

# The Critical Thinking Process and Tools that Support Root Cause Analysis

written by Lauri Moon | May 1, 2019

“If you can’t describe what you are doing as a process, you don’t know what you’re doing.” — W. Edwards Deming

In this webinar we will review the primary tools used for finding Root Cause, and how to use them effectively to converge on the Root Cause of a problem. We will review the philosophy of the 5 Whys and the Kepner-Tregoe (KT) principles of critical thinking. We will review the most commonly used RCA tools including:

- Cause/Incident Mapping
- Fishbone or Ishikawa Diagrams
- Fault Tree Analysis

The webinar will focus on using best practices to discover the answer to the question, “What did change”. We will demonstrate how to move beyond the philosophy of the 5 whys and to continue investigating until we get past mechanical causes to address systemic and procedural causes that contributed to the choice which started the causal chain. Many iterations of RCA may be necessary to explain a series of true causes before we get to root cause.

## Speakers

 **Michael Curran-Hays**

A professional who works closely with his clients to achieve Operational and Service Excellence in regulated industries, Michael provides executive leadership across Kepner-Tregoe’s (KT) full range of services including directing industry-specific, integrated teams on a wide range of projects. Michael began his career with KT in 1998 as a consultant specializing in organizational processes analysis, issue resolution facilitation, project management system implementation and design, and

executing critical skills transfer in client organizations. Working across a wide range of industries, his clients include Siemens, Johnson & Johnson, Pfizer, Novartis, Bristol-Myers Squibb, Glaxo SmithKline, Roche, Citi Group, Merrill Lynch, Morgan Stanley, Deutsche Bank, Royal Bank of Scotland, Barclays Capital and various government regulatory agencies such as the FDA and USDA.

 **John Ager**

Master trainer, facilitator, and project manager, John Ager leads teams and individuals through solving problems, and implementing operational improvements to achieve strategic goals. He specializes in improving organizational processes and subsequent change management and has extensive experience in project management, facilitating issue resolution, and transferring critical thinking skills. He has worked with clients in both manufacturing and service industries, often in highly regulated sectors. John's ability to integrate and communicate essential organizational data is key to his success with projects that enhance compliance, improve product quality, and increase efficiency. His work has resulted in: optimized organizational structures, optimized project portfolios, successful shifts in product mix and customer focus, and alignment of employee activities with organizational priorities.



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# Webinar: Robot Ready-Adopting a New Generation of Industrial Robots

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In industrial manufacturing, robots are shedding their cages, where they have toiled for decades, and now collaborate shoulder-to-shoulder with their human co-workers. They're working on dangerous and onerous industrial tasks, while also carrying out other tasks of great dexterity and precision such as soldering microchips. As robots take on more, and promise more - and as adoption costs continue to decline - a wealth of options for manufacturers are opening that did not exist even a few years ago.

## **A perfect storm of factors favor robot investment in 2018 and 2019**

While robots have been edging into human work at a rapid pace for some time, 2018 seems to present an inflection point on even wider adoption. A number of trends are begging the industrial sector to take a closer look at robot adoption, including greater pressures to customize products, rising global competitiveness, and a tightening industrial labor force. Another trigger is the 2017 overhaul of the US tax code, which frees up cash for manufacturers that could be earmarked for automation technology.

## **Strategies around robotics integration**

Any new manufacturing technology requires a well-informed and scalable strategy. Industrial automation can be a considerable investment. Based on PwC's experience in working with manufacturers integrating robotics automation, there are three main areas new adopters (and those expanding their current adoption) would do well to think through before committing to investments in time and capital:

- Build a no-surprises business case. It is critical to make a clear, fact-based assessment of total costs of automating compared to not automating. Consider the increase of benefits (cost savings from higher productivity,

reduced waste, etc.) net the cost of the robots. **During the webinar, we will offer some foundational questions to address to help you achieve an accurate ROI.**

- Know your automation know-how. You must assess your in-house experience with automated systems to determine what might need to be outsourced. **During the webinar, we will identify the areas of skill you should assess.**
- Choose the right robotics technology for the right job. This starts with identifying what can be automated...and why. **During the webinar, we will review the taxonomy of robotics technology: what they are, what they do, and where they work.**

## **Robotics and its role in the factory of the future**

Manufacturers are finding value not only in the instrumentation of machines on the shop floor, but also from data captured in other parts of the operations, including materials, parts, labor and workflow records. Such data, when aggregated with other data (customer, financial, environment, etc.) can serve as the basis for insights and actions.

**During the webinar, we will walk through the ways new adopters can systematically build robotics into the fabric of operations to capture valuable data, and always with an eye to the digital future.**

## **Speakers**

 **Steve Pillsbury, PwC Principal, Digital Operations Leader**

Steve is the digital operations leader at PwC, leading operations and strategy engagements for manufacturers. His team helps manufacturers define and execute strategies to modernize their operations through digital/IIoT enablement, including digital factories, connected supply chains, new manufacturing methods, connected field services, and the full digitization of product development. Steve has worked with IIoT sellers to help them develop innovations that address the outcomes manufacturers seek, and has worked with IIoT buyers to help them define the art of the possible and incorporate digital capabilities into their operations.

 **Tom Foth, Director, Emerging Technology Labs at PwC**

Emerging technologies have become a critical factor of PwC's most successful clients' strategic portfolios, providing large opportunities in business growth, performance, and game-changing disruption. Tom leads PwC's Emerging Technology Labs. He is a technologist and innovator with 46 patents.

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