BlueDragon HCA

SOLVE A PROBLEM.
MAKE A DIFFERENCE.
CHANGE THE WORLD.

A. BOTTOM LINE

The Hyper-Integrated Causal Analysis (HCA) Methodology is the most advanced and accurate method for determining the root causes of problems under investigation, and is in use at the US National Labs, the Nuclear Weapons Complex, aerospace, and the government. This proposal highlights the limitations of traditional root cause methodologies and explains how HCA will increase the effectiveness of root cause and event investigations, while reducing the length and cost of the investigations.

B. TRADITIONAL ROOT CAUSE ANALYSIS LIMITATIONS

- Traditional RCA guidelines do not take into account modern, socio-technical working environments (Figure 1) that are creating complex, human-centric issues that must be evaluated using a rigorous Systems approach.
- Traditional RCA guidelines call for the use of a selection of different tools, many of which fall short of identifying the root causes, resulting in less than effective results and corrective actions that do not prevent recurrence.
- Traditional RCA doctrine causes investigations to stop too soon; at the identification of the event root causes, which allows other events to occur. True root causes lie deeper than the single event root causes.
- Many RCA guidelines call for the use of Five-Why Analysis. The Five-Why method was developed in the 1930s for use in manufacturing and lacks the depth of analysis found in modern causal analysis methodologies.
- Traditional investigations of complex issues can be quite lengthy, creating resource drains, taking personnel away from mission critical tasks, and in many cases, resulting in significant investigation backlogs.
- Traditional RCA methodologies are dated and have proven to be less than effective at solving recurring problems. The proof is that the cost of recurring events across all industries is in the $Trillions of dollars per year.

C. THE HCA METHODOLOGY

The BlueDragon Hyper-Integrated Causal Analysis (HCA) methodology is a state-of-the-art approach for solving human-centric problems that takes into account the complexities of modern, socio-technical working environments (Figure 1). These complex problems are difficult to solve using dated traditional methods.

- HCA was developed in the last decade to meet today's demand for speed, accuracy, and transparency, integrating Lean and Agile tools and techniques with an innovative framework for expeditiously gathering, organizing, and analyzing data.
- HCA integrates the best elements of traditional RCA tools and techniques and eliminates waste (Lean) and nonproductive activities.
- HCA's two-phased approach does not stop at the event root causes; it continues until the deepest-seated causes are identified.
- HCA charts provide irrefutable objective and impartial evidence as to the causes, which have been well received by management as well as legal teams.
- *HCA Rapid Investigations* can be completed in 2 to 4 hours using a timeline, identified defenses and lines of inquiry.
- *HCA Comprehensive Investigations* can take 1 to 6 weeks, where traditional root cause investigations take 3 to 6 months or more. In April 2021, the Department of Energy completed a 6-week HCA investigation that would normally take them 6 months.

D. KEY HCA PRINCIPLES

The HCA methodology is anchored by three key sets of principles that result in a depth of analysis not found in traditional root cause methods.

- CRITICAL THINKING - the intellectually disciplined process of gathering, organizing and analyzing information so we can reach sound conclusions and take the best course of action.
- SYSTEMS THINKING - a holistic approach that evaluates the overall interactions of a system and its subsystems, rather than evaluating parts of a system separately/individually.
- HIGH RELIABILITY ORGANIZATION PRINCIPLES applied by organizations where the potential for error is overwhelming (e.g., nuclear aircraft carriers and air traffic controllers) and incorporated into the HCA approach.

E. EXPECTED BENEFITS

- Cost Savings: Significant improvements in the timeliness of RCA investigations, completing arduous investigations that would take 6 months in about 6 weeks. The resulting 75% reduction in costs and manpower means that more investigations can be done with less resources. Solving problems also has a significant return on investment.
- Improved Performance: Significant improvements in the depth of analysis and overall effectiveness of your investigations, as well as in the effectiveness of corrective actions. This will result in stronger programs and reduce the number of recurring events.
- Improved Trust and Confidence: HCA is a neutral and transparent process that generates objective and unbiased results, creating a great deal of trust and confidence in the investigative process.
- Mission: Ultimately, HCA will significantly contribute to your company's ability to perform its mission critical tasks.

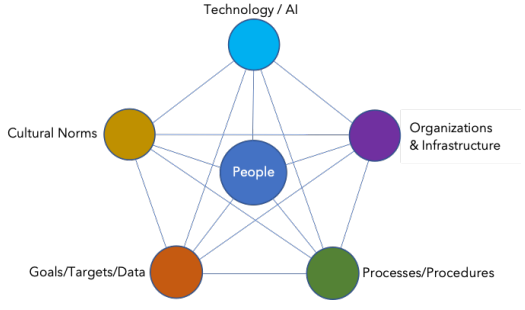
F. PROPOSED END STATE

- Make HCA the preferred methodology for conducting root cause analysis, safety, security & safeguards investigations.
- Update your procedures on causal analysis to allow the use of HCA as an approved methodology.
- Train investigators to the appropriate level (BD1, BD2 or BD3):
  - ☑ BD1 - HCA ANALYST certification for front line personnel that need to solve simple problems in a few hours.
  - ☑ BD2 - HCA PRACTITIONER certification for those conducting formal investigations using HCA Comprehensive Investigations.
  - ☑ BD3 - HCA MASTER PRACTITIONER certification for coaches and mentors of other HCA practitioners and analysts.

G. HCA CLIENTS INCLUDE:

- The Department of Energy (DOE)
- The US National Laboratories and the Nuclear Weapons Complex
- Westinghouse Nuclear (a Global Business Unit)
- Prime government contractors such as Honeywell, Bechtel, Fluor, Huntington Ingalls Industries, BWXT, etc.

FIGURE 1 – MODERN, SOCIO-TECHNICAL WORKING ENVIRONMENTS



For more information contact: Rob De La Espriella, BD3 || (772) 341-1093 || rob@bluedragon1.com