

Financial Justification for CBM – is EVA® the right answer?

By Chris Staller

So how do you justify your Condition Monitoring (CM) program? Number of saves? Less downtime than last year, or do you use more sophisticated terms like Return on Investment (ROI). If you're looking at this article to provide another way to calculate savings based on an event that might never have happened, then I suggest you stop reading now.

So how do we financially justify CM? What role does it play in the 'enterprise'? The detailed answers to these and a thorough review of the solution are beyond the space allotted here. However, back in May of 1998, John Mitchell, President of MIMOSA (<http://www.mimosa.org>) wrote a paper focusing on EVA® (Producer Value Model as he describes the term) as a model for optimizing equipment asset management. This article simply tries to summarize some of his points and I encourage you to download the entire article.

As we venture into the 21st century, CM will transform from a collection of maintenance tools to a tool for managing assets, i.e., Asset Utilization, Equipment Asset Management, etc. As a result, the measure and justification of CM will change as well, whereby metrics such as availability, yield, quality, production costs, etc., will be used to judge program effectiveness. These metrics are the heart and soul of any enterprise, ultimately translating to the bottom line. As part of the process, we will have to begin to use the same financial terms used to describe the metrics, to describe and justify our CM strategies. It's the only way the people upstairs are going to understand why Asset Management is so critical to the enterprise. Fortunately, it's easier for us to learn 'accountantese', then the other way around (an accountant with a data collector - I'd like to see that)! We must learn to play the game like everyone else and to use the tools already available to the 'decision makers' as a means of justifying our CM budgets. So how do we do that?

Before answering that question, let me comment on ROI calculations. Some have said that if your CM program can return between twice and eight times cost, and breakeven within 1 year to 18 months, then the program is justified. True or False? While you may be able to show a return based on estimated costs savings (as a function of the cost of the program itself), was there a corresponding improvement in the financial performance of the company? Is your competitor spending less on CM, while at the same time their bottom line improves and yours doesn't (although your ROI is acceptable)? Remember, to the financial community (internal and external, i.e., shareholders), if it doesn't improve the bottom line it will probably be cut. Why? For one reason, we failed to express the results and value of our CM program in the same financial terms used to measure the performance of the company. Second, when calculating ROI it is difficult to estimate the savings of an avoided failure, and in many cases these savings are optimistically estimated, thus ROI values are considered suspect from the start.

So what is EVA®?

EVA® is simply after-tax profit minus the cost of the capital required to produce that profit (see Figure). This is not a new concept, yet it has gained significant attention over the past several years as a means of measuring a company's true profitability. In other words, increasing worth and shareholder value requires after tax profit to be greater than the cost of capital invested. Note, profit is an income statement value and net assets is a balance sheet item. Thus, EVA® shows the effects on both sides of the books.

So why EVA® and not stop at after-tax profit. Simple, assets (capitalized), *and their costs*, are affected by CM activity. If we can reduce the cost of capital, then we have affected both the after-tax profit (Income Statement) and the real profit or EVA® (cost of the Net Assets on the Balance Sheet). For example, if plant equipment is better maintained, spare parts inventory may be decreased, which has a positive effect on EVA® by reducing the cost of capital (no spare parts costs). This in turn increases other profitability

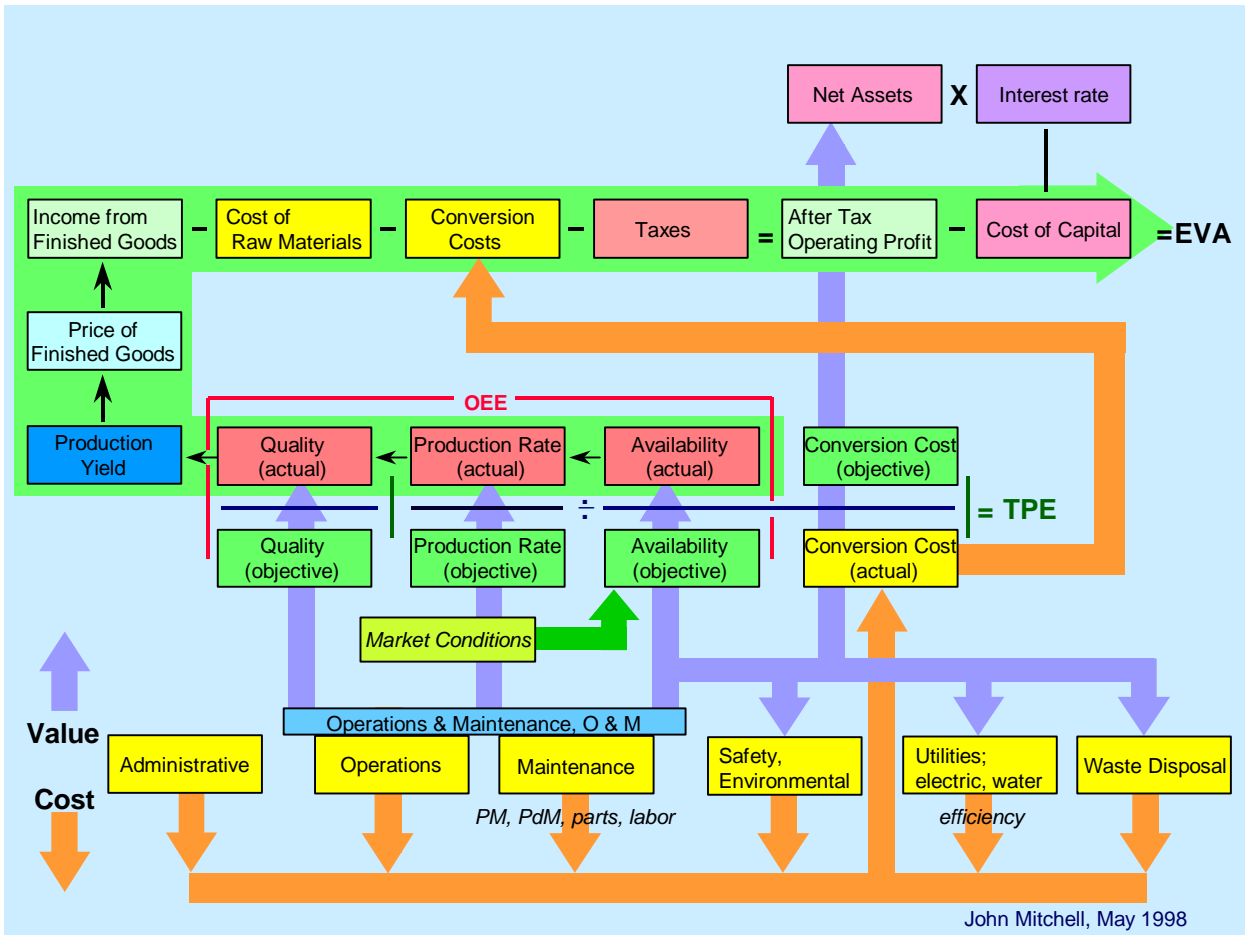
measures such as Return on Net Assets (RONA) and Return on Capital Employed - all because we reduced the need for spare parts. These are exciting topics to an accountant and shareholders reward companies that effectively manage EVA[®]. There have been studies correlating the share prices of profitable companies with low calculated EVA[®], vs. companies with a high EVA[®]. The higher the EVA[®], the more positive the stock movement.

However, from the figure, one can see that the real effect of CM is on the 'conversion costs' a company spends to produce a given product (all costs except raw materials). The future of CM is in supporting the reduction of these 'conversion costs' at the same time improving 'Operating Equipment Effectiveness.' OEE is essentially a normalized measure of Quality, Production Rates, and Availability which in turn determines Production Yield. This then affects the price of finished goods, which is further bound by market and business conditions. But to me the most important and readily apparent effect that CM can have (and is already a part of) is at the Operations and Maintenance Level (see blue value line).

Obviously, CM has an enormous leverage capacity to affect OEE, Conversion Costs, and bottom-line profitability/ EVA[®]. For example, if a company sells 100% of product and the demand for more exists, increasing availability and quality (OEE factors) can increase profitability significantly (by yielding more product to sell) without adding capital or its cost, thus improving the EVA[®]. The business community refers to this as 'phantom' capacity. In my opinion, adopting an Equipment Asset Management philosophy and utilizing CM to improve OEE and reduce Conversion Costs is the biggest opportunity manufacturers have had in quite some time to improving their bottom-line without increasing capital spending.

Whether your company utilizes EVA[®] as a metric or not, it is important to recognize the dramatic effects CM has throughout the business model, both on the income side and the balance sheet.

So how do you implement such a solution - that's the topic of my next article. There I will discuss Enterprise Asset Management solutions as the means to effectively integrating CM 'technologies' as part of an enterprise wide solution. Specifically, I will focus on the business model being developed and implemented by the DEI Group. In that construct, the concepts of RCM, Condition Assessment, and Equipment Lifetime Management will be discussed.



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