

## The People Side of Root Cause Analysis

Has your facility started an RCA program, only to have it fall by the wayside? Or has a RCA program failed to take hold because of a variety of factors, all challenging to manage? This article will address some common pitfalls of RCA programs, and recommend some strategies to establish (or reestablish) a program at your facility that will bring lasting success.

First off, a bit on terminology. There is a distinct difference between an RCA and an RCFA. I define RCA – root cause analysis – as just that, determining the root cause of “something” through some sort of formal analysis. RCFA – root cause failure analysis – is analysis performed to determine the root cause of a failure. It could be an equipment failure, a failure of people, or a failure of process. Both leverage the same tools and the analysis is often similar. Think of RCA as the umbrella under which RCFA resides.

RCA can be done reactively (after the failure – RCFA) or proactively (RCA). Many organizations miss opportunities to further understand when and why things go well. Was it the project team involved? The change management methodology applied during implementation? The vendor used or the equipment selected? I would argue that performing RCA on successes is just as, if not more, important for overall success than performing RCFAs on failures – but that is a topic for another article. .

So what are the reasons RCAs fail? What culture and behaviors are necessary for an RCA program to be successful? First and foremost, all organizations are made up of people. When it comes down to it, we are responsible for the success and failure of any initiative. Clients of mine are often very willing to hire outside help to perform an RCFA on a recent equipment failure that led to days of lost production and millions of dollars in potential revenue, but they won't put in the serious effort to identify and understand why they haven't had success in implementing their own internal RCA program. Prosci®, the leading provider of research and tools that enable organizations to manage the people side of change, recently released their 2012 edition of *Best Practices in Change Management*. Their researchers found that the top contributors to the overall success of any initiative, in order of importance, are:

- Active and visible executive sponsorship
- Frequent and open communication
- Structured change management approach
- Dedicated change management resources and funding
- Employee engagement and participation
- Engagement with and support from middle management. [1]

Let's address them one at a time.

### **Active and visible executive sponsorship**

For an RCA program to increase its probability for success, it has to be driven from the top. Senior management must have the education and awareness to understand why the need for creating a culture of waste identification and failure elimination is important. Then, they must support the program with resources – everything from training operators and mechanics in methods like 5-WHY analysis and proper incident reporting, to potential head count increases for reliability engineers to lead RCA analyses. Sponsorship, however, doesn't stop there. For it to be active and visible, senior management must spend their own time as well – reinforcing their shared vision of a facility that will identify and eliminate repetitive failures (and work to understand and celebrate successes) on the factory or plant floor with employees at all levels in the organization.

### **Frequent and open communication / structured approach**

What gets measured gets improved. Even more so, what gets measured and communicated gets understood. Program owners must work to define a process for when and how an RCA is to be performed. I've found that the DMAIC process works best for developing an RCA program. For those not familiar with it, DMAIC is a Six Sigma approach to problem solving:

- Define the problem
- Measure the current state and collect data
- Analyze available data and utilize RCA tools and methods
- Improve the situation after determining root cause and most viable solution
- Control the outcome by ensuring actions were effective and results are lasting

Triggers should also be established at the appropriate levels of loss. Baseline metrics need to be established and RCA findings need to be openly and frequently shared with area owners and plant personnel. Use target condition metrics to provide the business case to implement results. Quarterly metric reporting to senior management is an excellent way to keep them engaged, giving them the tools they need to be active and visible sponsors. For individual RCA reporting, I recommend the A3 methodology, as shown below:

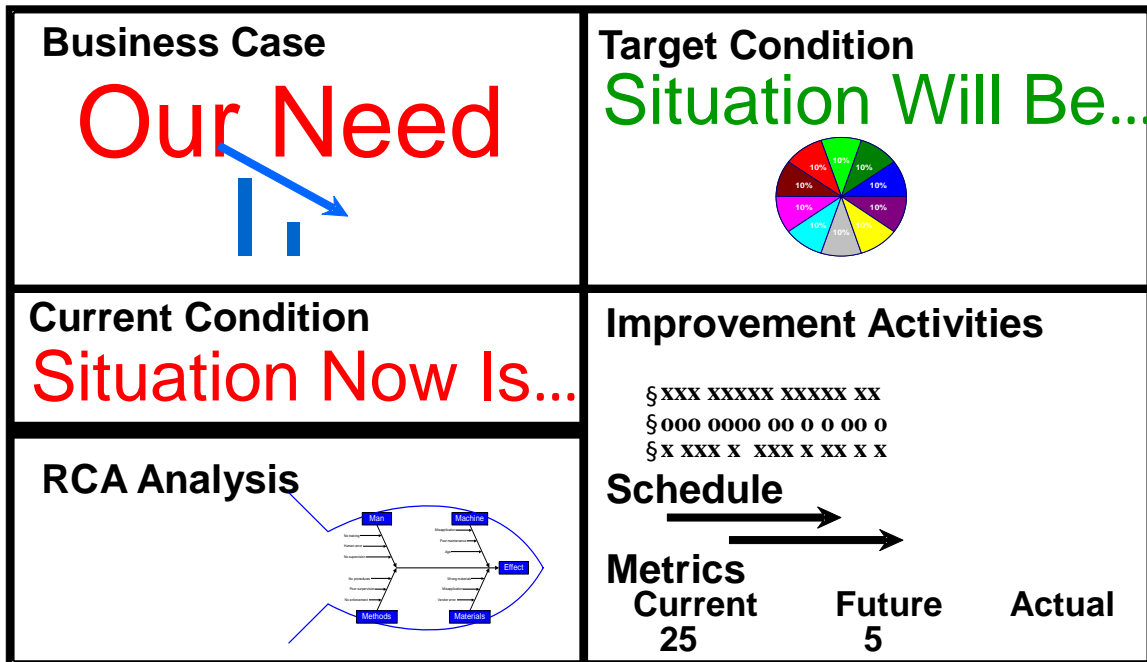


Figure 1: Sample A3 Template for RCA Reporting

To successfully initiate an RCA program at your facility, a structured change management approach is also key. Communication plans with a clearly articulated vision should be developed and disseminated by senior and middle management. One of the key findings in the PROSCI ® study is that, as employees, we want to hear about shifts in the way we do business from:

- 1.> An executive sponsor (defines the why and how) and
- 2.> our immediate boss (defines the how and the what) [1].

**Dedicated resources and funding**

It should go without saying that for project success, management needs to provide the necessary resources and funding for training, program installation, software development and troubleshooting tools. This applies for both change management professionals (especially at program inception) and for the reliability group that will be facilitating the majority of RCAs. This makes the metric reporting and program ROI justification all the more critical. Build a business case for program implementation. Work to make the decision to continue the RCA program work a no-brainer for your boss. Even just one major failure elimination activity can result in millions of dollars to your company's bottom line. Document and publish findings.

**Employee engagement and participation**

Without employee engagement, an RCA program will not get off of the ground. Equipment operators are the best suited to identify when the onset of failure occurs, and can help the RCA facilitator understand what happened when. Maintenance personnel must be on board to ensure that physical evidence – like that frozen bearing or damaged impeller – doesn't get thrown away. Even cleaning the oil residue off of a failure inner race can destroy potential evidence. To instill ownership and understanding, employees must be involved in creating the RCA process..

### **Engagement with and support from middle management.**

No corrective action will last long if employees are not held to account. The role of middle management is key to any initiative and is often overlooked. These individuals must address the day-to-day issues in the facility or plant, and push senior management's goals and objectives out to the organization. Ensuring that middle management is effective is critical to the success of any RCA program.

Whether you've worked at developing an RCA program at your facility with little success, or if you have never had the wherewithal to start one, these tips will get you thinking about the right things and moving in the right direction. It's never too late to start. When was the best time to plant a tree? Twenty years ago. When is the next best time? Right now.

1. Prosci's ***Best Practices in Change Management***. 2012 Edition. Prosci® Inc. All rights reserved.