Asset Management in the Boardroom

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Introduction

In 2005, the direct costs for Reliability and Maintenance (R&M) was estimated at $200 Billion dollars. Even though companies have continued to cut R&M manpower, in an effort to reduce costs, the direct investment has continued to rise. The indirect costs, such as lost opportunity, unplanned outages and all other costs associated with poor maintenance practices also continues to rise and represented 20% of the $12.5 Trillion USD Gross Domestic Product (GDP) in 2005, or $2.5 Trillion. In effect, poor maintenance practices have been extremely poor business investments.

The asset management strategies of slash and burn maintenance budgets or reactive maintenance have surpassed the point of easy recovery for most companies. The common practice has degenerated, in most maintenance communities, to 'hero maintenance.' In this style of maintenance, when things go wrong the maintenance staff swoops in, makes things work and fly out again. Everyone feels stress during the failure, relief when it is over, the maintenance staff feel like heroes and are sometimes rewarded. The result is a culture of reactive maintenance as there is no incentive to prevent the failures from occurring in the first place.

There have been a variety of maintenance strategies companies employ to 'control' the costs of maintenance. Changes to maintenance strategies and practices often do not see an immediate impact. Instead, the lag time in a program, positive or negative, is an average of 12 to 24 months before full benefits are seen. In maintaining assets, it is important to remember this coupled with the human or cultural aspect to any change.

Asset management, including those aspects of R&M related to it, offer an unexplored frontier for business to improve competitiveness. This opportunity exists regardless of existing programs and their success. It can be explored through understanding your assets, literally knowing what you own, and determining the best strategy for each one. The impact within the business, sometimes during the lag period, can be staggering.

Caution

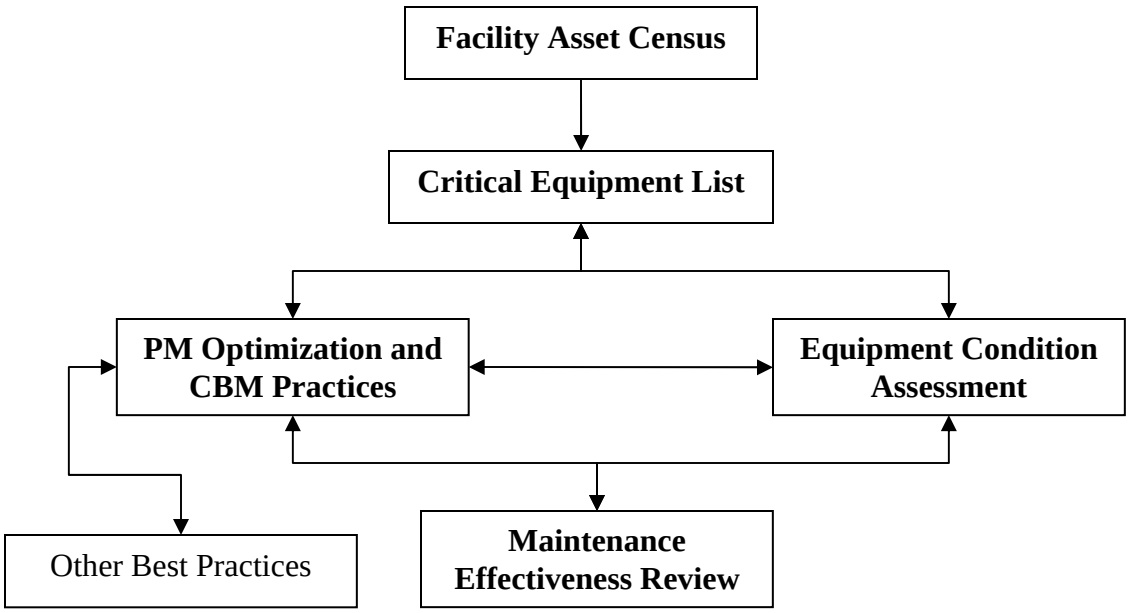
Just using the term 'asset management' in the description of a program does not make the program a true asset management program. In the early days of the success of Lean and Re-Engineering, once the successes became published, many executives called for those programs to be implemented at their companies. The result was a sudden sprouting of consulting firms that claimed to be able to provide such programs with little to no real experience. These programs had a tendency to fail miserably and sometimes very publicly. For instance, some would recommend just releasing personnel, shutting down

departments or changing processes without a full understanding of the system and how it works. The result was undermanned critical systems and departments.

The Development of An Asset Process

The development of a successful Asset Management program involves a process. Without a structured system, supported at all levels of the company, any such program will not succeed.

Figure 1: Asset Process and R&M Best Practices



The first step of the process requires the identification of assets using an Asset Census. This allows the company to understand the equipment that they own and allows the process of selecting critical equipment. Critical equipment is selected based upon company criteria that are selected around:

1. Safety and Regulatory Issues;
2. Production-Related Equipment;
3. Equipment that would be expensive to repair or replace; and,
4. Other equipment priorities.

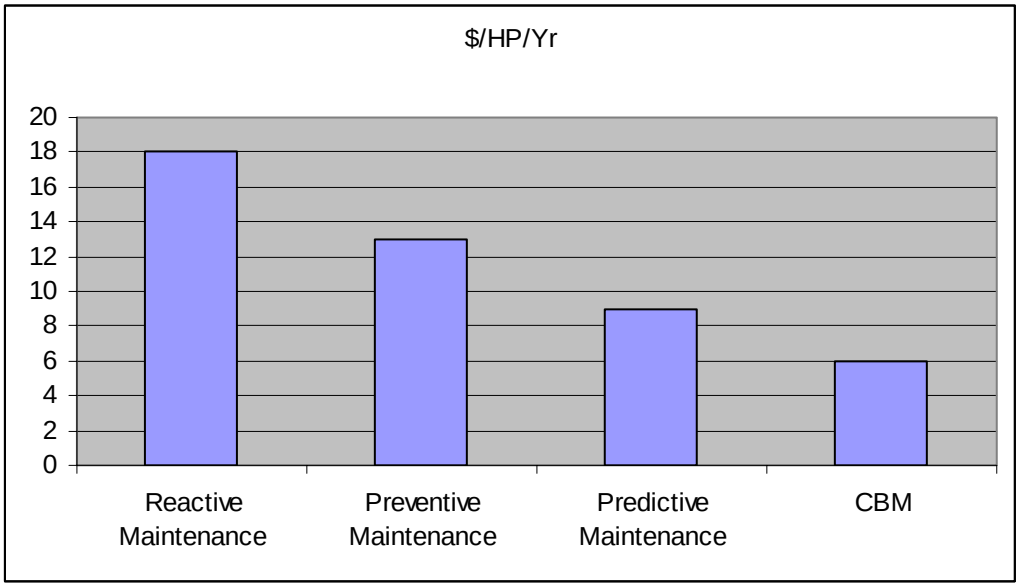
Once equipment has been prioritized, it can be processed based upon the greatest to least impact on the business. These are then put through a set of processes such as PM Optimization (PMO) and Reliability Centered Maintenance (RCM) to select the appropriate maintenance processes to manage the equipment. The results are optimized within the company ERP/EAM/CMMS system with old practices removed. The equipment condition is evaluated and baselines taken.

Other Best Practices are developed and maintenance processes reviewed for correctness. Processes, such as Root-Cause-Analysis (RCA), repair versus replace, and others, also make up the suite of best practices that provide feedback into the process, which should be scheduled for maintenance effectiveness reviews periodically. In this process, the maintenance practices are reviewed to ensure that they meet their original intention and are modified as necessary.

What Is The Impact of Asset Management

With the existing aging workforce and a decade long gap in the next largest workforce to enter the prime working age (Baby-Boomers made up approximately 78 Million people in the USA while the newer Baby-Boom Echo generation will be over 100 Million in the USA), companies have a prime opportunity to improve existing asset management practices. The improvement to any program, or lack of one, will have a direct impact on production throughput, inventory and operating costs as well as customer retention.

Figure 2: Piotrowski's Study on Cost per Horsepower per Year for Maintenance Practices



It is important to understand that there is the possibility that some costs will increase during the implementation of asset management. However, on average, the following impacts are possible:

- ☑ Reduction in maintenance costs of 24 – 30%;
- ☑ Elimination of unplanned breakdowns by 70 – 75%;
- ☑ Reduction in downtime of 35 - 40%;
- ☑ Increase in throughput of 20 – 25%;
- ☑ Reduction of PM's by 33 – 66%;
- ☑ Man-hour improvements of 45 – 50%

The development of the program also requires the coordination of all parts of the company.

Conclusion

Asset management and R&M provide one of the last frontiers in business improvement. However, most companies approach this opportunity from the wrong direction and just make budget and personnel cuts. The real opportunity is in controlling the business assets through an appropriate asset management process. The impact of such programs improve throughput, inventory and cost management of the business while ensuring on-time deliveries to customers.

About the Author

Howard W Penrose, Ph.D., CMRP, is the President of SUCCESS by DESIGN, a reliability and maintenance services consultant and publisher. He has over 20 years in the reliability and maintenance industry with experience from the shop floor to academia and manufacturing to military. Dr. Penrose is a past Chair of the Chicago Section of the Institute of Electrical and Electronic Engineers, Inc. and is presently the Founding Executive Director of the Institute of Electrical Motor Diagnostics. For more information, or questions, related to this article or SUCCESS by DESIGN services, please contact Dr. Penrose via phone: 860 575-3087 or email: howard@motordoc.net.