to dig deeply enough to find the real source of a particular problem.
- Requires constantly asking the “why” question and inviting others with diverse experience to express their opinions.
- The belief is that the more you’re immersed in something, the harder it is for you to objectively observe and question things that need questioning.
- Leverage new thinking to get the right answer!

HROs Have a Preoccupation With Failure

- Everyone is focused on errors and near-misses, learning from them and figuring out how to prevent them from happening again.
- Attention to detail is crucial.
- Finding and fixing problems is everyone's responsibility and is encouraged and supported by leadership.
- It is applicable to small inefficiencies and major failures, including production errors.
- Employees are encouraged to share their concerns for potential failures, which can help create best practices across departments.

HROs Defer to Expertise

- Leaders at high reliability organizations listen to people who have the most developed knowledge of the task at hand.

- Sometimes, those individuals might not have the most seniority, but they are still encouraged to voice their concerns, ideas and input — regardless of hierarchy.

High Reliability Organizations

Four organizational characteristics of the HRO limit accidents or failures:

1. Prioritization of both safety and performance and shared goals across the organization;

2. A “culture” of reliability (or, better, attitude toward reliability) that simultaneously decentralizes and centralizes operations allowing authority decisions to migrate toward lower ranking members;

3. A learning organization that uses “trial-and-error” learning to change to the better following accidents, incidents, and, most important, near misses;

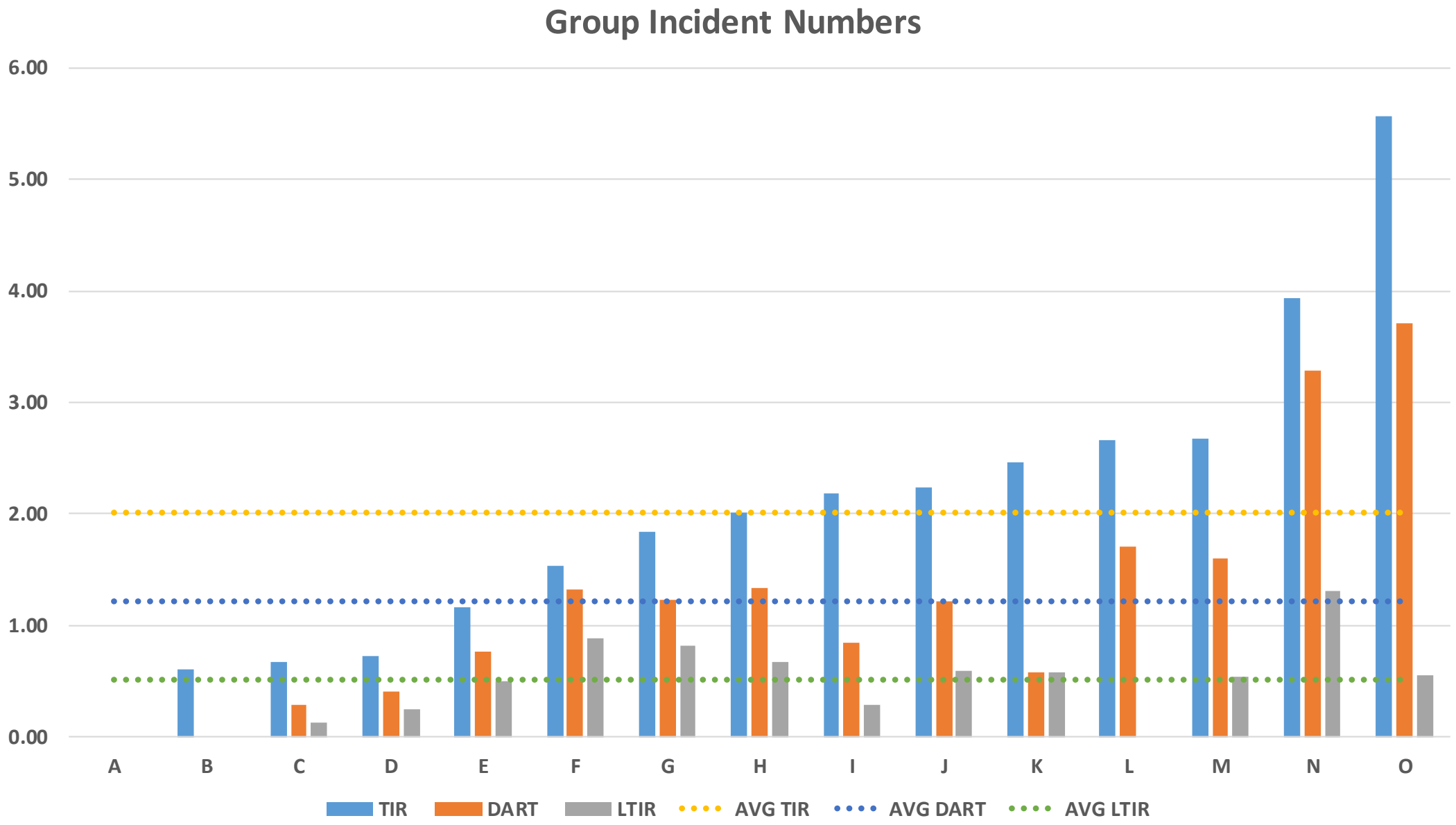
4. A strategy of redundancy beyond technology but in behaviors such as one person stepping in when a task needs completion

The Value of Safety Management Systems

- RCI Safety, (now known as Dekra Insight)
- 600 companies, 3600 locations
- Training (People to classes) 7,058,782
- Incidents 420,000
- Audits 58,179
- Corrective Actions 463,982
- BBS observations… 2,336,656
- RCI Staff:
  - 3 CSPs
  - 2 Retired Corporate Safety Directors
  - 6 programmers
  - Knowledgeable and experienced staff

Challenge: Safety is Hard!

- Organizations have limited time and money resources, where should they start to get the most impact?
- How can they tell if their efforts are successful?
- Why should companies all have to learn the same lessons over and over?
- How can they tell if they are improving?
- How can they set effective goals for injury reduction?


Group Incident Numbers
6.00
5.00
4.00
3.00
2.00
1.00
0.00
A
B
C
D
E
F
G
H
I
J
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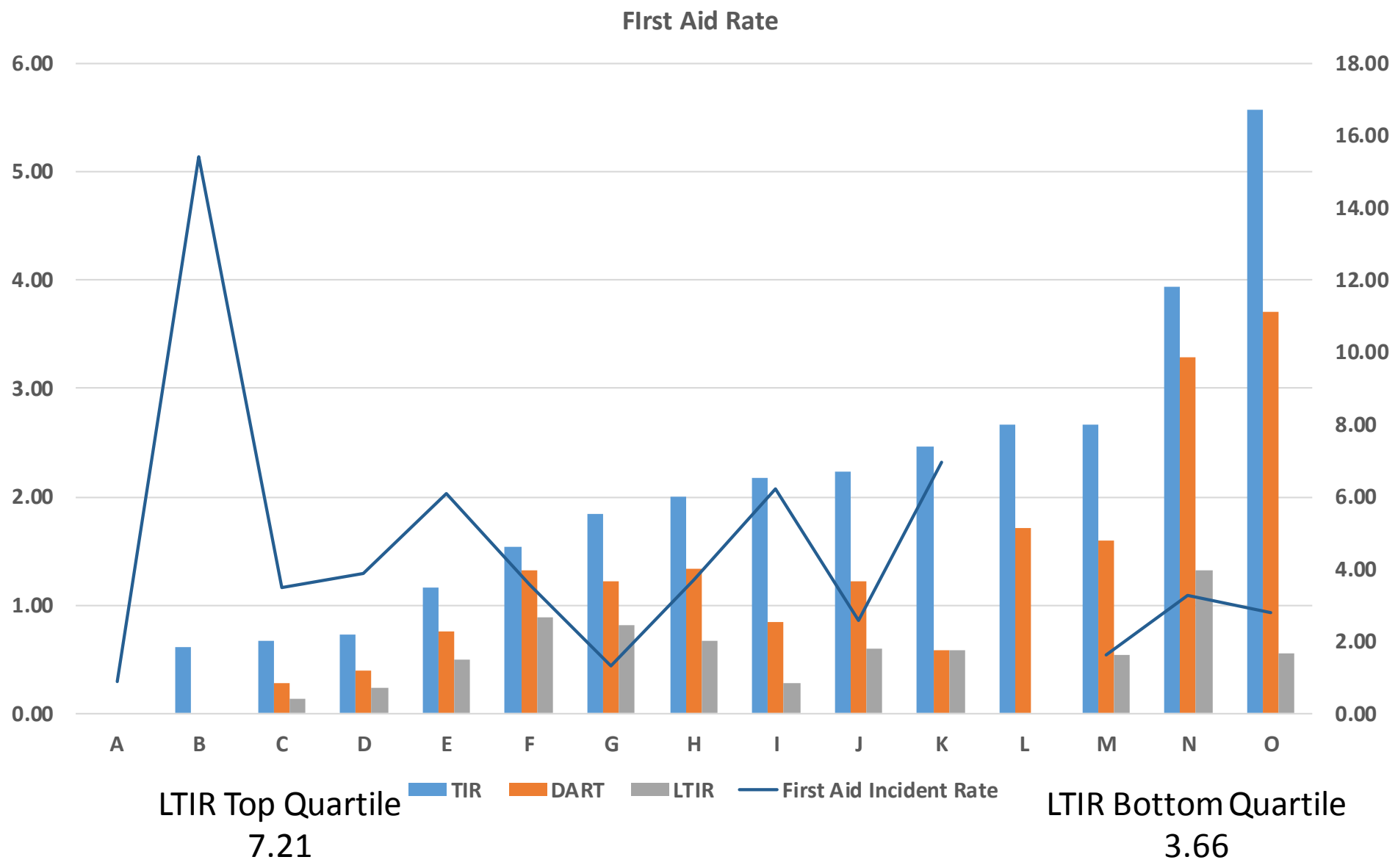
TIR
DART
LTIR
AVG TIR
AVG DART
AVG LTIR



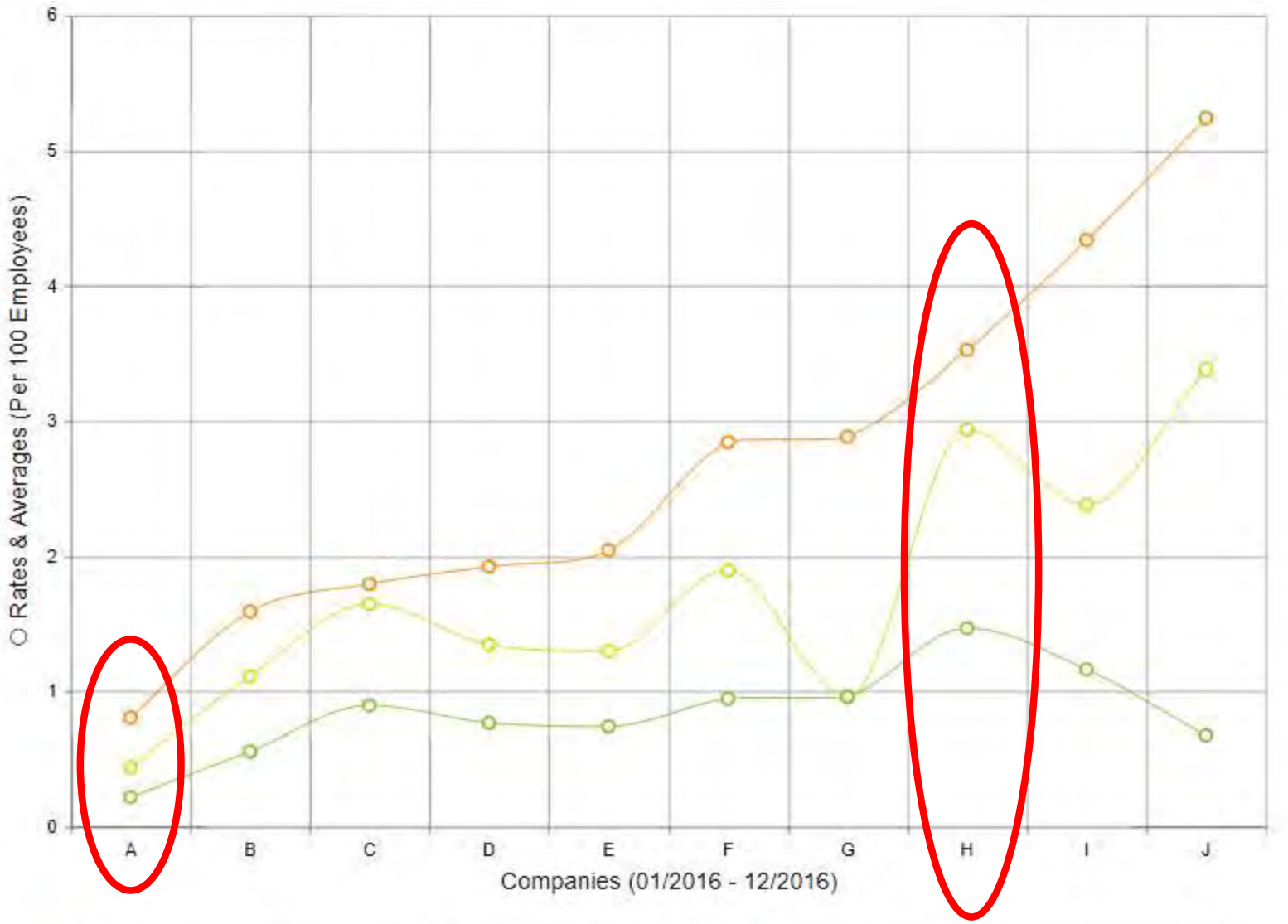
LTIR Top Quartile
7.21

LTIR Bottom Quartile
3.66

Benchmarking chart for 10 companies in the same industry

Why is “A” performing better than “H”?

What activities does “A” do that “H” doesn’t?



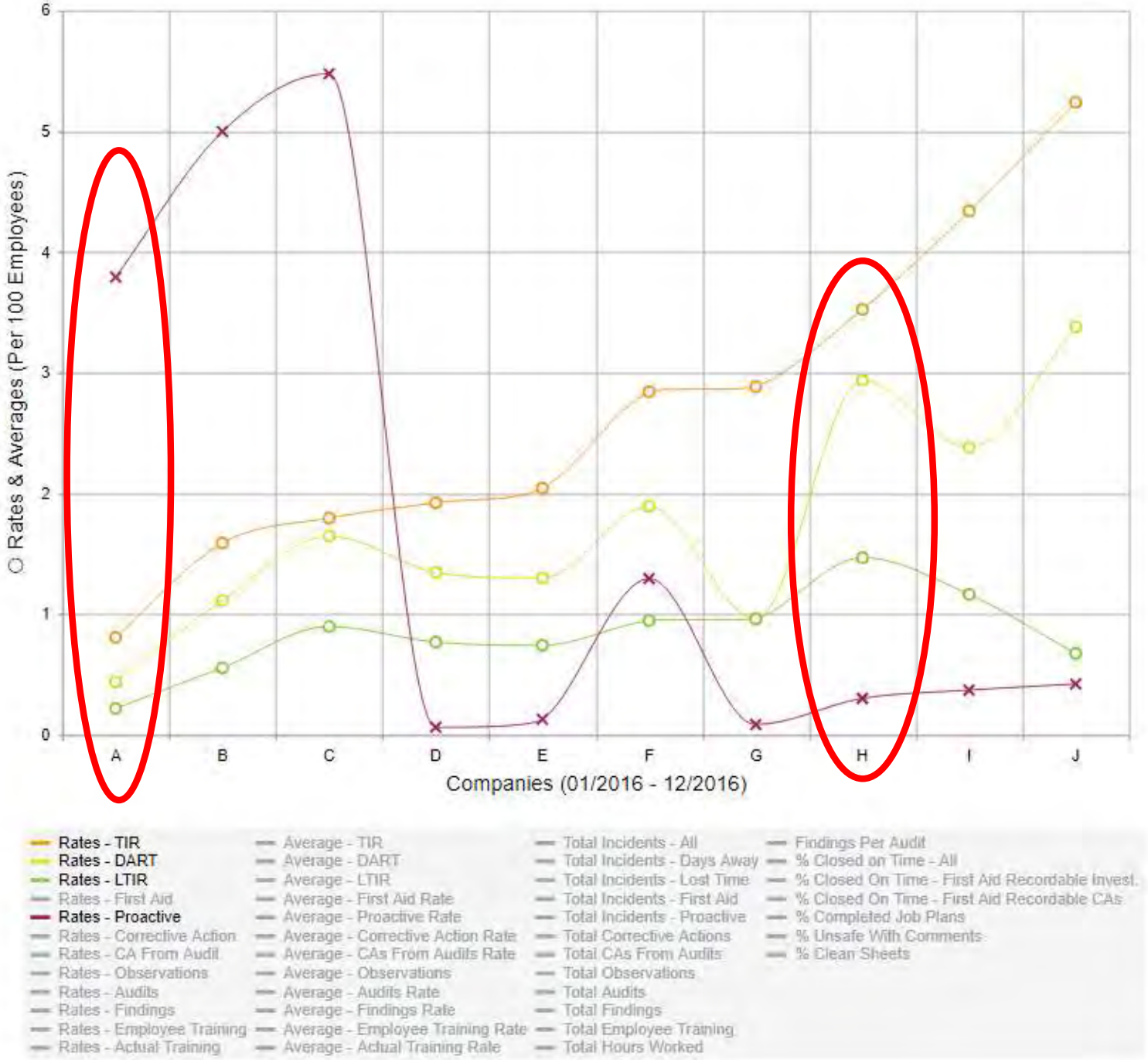
Rates - TIR
Rates - DART
Rates - LTIR
Rates - First Aid
Rates - Proactive
Rates - Corrective Action
Rates - CA From Audit
Rates - Observations
Rates - Audits
Rates - Findings
Rates - Employee Training
Rates - Actual Training

Average - TIR
Average - DART
Average - LTIR
Average - First Aid Rate
Average - Proactive Rate
Average - Corrective Action Rate
Average - CAs From Audits Rate
Average - Observations
Average - Audits Rate
Average - Findings Rate
Average - Employee Training Rate
Average - Actual Training Rate

Total Incidents - All
Total Incidents - Days Away
Total Incidents - Lost Time
Total Incidents - First Aid
Total Incidents - Proactive
Total Corrective Actions
Total CAs From Audits
Total Observations
Total Audits
Total Findings
Total Employee Training
Total Hours Worked

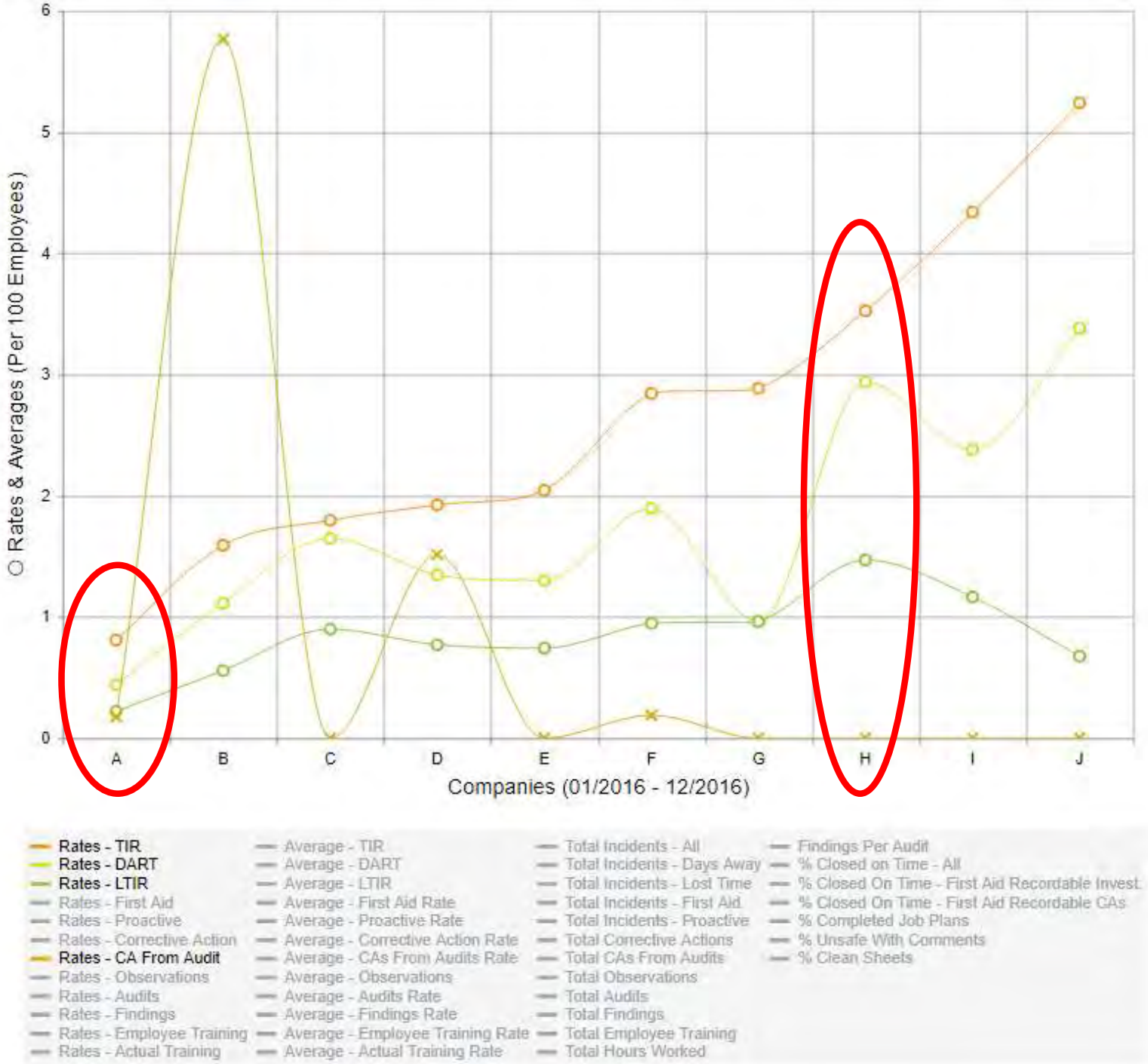
Findings Per Audit
% Closed on Time - All
% Closed On Time - First Aid Recordable Invest
% Closed On Time - First Aid Recordable CAs
% Completed Job Plans
% Unsafe With Comments
% Clean Sheets

Could it be Near Miss and other proactive activities?



Could it be Behavior Based Safety Observations?

Could it be corrective actions from Audit Findings?

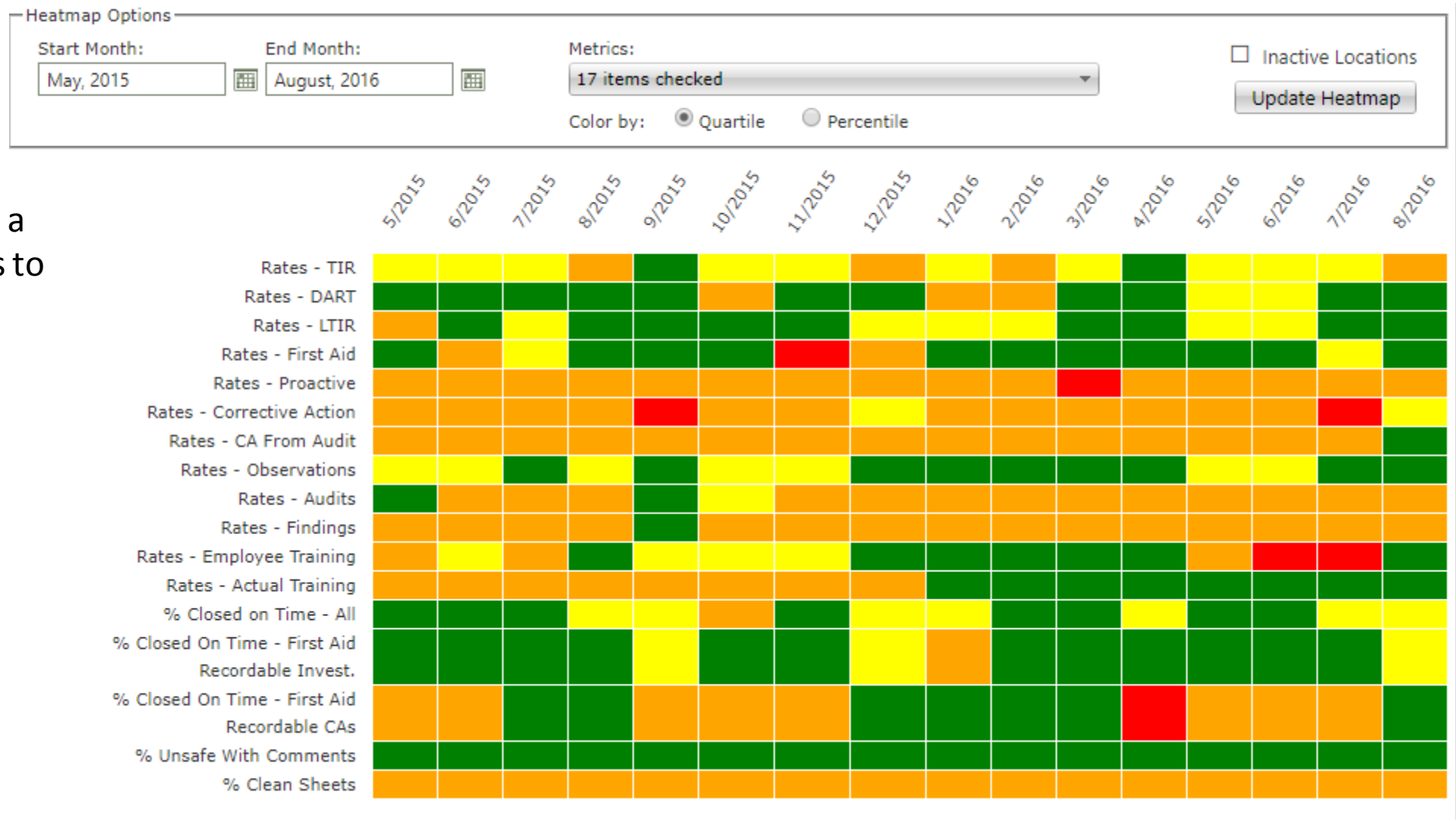


Looking Deeper

- Could the difference be from a combination of effects?
- How can I measure my overall performance against my peers?
- How do I know if I am improving?

Heat map view compares a company's over all efforts to the best results from the benchmarking group

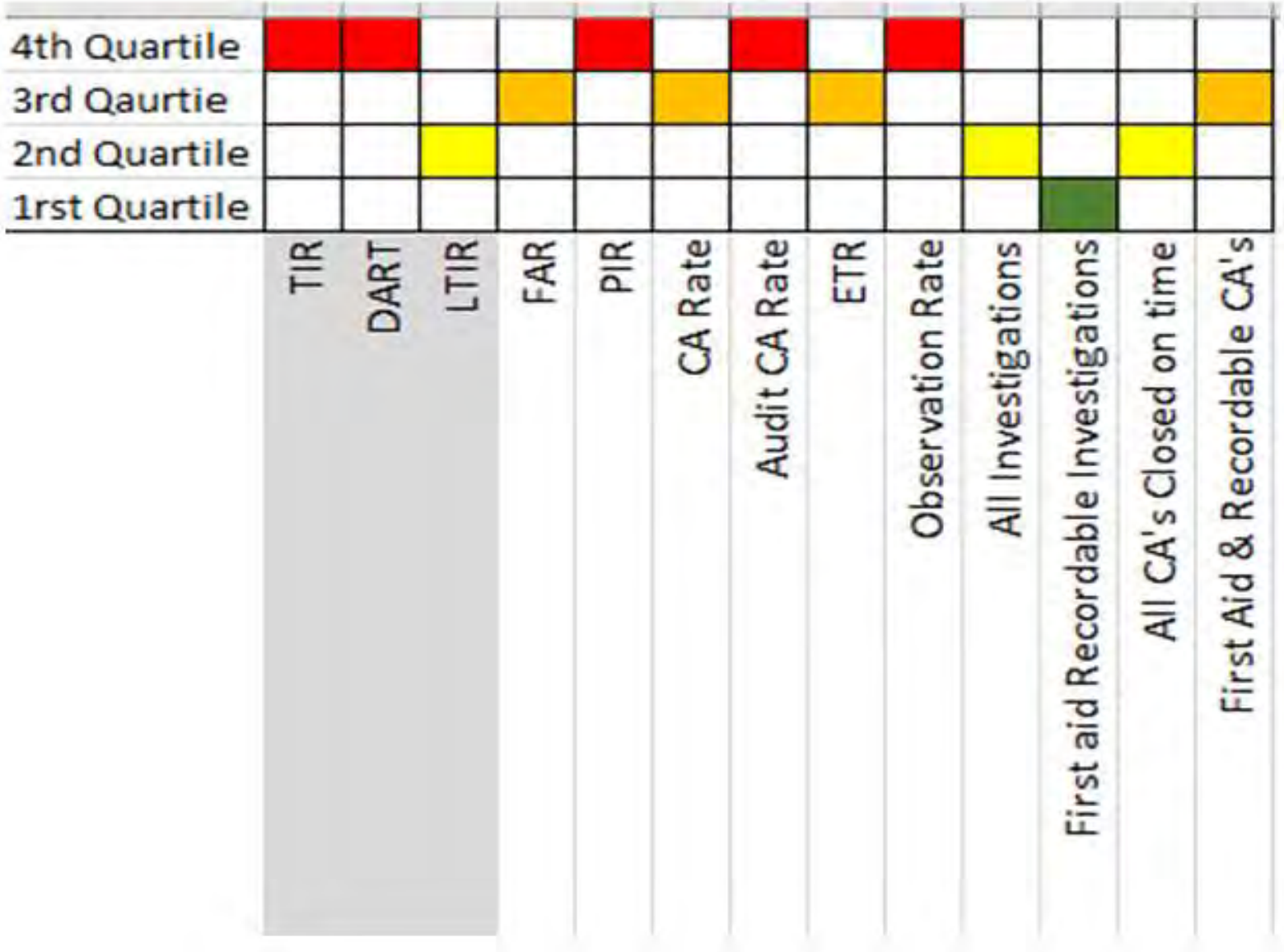
Visualizes improvement areas



Heat Map

- Compares performance in specific areas against best in class from bench mark group
- Results are shown in performance quartiles (normalizes different scales)
- Points out improvement areas for organizations
- Tracks performance over time, visualizes improvements or slippage
- Can compare to current best in class or historic best in class (norms)

Heat Map Snapshot



Heatmap Options

Start Month: January, 2016

End Month: December, 2016

Metrics: 17 items checked

Inactive Locations

Update Heatmap

	1/2016	2/2016	3/2016	4/2016	5/2016	6/2016	7/2016	8/2016	9/2016	10/2016	11/2016	12/2016
Rates - TIR	4	4	4	3	4	4	4	2	2	2	2	2
Rates - LTIR	4	4	4	3	4	4	4	2	2	2	2	2
Rates - DART	4	4	4	3	4	4	4	2	2	2	2	2
Rates - First Aid	3	3	3	3	3	4	4	2	2	2	2	2
Rates - Proactive	3	3	4	3	3	4	3	1	1	1	1	1
Rates - Corrective Action	4	4	4	4	4	4	4	1	1	1	1	1
Rates - CA From Audit	4	4	4	4	4	4	4	1	1	1	1	1
Rates - Observations	3	3	3	3	3	3	3	1	1	1	1	1
Rates - Audits	3	3	3	3	3	3	3	1	1	1	1	1
Rates - Findings	3	3	3	3	3	3	3	1	1	1	1	1
Rates - Employee Training	2	2	2	3	2	2	2	4	4	4	4	4
Rates - Actual Training	2	2	1	2	1	1	2	4	4	4	4	4
Findings Per Audit	1	1	1	1	1	1	1	4	4	3	4	4
% Closed on Time - All	1	2	2	2	2	2	2	1	1	1	4	3
% Closed On Time - First Aid Recordable Invest.	1	1	2	1	2	1	1	1	1	1	3	4
% Closed On Time - First Aid Recordable CAs	1	1	2	1	1	2	1	1	2	1	3	4
% Completed Job Plans	4	4	4	3	3	3	4	3	4	3	4	4

= lowest ranking

Number denotes quartile ranking

Your Web Page Name

http://applications.rci-safety.com

Logo

Company Name

User Name Logout

Home › Performance Insight Dashboard

Metrics Dashboard | Command Center | Quick Entry | Suggestions

Suggestions

Target Metric

TIR

Projected Impact

High Low

Higher priority

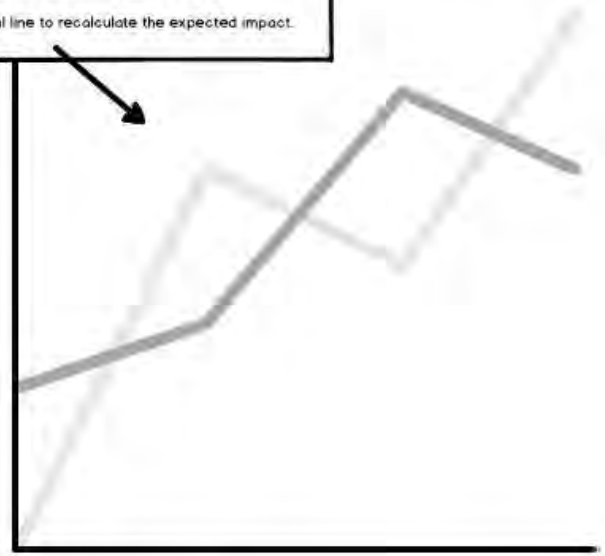
Lower priority

Increase Audits by 20%	Create New Goal
Increase % Compliant Training to 80%	Create New Goal
Increase Time Allotted for Investigations by One Week	Create New Goal
Reduce word count in Unsafes Comments to less than 300	Create New Goal

This chart would show the expected decrease of the relevant target metric with respect to the adjustment of the correlated metric. It should show a graph fitting a polynomial equation and the suggestion should equal either the global maximum or the global maximum of the derivative, based on a rule set. This guarantees the highest impact before getting into diminishing returns. In most cases, the global maximum will suffice but in cases in which it nears an impossible objective, the derivative can be calculated to find the greatest prospective rate of change.

This would allow the user to visualize the difference in impact as the objective is deviated from.

The chart could be interactive wherein the user drags a vertical line to recalculate the expected impact.



Projected Impact:

Stands to reduce TIR to 56 by end of Q3

The projected impact. This would be updated based on the graph setting, target metric, and suggestion hover.

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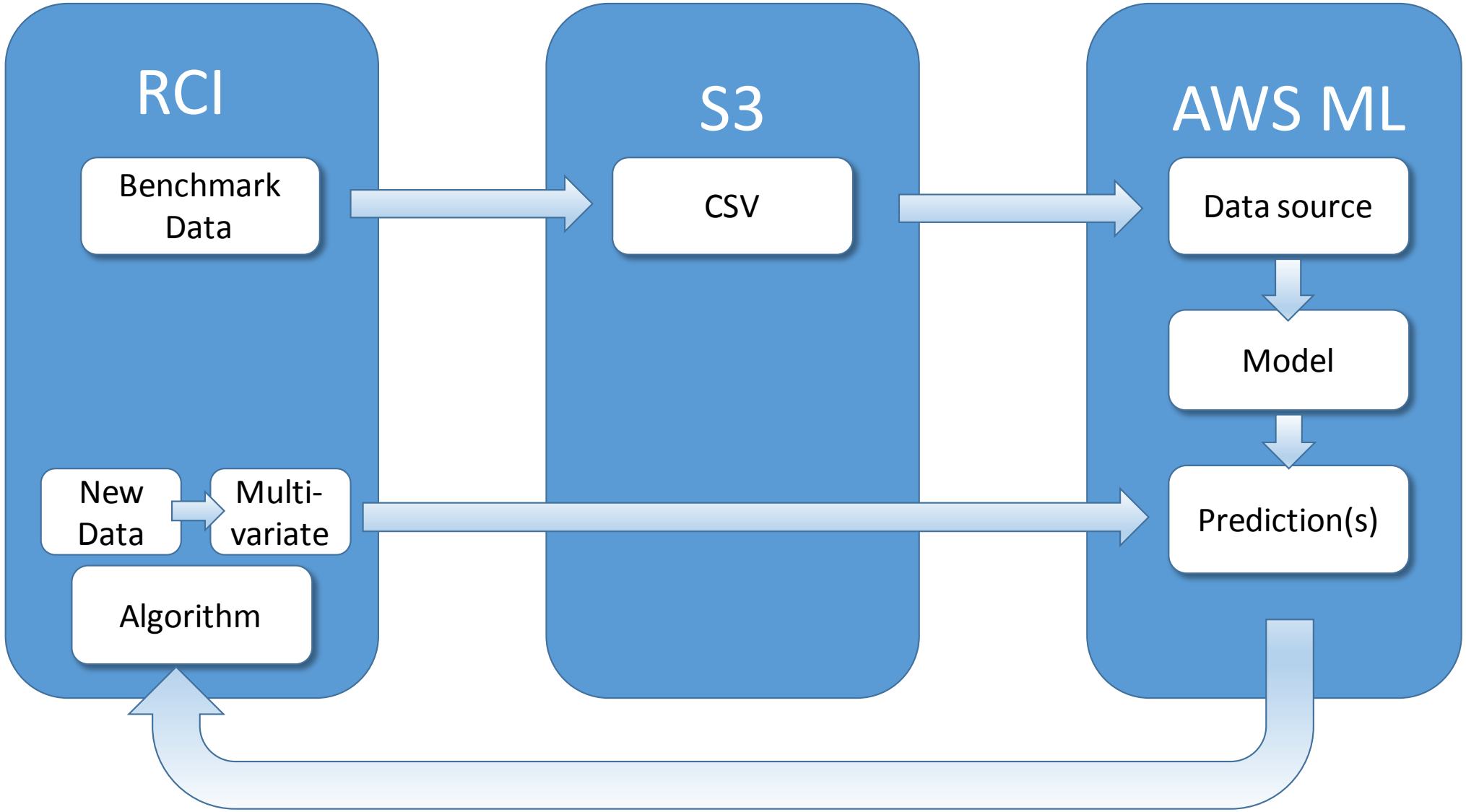
Machine Learning Model



Machine learning and suggestions

- Develop algorithms to identify highest impact improvement areas
- Use machine learning to offer suggested actives to improve performance
- Allow organizations to set “SMART” goals based on learning to develop new KPI’s
- Continuous improvement…. System always learns.

Plan for Implementation

1. Benchmark injury rates against peers to understand current performance
2. Benchmark current efforts against best practices to identify highest impact improvement areas to lower injury rates
3. Use machine learning to suggest and measure activities, help clients develop smart goals and new KPI’s
4. Loop… system learn offering clients continuous improvement

Our Next Steps

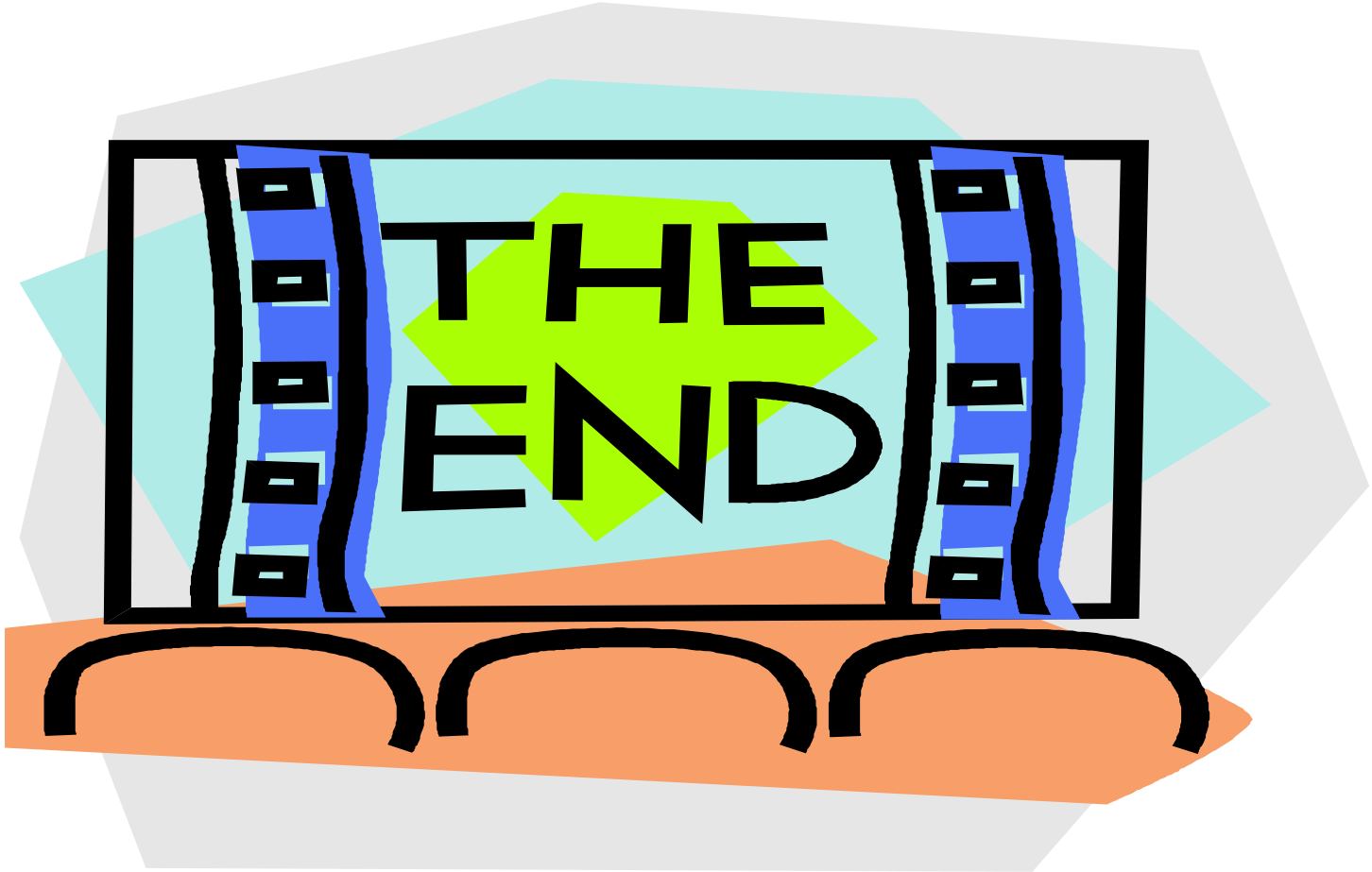
- Continue searching for the “Best Practices” used by those who have low injury rates.
- Keep investigating to develop a program to help companies with high or rising injury rates.
- Help people understand that it takes more than just good systems (compliance), it takes commitment as well.

Closing Points

- Exciting potential tool to help manage a company's safety performance.
- Is this the next evolution in safety management?
- Results are based against Best Practices of the best companies.
- Need to have a safety management system and must put valid data into the system, including employee hours.
- All of this is coming from data, not opinions.

Questions?

Thanks!!



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