Maintenance and Share Price—Mutually Dependent

by Ron Moore PE, Author - Making Common Sense Common Practice, Models for Manufacturing Excellence

(*Editors note: This article was originally published in the SMRP Quarterly, 1994 and stands the test of time - Terry O*)

At first glance, it would probably seem illogical to most people to put maintenance and share price in the same phrase. However, it would also be wrong, as it has been for decades, to presume that they are not mutually dependent. In many organizations, maintenance is driving share price, but the CEO isn't even aware of it.

In working with managers in manufacturing companies, routinely the question is asked "What's the first thing you think of when you hear the word 'maintenance'?" Almost invariably, the response is one of two types. The first is "Cut it", or some variation thereof; the second is a description of a greasy mechanic in dirty overalls, or some variation thereof. From this response, it clear that the role of a world class maintenance organization is not well understood. Clearly, the relationship between maintenance and share price (also profits, return on assets, production capacity, etc.) is also not well understood, if these responses are routinely and summarily offered. Certainly, it is understood that all excessive costs should be cut, those which do not add value to the products being produced, and particularly those which hinder production. It is also understood that maintenance costs are often excessive. For example, according to one study, more than half of all maintenance performed in US manufacturing companies was reactive, e.g., emergency, run-to-fail, etc. This reactive maintenance carried with it the attendant higher costs associated with greater and ancillary damage, the frequent need for overtime, the frequent need to search for parts, and most importantly, the unplanned downtime. However, simply cutting maintenance will not provide a solution to the problems.

Certainly, it is also understood that repairs to heavy industrial equipment often requires one or more mechanics, and more often than not they get dirty. However, this should not be the image of the word maintenance. In a world class manufacturing company, maintenance is viewed as integral to the business, and contributes mightily to the success of the business.

A world class maintenance organization provides the reliable, quality production capacity for companies to succeed in the market place. Maintenance staff have at their disposal, and effectively use, the latest condition monitoring equipment in a reliability based strategy which allows them to **know equipment condition**, which in turn, allows them to more effectively: 1) plan maintenance requirements, 2) reduce maintenance costs, 3) identify and eliminate the root cause of failures, 4) increase and maintain maximum reliable production capacity.

Revenue:	$3.6 billion
Cost of Products Manufactured (COPM):	$1.0 billion
Other Costs	$1.9 billion
Operating Income:	$ .7 billion
Profit After Tax:	$ .4 billion

Value of Manufacturing Assets: $2.5 billion
Value of Capital Projects: $ .25 billion

Assumptions:

Reactive Maintenance Level: 30-50%
Unplanned downtime > 10%
Overall Equipment Effectiveness: 73%
Cost of Maintenance: 10% of COGS

It is typical that any company experiencing 30-50% reactive maintenance is also under utilizing production capacity by at least 10% (e.g., unplanned downtime), and over spending in their maintenance budgets by at least 10%—reactive maintenance generally costs more than twice that of planned maintenance. A reliability based strategy could be implemented for something on the order of $500K - $1,000K per year, could readily increase capacity by 10%, could reduce maintenance costs by 10%, and could eliminate or mitigate the need for the $250 million capital expansion.

Working through the numbers yields $10 million in increased pre-tax profits through the simple reduction in maintenance costs for the same capital assets. Increasing production capacity by 10% provides a higher throughput for existing capital assets and therefore a lower effective cost. With gross margins of 73% (1.00 - 0.27), and presuming market demand exists for the product, then a 10% increase in capacity yields an additional $360 million in sales, and an additional $260 million in pre-tax profits, given the company is already beyond breakeven. Finally, it is not necessary to spend $250 million in cash to increase capacity, nor to depreciate those new assets over 20-30 years for the same increase in capacity. This yields an additional $8 million per year in profit, and $250 million in cash. Adding all the numbers up, increases pre-tax profits, all other things equal, by nearly $270 million per year in operating income, or about $180 million per year net income, henceforth. Clearly, the overwhelming improvement is in increased capacity from existing assets.

Profits have now increased by 45%. Given a constant P:E ratio, share price should increase from its current value of $28 per share to $40 per share.

Clearly a world class maintenance function which provides maximum reliable production capacity at a minimum cost contributes mightily to share price.

Some closing observations:

1. It may be necessary to invest in new production assets, where new products are being introduced, or increased throughput is possible through increased speeds or improved processes, etc. Therefore, some of the capital expenditure may be necessary to support these issues.
2. It may be that not all the additional capacity will be needed immediately, but 10% additional capacity should be used within 2-3 years after achieving it, with only modest growth rates of 3-4 %. In the meantime, added benefits of lower costs, more reliable capacity, lower energy consumption, lower overtime rates, etc. should be realized.

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