

Using Performance Measurements to Keep You on Track



Rick Theriau, vPSI Canada Ltd Calgary, Alberta

Rick recently retired from Halliburton Group Canada after 32 years of leadership and engagement with each of the Canadian product service lines and specialized within service quality improvement and efficiency while leading the continuous improvement efforts on health, safety and environmental initiatives.

He believes in giving back to the energy industry and has been assisting Energy Safety Canada, Enform and PITS since 2002 as a thought leader on many successful industry initiatives. These have included leading the teams that compiled IRP #7, IRP #8, Chemical classification, Contractor Management and currently is involved with the Fit for Duty initiative.

Rick is also the Canadian director of operations for RONEsoft software company and one of the founders. His professional education has included becoming a Petroleum Engineering Technologist, a Registered Environmental Manager and a Canadian Registered Safety Professional.

rickt@vpsigroup.com



Norman Ritchie, vPSI Group, LLC Houston, Texas

Norman Ritchie was educated as a Mechanical Engineer at the University of Glasgow in Scotland, He has 35 years of experience of project and risk management, largely in the oil and gas industry.

As a Director of vPSI group, LLC, which he co-founded in 2003, Ritchie provides consulting and training in performance measurement and improvement, principally in the areas of risk, loss prevention, safety, human performance and organizational learning.

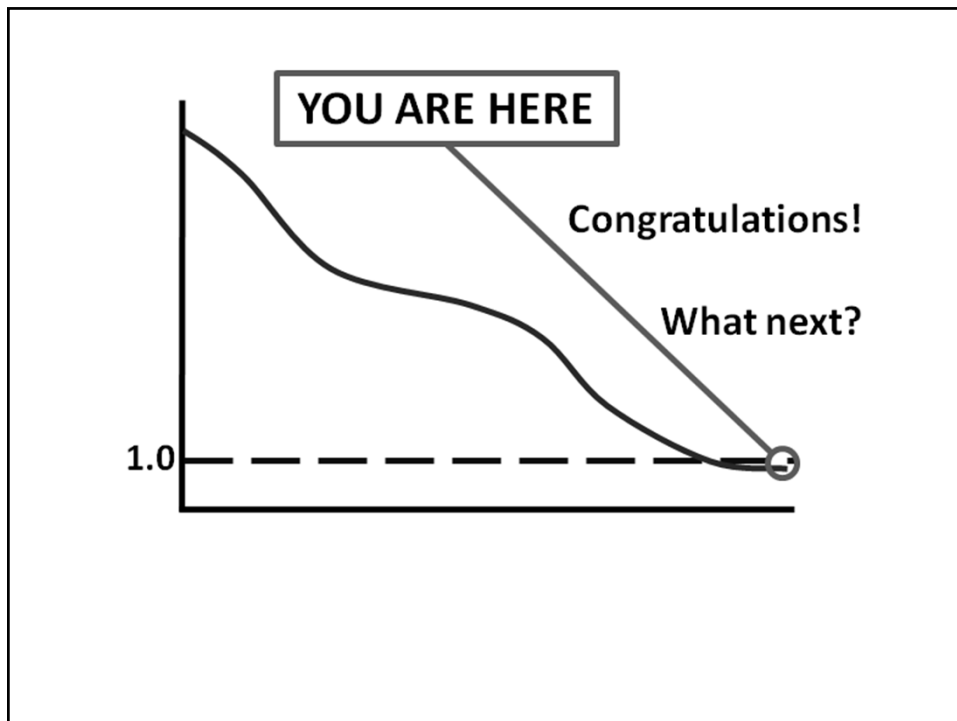
nritchie@vpsigroup.com

Using Performance Measurements to Keep You on Track

Poll Question #1

- What is the current “Total Recordable Injury Rate (TRIR)” for your organization / 200 000 hours?

TRIR	% of Organizations
<0.1	36
0.11 – 0.5	24
0.51 – 1.0	16
>1.0	4



Using Performance Measurements to Keep You on Track

Slide 7

“ZERO”

- Noble and worthy philosophical goal?
- Quantifiable?
- Attractive as an organizational goal?
- Easily defined?

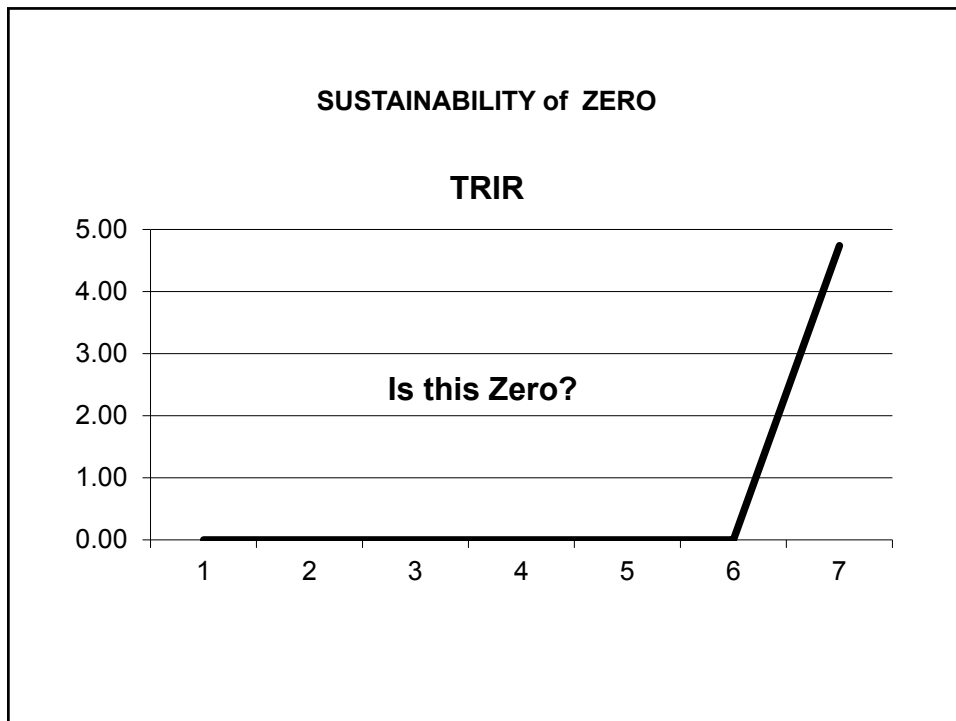
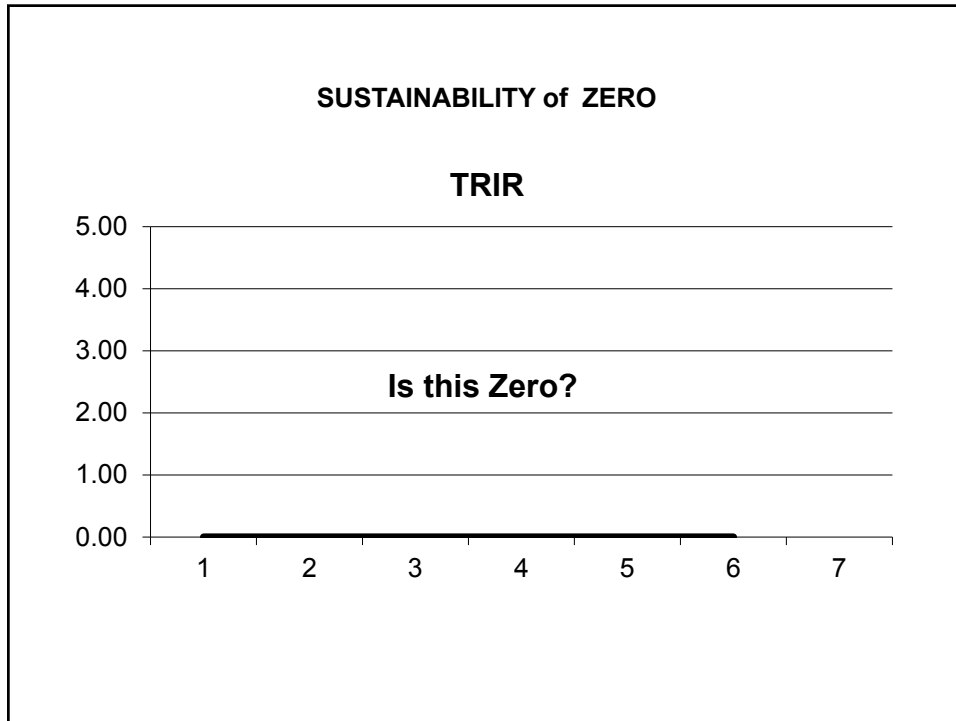


Slide 8

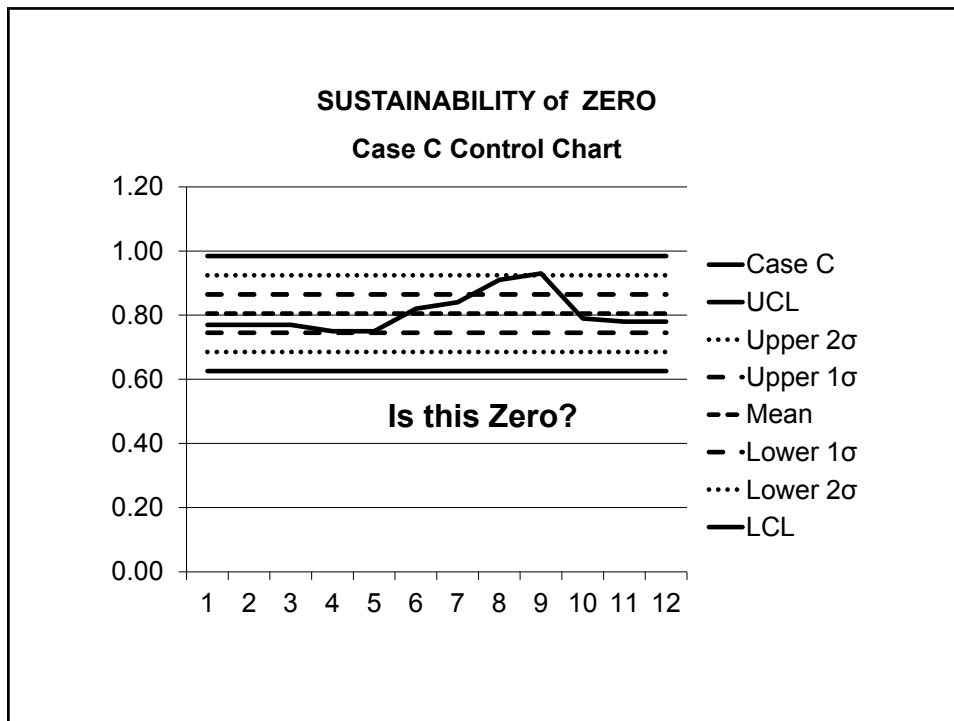
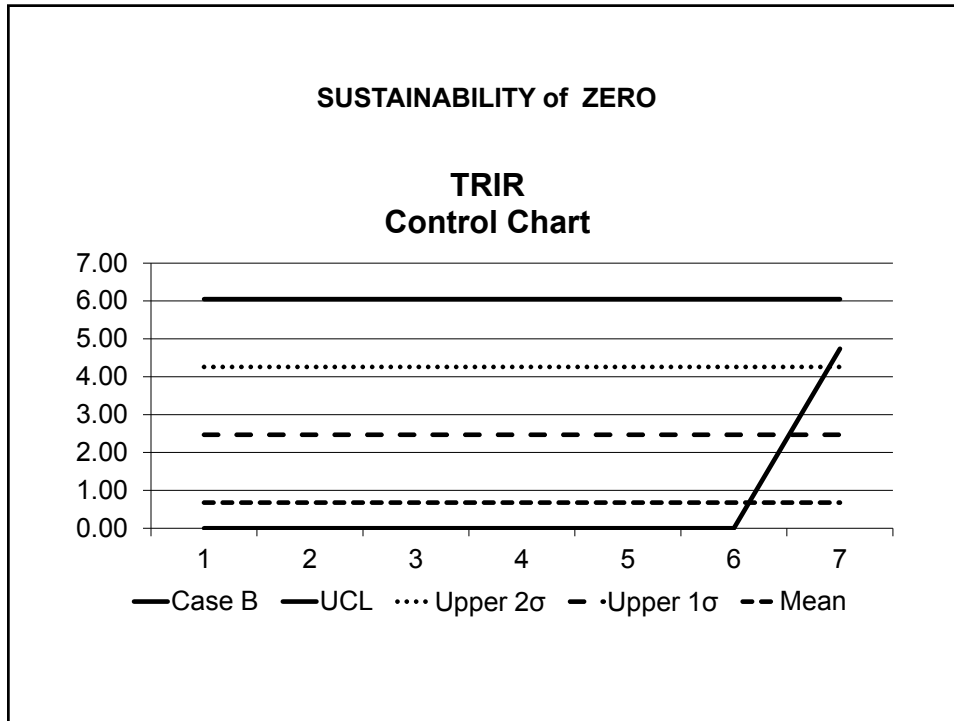
Limits of Injury Based Metrics

- **Challenges of being a High Performer moving to low event frequencies**
 - Signal to noise ratio
 - Statistical validity
 - Random timing of the events that underlie data points

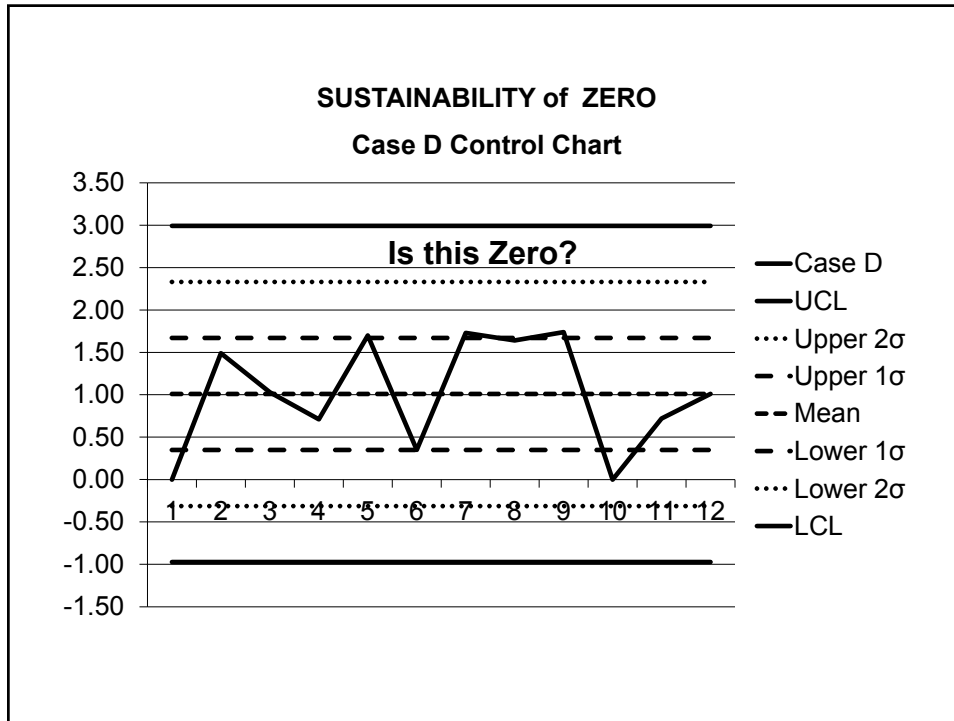
Using Performance Measurements to Keep You on Track



Using Performance Measurements to Keep You on Track



Using Performance Measurements to Keep You on Track



JOURNEY to ZERO: ASPIRATION versus REALITY

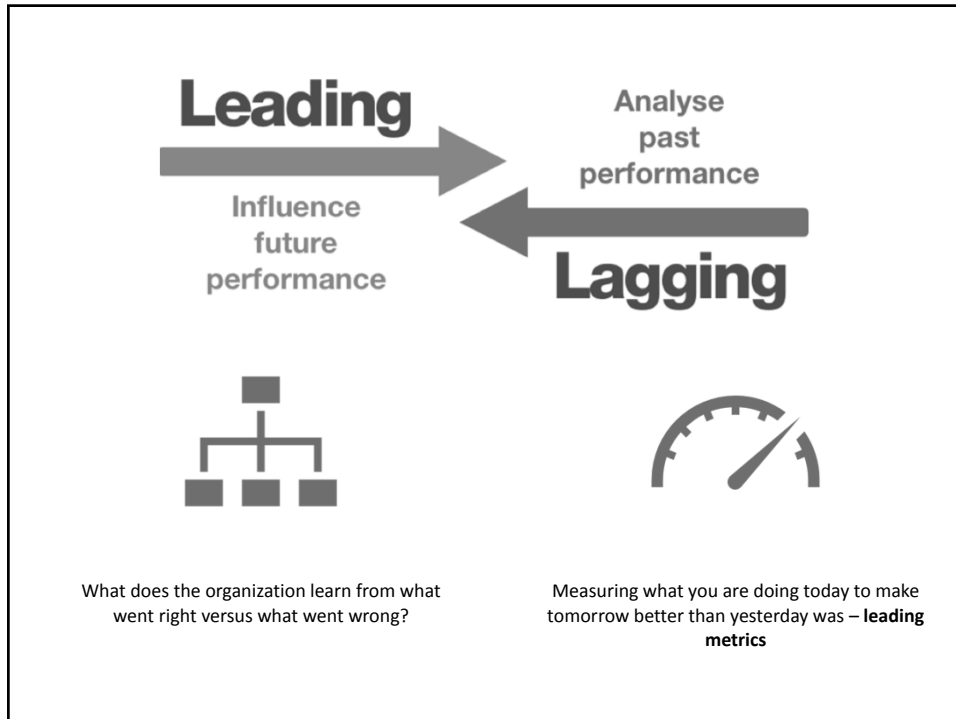
Aspiration:
ABSOLUTE ZERO!!!!

Suggestion:
“One Sigma Safety” or “1σ Safety”

An entity has achieved and is sustaining “Zero” performance when the mean of its last 12 monthly TRIRs is within one standard deviation (1σ) of zero.

Standard Deviation (Sigma) Measures Degree of Variance from Average

Using Performance Measurements to Keep You on Track



Poll Question #2

Do you work for a “Continuous Improvement” or “Learning” organization?

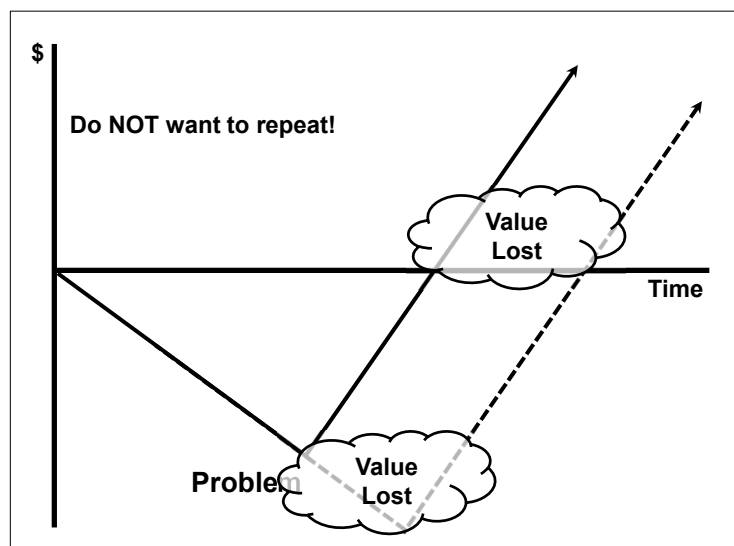
Learning Organization?	% of Organizations
No	3
Yes, at least that is what is said	47
Yes, we have metrics to provide it	50

Using Performance Measurements to Keep You on Track

Learning Opportunities That Find You

- Accidents / incidents
- Near misses
- Operational problems
- Breakdowns
- Non-productive time

Learning Opportunities That Find You

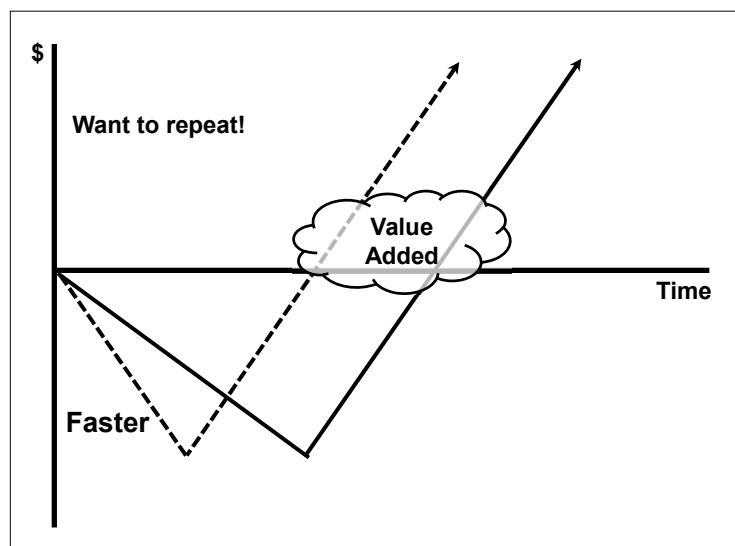


Using Performance Measurements to Keep You on Track

Learning Opportunities That You Find

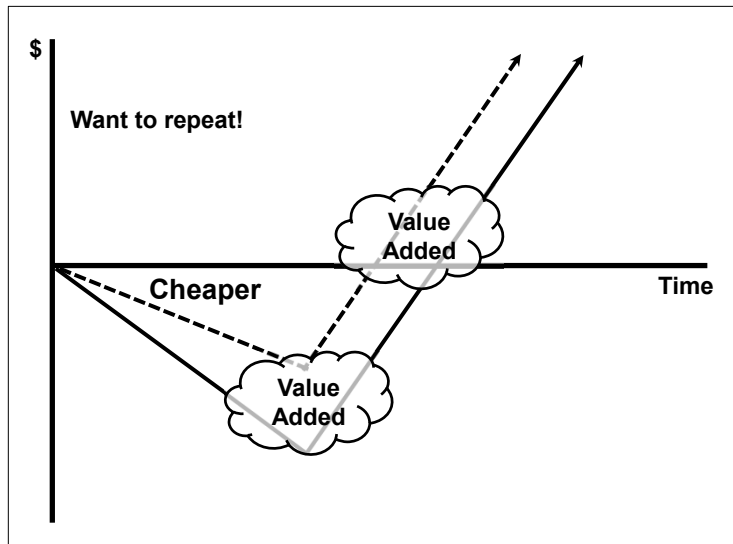
- Design & Engineering
- After action review / Lessons Learned
- Research and development
- Experimentation
- Training
- New people with new ideas
- Industry associations
- Events like this!

Learning Opportunities That You Find



Using Performance Measurements to Keep You on Track

Learning Opportunities That You Find



Culture Change

To become a learning organization and achieve a culture of sustained improvement, behaviors must change to:

- Bring forward more opportunities for improvement
- Work out what to do
- Do it

To change behavior(s):

- Change what is measured
- Change what is made important
- Change what is rewarded

Measure, reinforce and encourage what you want more of

Using Performance Measurements to Keep You on Track

What are the vPSI Metrics?

V Problem Solving Indicators

- **Awareness Index:** Ratio of no loss events to total events
- **Solutions / Planning Index:** Weighted average of plan types
- **Implementation Index:** Percentage of plans actually implemented
- **The vPSI Number™:** Product of the first three indicators
- **Minor Incident Metric:** Advanced ratio of no loss events to total events

Incidents are Opportunities to
Learn

Let's measure how much we learn
from incidents!

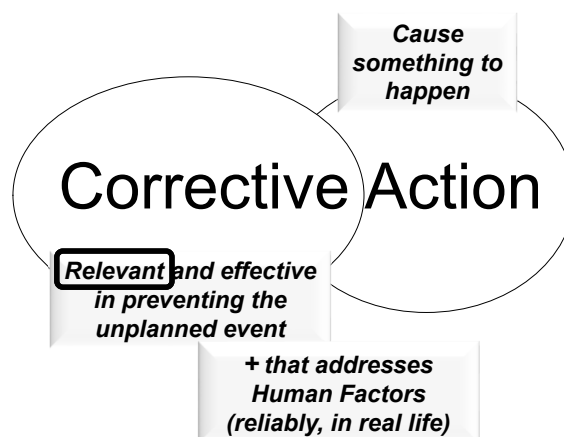
Using Performance Measurements to Keep You on Track

Poll Question #3

- How do you evaluate the “Quality” of corrective actions after an incident?

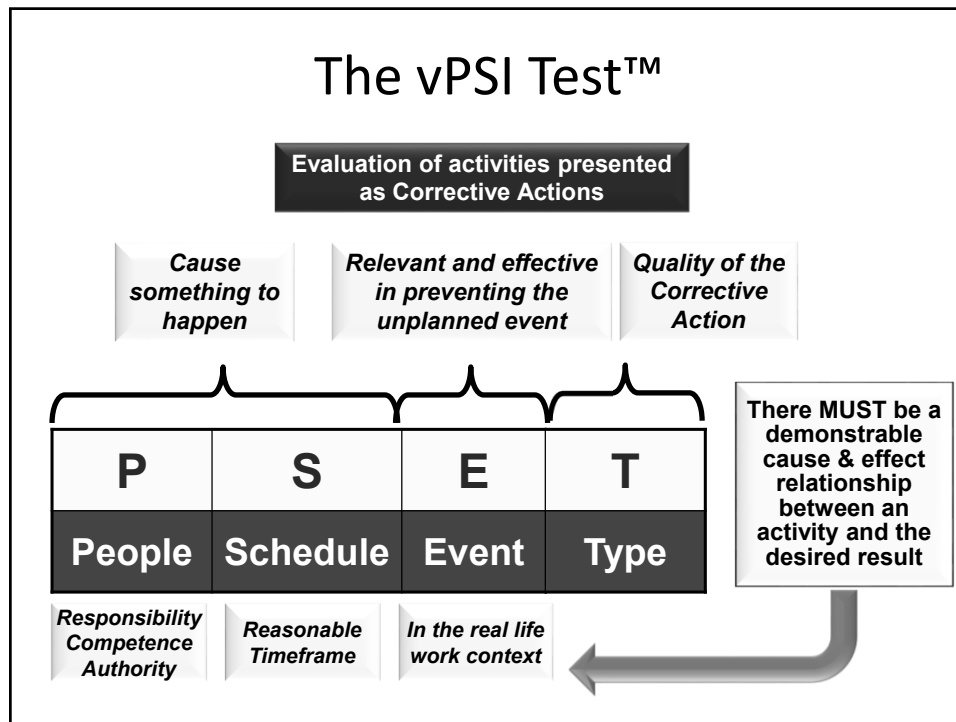
Quality Corrective Actions	% of Organizations
We do not	7
HSE Department	30
Management group / team	60
Systematic scoring system	3

Validation of Corrective Actions



It **MUST** be possible to identify a cause and effect relationship between an activity presented as a Corrective Action and the desired result.

Using Performance Measurements to Keep You on Track

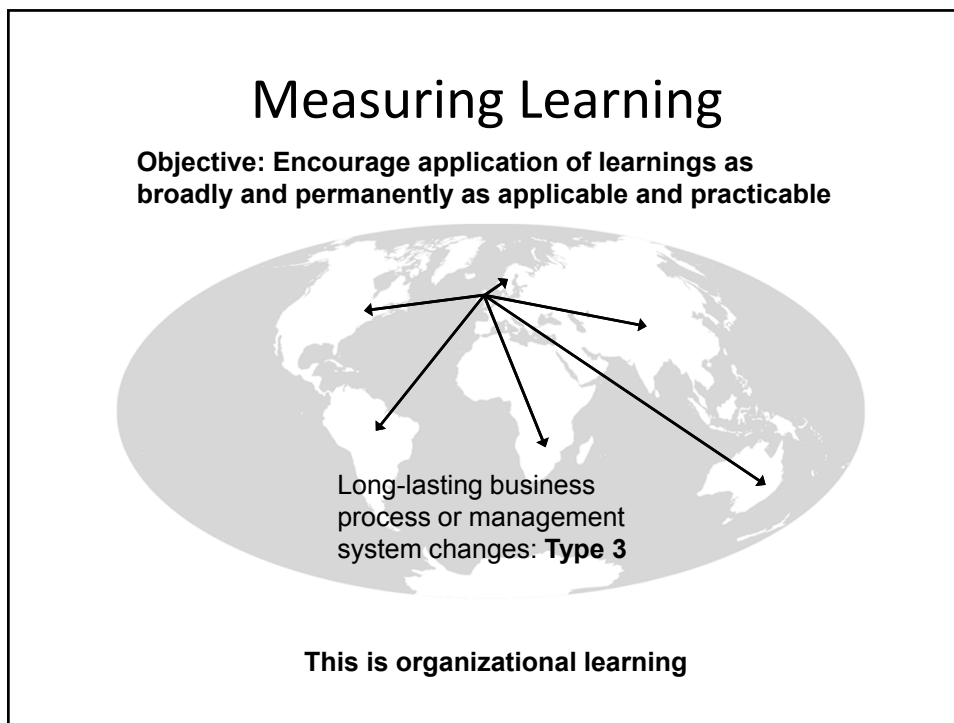
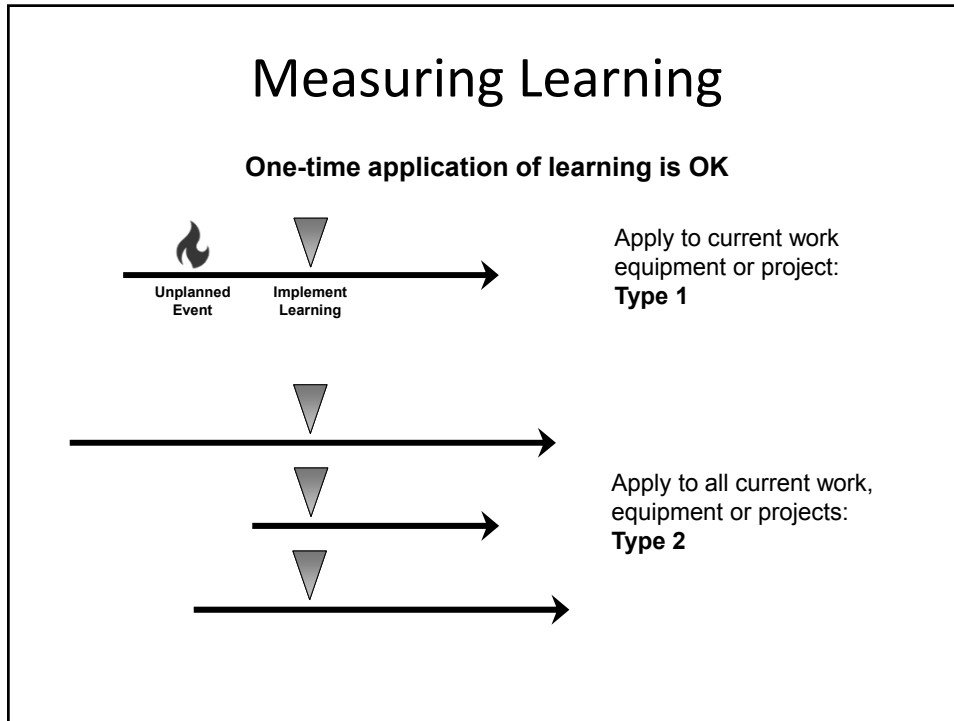


Poll Question #4

- Does your corrective action consider human performance?

Human Performance in Corrective Actions	% of Organizations
No	4
Yes but only to address idiotic performance	
Yes and considers potential learning	58
Yes and integrates to competency management system	38

Using Performance Measurements to Keep You on Track



Using Performance Measurements to Keep You on Track

What Do the vPSI Metrics Do?

Problems are opportunities for improvement

- Identification and reporting of problems pre-loss:

Awareness Index and Minor Incident Metric

- Devising good actions:

Solutions / Planning Index

- Implementing actions:

Implementation Index

Measuring problem solving = measuring improvement

What is the vPSI Number™?

It is the product of these indices and ranges from 0 to 300

Awareness x Solutions x Implementation

The vPSI Number™ measures problem solving effectiveness

It is a high-level management metric reflecting an organizational unit's response to and learning from unplanned events.

Using Performance Measurements to Keep You on Track

Interpreting the vPSI Number™

vPSI Number™ Less Than 100

- Typical response to unplanned events is generally ineffective, wasteful of resources
- Expect repeat unplanned events, bureaucracy, overworked people
- Whatever last year's probability of unplanned events, it has not improved this year and may be worse
- Near misses are likely being under-reported
- Underlying causes of problems are not being identified and resolved

Interpreting the vPSI Number™

vPSI Number™ Between 100 and 200

- Corrective actions are having at least a minor effect on unplanned event probabilities
- Effectiveness may be non-uniform, or better in some areas than in others
- Improvements tend to be dependent on individual supervisors and are therefore volatile
- Near misses are likely under-reported
- Corrective actions tend to be temporary fixes

Using Performance Measurements to Keep You on Track

Example Performance Goals

vPSI Number™

>200 (real time continuous)

Awareness Index

Near miss / loss event ratio 10:1 (reported, investigated and resolved); achieving this consistently indicates the organization is ready for the Minor Incident Metric

Solutions / Planning Index

40% Type 3 and 0% Type 0 reports
< 3 average # of Corrective Actions / Event

Implementation Index

90% (continuous)

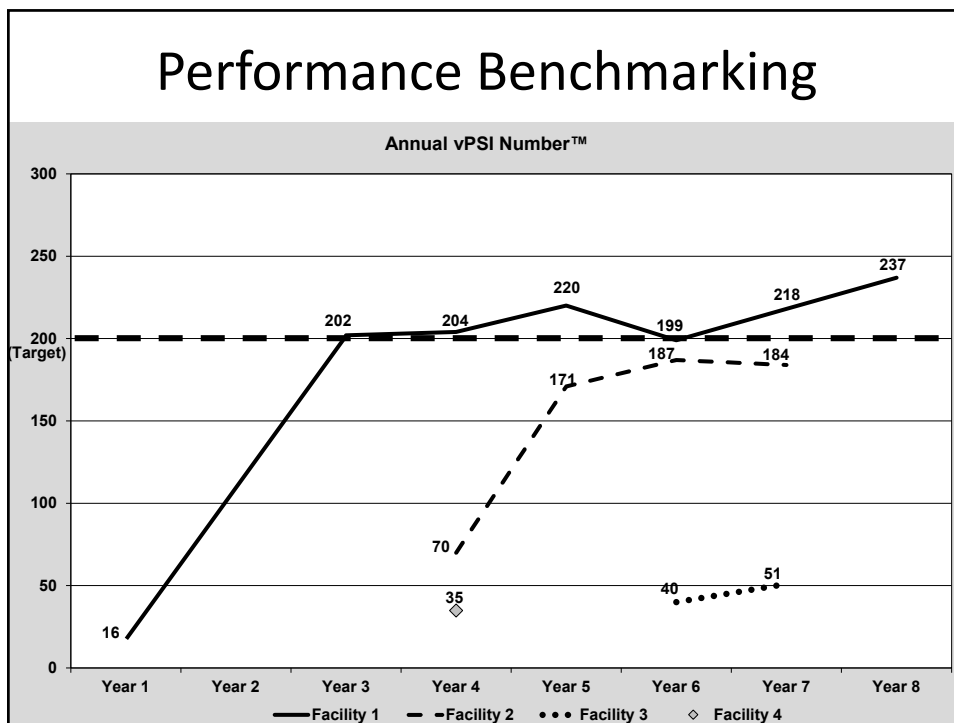
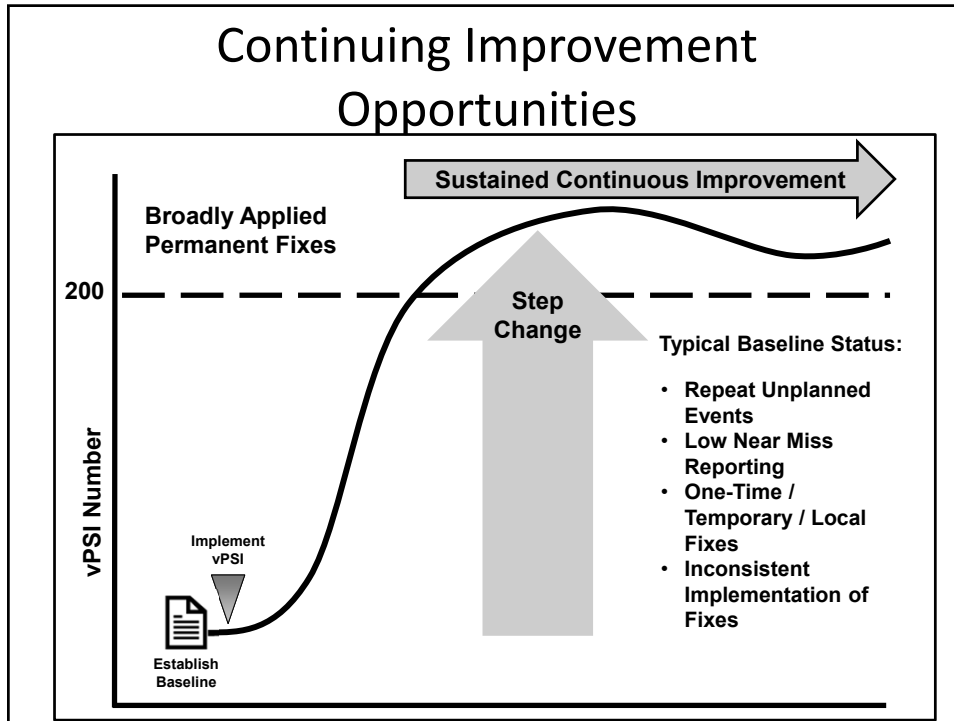
Interpreting the vPSI Number™

vPSI Number™ Greater Than 200 (the target for this KPI)



- Corrective actions are generally making problems go away permanently
- Whatever last year's probability of operational problems / incidents, next year's is lower
- Organization has achieved the minimum recommended level of near miss reporting
- Corrective actions produced by investigations are generally being implemented
- Continuous Improvement

Using Performance Measurements to Keep You on Track



Using Performance Measurements to Keep You on Track

Example vPSI Implementation

vPSI Metrics by Year	1	2	3	4	5
No Harm / Minor Incidents	623	1094	1095	797	796
Harm Incidents	69	122	53	41	56
Awareness Index	1.00	1.00	1.00	1.00	1.00
Total Reports Reviewed	692	1216	1148	838	852
# Reports Rated 0	0	5	8	1	7
# Reports Rated 1	43	98	108	108	121
# Reports Rated 2	353	588	507	361	399
# Reports Rated 3	296	525	525	368	325
Total Report Points	1637	2849	2697	1934	1894
Solutions / Planning Index	2.37	2.34	2.35	2.31	2.22
Implementation Index	98	97	96	96	97
vPSI Number™	233	228	225	222	216

Significantly reduced workplace risks

Summary

Learning metrics:

- Integrate working safely and getting it right
- Make economic sense - benefit the bottom line
- Provide new insight on organizational culture
- Are positive: reward behaviors you want more of
- Meaningful from the unit to the corporate level
- Can be used as a bonus program
- Fully controllable by those measured

Platform for sustainable continuous improvement

Using Performance Measurements to Keep You on Track



 **Using Performance Measurements to
Keep You on Track**

● **Questions?**

Connect with us on Linked 

Rick Theriau, vPSI Canada Ltd
Calgary, Alberta
rickt@vpsigroup.com

Norman Ritchie, vPSI Group, LLC
Houston, Texas
nritchie@vpsigroup.com