What is a Risk-based Asset Management Strategy?

Charles Motzko - August 14, 2012

I am always open to question, comments, or challenges, as this allows the TME community to advance the “Best Practices” through thoughtful and open dialog.

So, with your indulgence, I am deviating from my topic schedule this week to answer a question I received. The question involved Risk-based Asset Management mentioned in last week’s blog and how this strategy could be used to improve TME management. To answer this question, I thought I would provide an overview, then list some resources for those who want to pursue this subject further.

There are a large number of risk-based asset management models developed across a variety of sectors, technology-based and non-technological. I suggest that just because this large group of models do not directly involve TME, but we can still learn and adopt best practices from others (i.e.: The fundamentals of asset management are similar whether rail cars or oscilloscopes). One of the better overviews of risk-based asset management is a paper by Mike Poland, at Life-Cycle Engineering, of which this overview is drawn from.

Luckily, like quality management, risk-based asset management is about identifying, mitigating and eliminating risk, thus providing the common point-of-reference across organizations and technologies. This is accomplished by understanding the value stream of your (measurement) processes and the underlying Continuous Process Improvements (CPI) philosophy that drives innovation resulting in cost-performance improvements. (In TME management, I submit that the primary risk involves the inability to fulfill the measurements required for timely completion of a test protocol and satisfying contract or regulatory compliance.) These support gaps can happen for a variety of reasons, some controllable and others non-controllable, but always involves the value stream.

Fundamentally, a risk-based asset-management system collects relevant information based on the importance to the value stream and uses this information to make fiscally responsible decisions that will, in turn, create greater value to the organization. There are four phases in the risk-based asset-management model that are critical for the success in deployment of this strategy. The four phases are: Classify, Analyze, Control, and Measure.

When you couple the risk-based asset management strategy with current business processes, including the use of best practice, the coupling can provide a seamlessly integration of strategy and process to leverage critical information in support of the typical business decision process. This approach, supported by (changes in?) the corporate culture, leads to the relentless pursuit of continuous process improvement where one can expect results such as:
• Personnel have recognized the value of continuous process improvement and have demonstrated their belief with their actions.

• Limiting factors have been identified and reduced by orders of magnitudes.

• Substantial capital investments have been avoided by improving capability, capacity, and availability.

• Measurable reductions in cost of goods and services sold.

These benefits result in significantly improved operational stability along with substantial financial improvement (Comment: ... using the changes in the value stream as a key measurand). The results are derived from the elimination of limiting factors that provide greatly enhanced asset utilization at a much lower TCO (total cost of ownership).

In adapting any risk-based asset management system to TME management, all the core elements are used, with some minor descriptor changes/additions for best fit to the individual organizational technology base, regulatory compliance, and business model. Other technology-based industries have faced many of the same issues as TME management and those industries have formalized their asset management processes with good to excellent results. Thanks to Mike Poland’s paper for providing an excellent overview and examples on Risk-based Asset Management. A copy of his paper can be found at:

Some additional resources, as a starting point for your own research, can be found in the following papers.

An Asset Management Strategy
Risk-Based Assets Management Implementation
Risk-Based Transportation Asset Management