Questions Asked During the Webinar:
The Critical Thinking Process and Tools that Support Root Cause Analysis

1. At times, the time it takes to close a systematic Problem Solving project urges people to stick to band-aid fixes to problems. How to address this?
   and
   The struggle is real where I work where everyone seems to want to put a band aid on the symptom, take care of it, and not identify the root cause in order to prevent reoccurrence. What recommendations would you have to help the team learn and understand why we want to learn root cause?
   Three points here. First, band-aids are not always a bad thing. In industries, paper and steel come to mind, that only shut down their lines once or twice a year, band-aids allow them to keep running and do RCA in parallel, so they are prepared to take action during the shutdown. The challenge here is if the band-aid masks true cause.
   Second, not every deviation can be a priority. To assess the priority of a deviation and the need to learn root cause, I would want to consider the cost of the deviations, not only in lost throughput or waste, but also in terms of people's time spent addressing it, including the cost of the band-aid.
   Third, until we know true cause, we cannot know whether a corrective action is more appropriate than an adaptive action.

2. In rapid manufacturing environment, we typically hear, "the cause is known", therefore we don't need to use a full set of RCA tools, however many times this approach leads to recurrences or actually overlook the TRUE root cause, any recommendation as what quick tool would be the most appropriate to validate those "known causes"?
   Two points here. First, what is the cost to your organization of these recurrences? I would want to consider the cost of the deviations, not only in lost throughput or waste, but also in terms of people's time spent addressing it. Is the cost high enough to merit time and effort? Because, Second, "quick" may not be an alternative. But the intent of the comparative IS and IS NOT analysis codified by Kepner and Tregoe is to both narrow the scope of variables to be considered and reduce wasted effort when validating and prioritizing possible causes.

3. How long did it take for the NASA review board to ID the Root Cause of the failure? Is it likely that an organization would have the time and resources to do this type of in depth analysis?
   First, the Review Board was established on 17 April 1970 and the final report was transmitted on 15 June 1970. What I don't know is how many person hours were invested during that time period.
   Second, what would have been the alternative? Not all deviations necessarily need to be investigated, but organizations that don't get to true cause are accepting the risk of the problem recurring. Consider the situation at Boeing with the 737 Max.

4. What is the analytical part of 5W and Fishbone?
   When used as Root Cause Analysis tools, or techniques, they are generally a format for documenting speculations about cause based upon knowledge and experience

5. I've seen a lot of folks confuse 5 Why's and Cause & Effect Charting - what's an easy way to explain the difference between the two?
   The 5 Whys is a philosophy for investigating until you identify the systems or procedures that allowed the problem to occur. Cause & Effect Charting is a tool, or technique, for documenting and presenting visually when there are multiple causal factors and linkages between those causal factors to consider either incidents retroactively, when explaining what did change, or managing risk proactively, when preparing for what could change. In both cases, one of the challenges is deciding which factors should be included. When being used reactively for Root Cause Analysis, factors can be initially included as possible avenues of investigation, and then evaluated to see which best explain the IS and IS NOT facts, and then confirmed to assess what corrective and preventive actions are required. When being used proactively for Fault Tree Analysis, historical evidence should be provided for the probability, seriousness, and detectability of each factor to assess what level of preventive and contingent actions are required.

6. 5 Why question - how do you know when you've reached the root cause? How do you know if you asked enough 'Whys' or too many 'Whys'?
   The Root Cause of every problem is ultimately a decision. The primary decision every organization makes is choosing what products and services to sell to what customers. Based on this, the next decision is to choose/design policies, processes, and procedures to provide the chosen products and services to the chosen customers. With this in place, individuals within the organization begin making decisions within the framework of those policies, processes, and procedures.
   The 5 Whys is a philosophy for investigating until you identify the systems or procedures that allowed someone to make the less than perfect decision. The purpose of RCA is to implement Corrective Actions Preventive Actions. So, you have asked enough Whys when you have identified the decision that started the causal chain and can remedy the policies, processes, or procedures that allowed it to be made.

7. When using the 5-Why method, how do you avoid the universal causes of not enough people or not enough money?
   The intent of RCA and the 5 Whys is to identify the causes against which we should take corrective and preventive actions. To this end, ideally, all of the answers to the 5 Whys questions should be factual. In this scenario, what factual evidence supports either the "not enough" or "enough" positions? If we are at this juncture, another line of investigation might be about how well the people and money are being used, perhaps not enough process or critical thinking.

8. When moving down a Why's tree, are you answering why to the previous cause, or are you relating the cause to the effect… for example [The oven burnt my bread, why? Temp was too high, why? At this point, I've seen some folks answer the question "why would temp too high burn bread", NOT "why was temp to high". Are both acceptable for a why's tree and cause tree?
   The intent of RCA and the 5 Whys is to identify the causes against which we should take corrective and preventive actions. To this end, ideally, all of the answers to the 5 Whys questions should be factual. "Bread is burnt" because "Toaster set at 5". This requires knowing the toaster should be set at 3 and the person who set it to 5 made a less than perfect decision. If there is a question about what the appropriate toaster setting, then we leave the 5 Whys and begin investigating the appropriate settings for making toast.

9. You mentioned 3 items during the Performance System slide. It should be 1) observable, 2) measurable, and what was the 3rd again?
   "factual, observable and measurable, what specifically was done or not done."

10. I've seen some Fishbone Diagrams with customized scales other than (5 M's) into their own customization. Does that defeat the purpose of the tool?
    The purpose of the Fishbone Diagram is to prompt people to think of possible causes they might not have otherwise considered, whether using Knowledge and Experience or Distinctions and Changes. Under different circumstances categories than the 6 Ms or 4 Ps might be appropriate.

11. When doing Ishikawa, there are multiple potential causes and variables, any tool/methodology to prioritize on which to focus first?
    The intent of the comparative IS and IS NOT analysis codified by Kepner and Tregoe is to both narrow the scope of variables to be considered as possible causes and reduce wasted effort when validating and prioritizing possible causes. The possible causes that best explain the IS and IS NOT facts become the Most Probable Causes to focus on first.

12. How do you distinguish between true and false data? True data are "facts", but false data are distractors.
    My best answer to this is to quote Deming, "In God We Trust, all other bring data", or perhaps Ronald Reagan, "Trust, but Verify".

13. If there's more than one Root Cause, do you combine them into one Root Cause Analysis or separate them into multiple RCAs?

Not sure where this question is starting. How do you know there is more than one Root Cause? From my perspective, each RCA begins with a problem statement, one object with one defect. In some cases, the cause of the one object with one defect will be two separate objects with separate defects. These should then be investigated separately if we need to know their causes to implement effective Corrective and Preventive Actions.

14. Is it best practice to have the Vendor providing the service in question, conduct the RCA analysis themselves?
    This is a performance system question. Certainly, if the object with the defect comes from a vendor, they need to be involved. But, how willing and able are they to find true cause.

15. What is easier to control special causes or common cause?
    Generally, and I think Deming would have agreed, special cause is easier to control. Special Cause is the result of a specific set of events. Common Cause is the result of multiple intertwined decisions about products and customers, and the policies, processes, and procedures required to support them.

16. Nowadays what would be your choice 8D, A3 or DMAIC? And pls explain WHY? Thanks
    and
    So, is the 8D best tool to determine how to stabilize a new process?
    Ultimately it depends upon whether the change or instability being investigated is due to special cause or common cause variation. 8D is a framework for guiding the use of tools, originally, to address special cause variation. In some cases these tools can be applied to addressing common cause variation. DMAIC is a framework for guiding the use of tools, originally, to address common cause variation. A3 is, originally, a framework for reporting the results of either.

17. Are there any software tools to lead you through creation of a fault tree?
    The tool I used to create my diagrams was Sologic CauseLink.

18. Is that the same is "assignable cause" vs "common cause?"
    Yes, the terms “assignable cause” and “special cause” can be interchanged.

19. With Risk Mgmt becoming bigger in our IoT, what's the best way to apply KT to Risk Mgmt?
    and
    Lean practitioners insist on having a catalogue on how to build defects. The thought behind is that not until you know how to build defects can you actually work on effective measures to prevent them, let me know your thoughts.

and
How can we assess risk originated from Human Activities?
Effective risk management begins with focusing on a specific action that produces an output to meet customer needs. From this we identify potential problems, objects with defects that would cause our output to fail to meet customer needs. Whether the object is a person or a product, and whether the defect is a decision or mechanical, we would assess its risk based on its probability (how often has it happened before), seriousness (what the effects were), and detectability (how long does it take to realize it has happened). Once we understand the mechanisms at work that cause the potential problems we can take preventive actions to reduce their probability, corrective actions to reduce their seriousness, and triggers to increase their detectability.

20. This is not a question but a statement, this is basically pretty much following the good old Scientific Method.
Certainly. Kepner and Tregoe acknowledged they were only providing guidance on how to apply the critical tools first established by the great thinkers.

21. Is never Human Error the root cause?
Root Cause is ultimately a less than perfect decision made by a person, a human error. The question then is why did they make this error. For this we need to consider how well aligned the performance system is. Deming's observation allows that 15% of the reasons for failure are the employee. This then begs the question, were they deficient when they began working or did they become deficient over time?

22. What is your take on applying RCA to Climate Change?
RCA begins with one object and one defect. Climate Change is the result of many objects with different defects, many changes. First, we have to agree on what is each change, and then agree on what did change to cause it, what should change to correct and prevent it, and what could change going forward.

23. What are your thoughts in rgd to 5W2H, aren´t too many for an analysis? Cheers
When used as a framework for reporting results, all the elements might be appropriate: Who, What, When, Where, Why, How, and How much. Kepner and Tregoe codified the use of What, When, Where, and How much (Extent) when searching for true cause. Who might not initially be a relevant fact about a particular problem, and if we knew why and how we would not be conducting an investigation.

24. One of the things I missed, how about the Team formation, kindly highlight this point for every rca process?
    Once we have identified the change we need to address and what we need to know to address it, either what did change or what should change or what could change, we need to consider who should be involved and what their role will be to ensure we have sufficient information to reach a sound conclusion and sufficient commitment to implement the results.