The Misconception of the 5 Why Method

This brief is a critique of the 5 Why method for finding root cause. As defined by Wikipedia, “5 Whys is an iterative interrogative technique used to explore the cause-and-effect relationships underlying a particular problem. The primary goal of the technique is to determine the root cause of a defect or problem by repeating the question "Why?" Each answer forms the basis of the next question. The "5" in the name derives from an anecdotal observation on the number of iterations needed to resolve the problem.” Sakichi Toyoda, has been credited with the invention of the method in the 1930s. He was an industrialist, inventor and founder of Toyota Industries.

While the 5 Why method has attributes that may be useful, the likelihood of obtaining the objective of understanding of root cause is tenuous at best. Nowhere in the method is data used to substantiate or test the hypotheses developed in the questioning process. The positive attributes associated with the 5 Why method:

1. Questioning is a good thing. Questions are a key element to critical thinking and are useful for encouraging investigation. Question:
    a. the measurement system,
    b. the type of data,
    c. how the data was acquired,
    d. assumptions and “tribal knowledge”.

    Questions should include not only why, but how, when, what and by whom.
2. The method helps to recognize the cause-effect continuum and the hierarchical nature of this continuum.

Where it is deficient:

1. The method has the potential to over simplify the situation. It assumes one linear path of cause-effect relationships. In more complex (and more realistic) situations where there are multiple causes and interactions of those causes, the method is lacking.
2. The answer to each *why* question should result in a multitude of possibilities, not one. The number of possible causes increases exponentially with each asking of the question why. However the method suggests only one of those possible cause be selected. How is just one of those chosen?
3. Fails to take into account other outputs (multivariate).
4. Does not encourage the use of data. Leads to the belief that one can think their way through understanding causal relationships without any data to support such conclusions.
5. Driven by personal intuition and bias.

Where the 5 Why method may be most useful is in developing specificity to hypotheses. This approach may drive more precise and thorough explanations as to why a phenomena is occurring. As long as one realizes these are hypotheses and not definitive “root causes”, the technique may be beneficial. Once hypotheses are formulated, it would be more efficient and effective to apply scientific method where data is used to provide insight and increase confidence in understanding the causal relationships.

Before you make general rule of this case, test it two or three times and observe whether the tests produce the same effects… *Leonardo da Vinci*