How to Sell Root Cause Analysis to Management

Robert J. Latino, Reliability Center, Inc.

Maintenance Resources.com - Focus on Reliability Column - Nov/Dec 2000

Abstract: Oftentimes we are sent to attend classes on various topics where the material is applicable to our work situation. However, we know deep inside that even though we know this material is applicable and can make our lives easier, our management will never allow us the latitude to implement it. This article will strive to convey our experience with how to effectively convince management that RCA is a worthwhile process.

Let's face it, management of any organization is typically the entity chartered with fiscal responsibility when it comes to the company funds. They are deluged with potential projects that promise the world in terms of returns are extremely important to the originators of the project. The best way to sell your management on any concept is to put yourself in their shoes.

If we are in management's shoes, we have certain corporate objectives in terms of Key Performance Indicators (KPI) to meet. We are budgeted a certain amount of funds in an effort to return a certain Return On Investment (ROI) of these funds. Therefore, while management may feel that we are good people that is not the criteria by which they will select a project to support. When dealing with most management's in an effort to sell a project, we must develop the equivalent of a business case for them to review.

What is involved in building a business case? It is all about the numbers. We can rationalize a slew of reasons why a project should be supported like, 1) it will increase employee moral, 2) it will assist our relations with the community, 3) we want to treat our people like assets, or the like, but it all boils down to the bottom line. If we cannot prove its ability to generate (in some fashion) a profit for the company, than the chances of implementation are waning.

The following is an outline of a business case for selling RCA to management. These are based on our experience and meant to express general guidelines.

Project Acceptance Criteria – Typically any manager will have either a written and/or unwritten list of criteria in their mind by which they will evaluate a project's viability. Examples are 1) the project must return XX% over a year's period, 2) the project must not conflict with capital projects already on the books, 3) the project must have a synergistic effect both upstream and downstream, or 4) the project must increase throughput by 5%. It would be very helpful upfront if we could discuss these criteria with our management and have them provide us guidelines by which we could develop our business case. If we know what the rules of the game are, we can play by them. This is an ideal situation, but not a deal breaker if they do not wish to provide us such information.

Establishing the RCA Potential – Once we have an idea of the KPI's that our management is responsible for, then we can start to mold our RCA effort around attaining those goals. If the manager is responsible for increasing throughput through his unit by 5% in the calendar year, than that will be the scope of our business case. At this point we would want to know what is the potential design capacity of the unit in its current state and compare it against what we are actually producing on an average basis. This difference is commonly referred to as the GAP. This gap should be first expressed in units that the manager will understand (i.e., - tons/hour, feet per minute, barrels per day). Then these units should be converted to a dollar value based on the current market value. This dollar value will depict the potential that is available immediately within that unit. This is the carrot.

Obtaining the Identified Potential – Now we must determine what are the specific reasons as to why we are operating at a certain level versus our potential. This would involve our conducting a modified Failure Modes and Effects Analysis (FMEA) on the unit in question. This process would break down the system into subsystems. Once these subsystems are identified, we would use historical production data (from hourly workforce and electronic data systems) to find out the specific reasons that throughput was interrupted. We would record how many times a year these events occurred and how much they cost when they did occur. Cost/occurrence include (but are not limited to) manpower dollars expended, material replacement costs and lost downtime (lost profit opportunities). At this stage we want to sell the modified FMEA concept and the need to do so in order to focus our RCA efforts. We must now estimate the cost to conduct this modified FMEA on the unit. This typically involves man-hours to conduct. An average modified FMEA on an average sized process will require about 40 man-hours at the loaded rate (which includes benefits).

The Pareto Cut – Theoretically Once the modified FMEA list is complete, we will have an annualized cost per event. The aggregation of these events would equate to the gap between actual and potential production. At this point, we would explain to management that we took a Pareto Cut of the FMEA data and identified the 20% or less of the events that accounted for 80% or more of the losses. This 20% of the events can be referred to as the "Significant Few".

The PROACT® RCA Process – This is the point in the business case where we would explain the PROACT® RCA process. This can simply be done by explaining the acronym like such:

PR eserving Event Data – We would highlight and emphasize the need to collect data surrounding the identified Significant Few just as a detective would at a crime scene.

Ordering the Analysis Team – We would highlight and emphasize that a Principal Analyst is one that can remain objective and facilitate the RCA process versus participate.

Analyze the Data – Here we would explain the Logic Tree process, which assists with identifying Physical, Human and Latent Root Causes. The ultimate goal of a RCA is not only to eliminate the risk of recurrence, but more importantly to transfer the logic used to solve the event to others who could use the information.

Communicate Findings & Recommendations – This would focus on the need to have our recommendation from RCA reviewed and approved in order for success to be recognized.

Tracking for Bottom Line Results – This is where we would identify key metrics, which would prove the positive effect our recommendations have had on the operation.

Average times to conduct an RCA are difficult, as the nature of the event will dictate its complexity. Estimates would need to be developed to determine the number of man-hours required of team members and the costs of any testing to prove hypotheses. These numbers should be liberal allowing for the worst case, or high end to be exposed. Rest assured that the returns would still far exceed the costs to conduct the analysis.

Calculating the ROI – The business case should conclude with a calculation showing the estimated potential returns divided by the estimated expenses to conduct the modified FMEA and RCA. A timeline should also be established to show when the effects of the analysis will start to show up on the bottom line.

Like any engineering project, we must demonstrate the returns that the project will provide and compare against the funds that will be required to obtain the returns. We are doing the same thing with a thought process called RCA versus working with a physical process or piece of equipment.

Selling the PROACT® RCA process should not be difficult as the ROI's are astounding. The PROACT® concept is not a new fangled idea. It is field proven and the basis for any investigative occupation (i.e. – detectives, NTSB investigators, doctors, etc.). In my text entitled Root Cause Analysis: Improving Performance for Bottom Line Results (ISBN: 0-8493-0773-2), we were fortunate enough to have three of our clients publish their actual RCA results. The ROI's ranged from a 3,200% to 17,900%. The key to the sell is to make it so attractive that it would seem irrational NOT to do it!!

Robert J. Latino is Senior Vice-president of Strategic Development and a Senior Consultant for Reliability Center, Inc. Mr. Latino is a practitioner of root cause analysis in the field with his clientele as well as an educator. Mr. Latino is an author of RCI's Root Cause Analysis Methods© training and co-author of Problem Solving Methods© training. Mr. Latino has been published in numerous trade magazines on the topic of root cause analysis as well as a frequent speaker on the topic at trade shows and conferences. His most recent publication is titled "Root Cause Analysis - Improving Performance for Bottom Line Results" He can be contacted at 804/458-0645 or blatino@reliability.com.
http:/www.reliability.com