

Are the Improvement Tools Working? A Survey of Practices

Over the past year I've worked with Terry O'Hanlon to do a series of webinars on the most popular tools in the market place for improving manufacturing/operational performance in industrial plants. As part of these webinars, we've asked participants to answer a set of questions related to their practices to get a sense of how well they were working. Many of their responses were encouraging - 42% are working to apply lean manufacturing principles, of which 70% of those say its working; many are using the various tools in a sustainable way. And, more than 95% rated safety as a top priority.

Unfortunately, most of their responses were disheartening. Or, put more positively, there's incredible opportunity out there for improvement. Alan Greenspan is said to have observed that original wealth comes from mining, agriculture, and manufacturing. From this original wealth comes much of the derivative wealth in most countries. It saddens me that we seem to have lost the edge in our manufacturing base to low wage countries, when wages are only part of the equation, and more often than not, a very small part. My calculations indicate that American workers only need to be about 20-30% more productive with their manufacturing assets in order to offset a labor cost advantage multiple of four in a foreign country, that is, if their people are paid a total of one fourth what our people are paid (including management employees and expats), we only need to be about 25% more productive to offset that. I am convinced this is readily doable with the right practices. Sadly, we don't seem have to have those practices. Below is a sampling of the survey data that leads me to this conclusion.

As noted, more than 95% consider safety a top priority. However, from extensive manufacturing data, we know that reliability and safety are highly correlated – a reliable plant is a safe plant, is a cost effective plant. Yet, when we ask "Are you training in operating and maintenance practices at a comparable level to your safety training?" 70% said NO. Considering this, when we asked "Is your average level of skills development training, excluding safety and admin training, greater than 40 hours per week?" (My experience has been that it's closer to 20 hours), 86% said NO. It is not possible to be committed to a high level of safety, when we don't train people adequately in operating and maintaining the equipment, so that the risk of injury is substantially reduced. Remember the old saying - If you think education is expensive, try ignorance.

We also have considerable data now that indicate that defect elimination is the right way to go with a plant's strategy - stop the defects causing the failures, then there's less work to do, and the work gets easier and more productive. We also have considerable data that indicate most of the defects, often the vast majority, are introduced through poor design and operation. Yet when asked "Do you believe that reliability in your plant is operations led or maintenance led?" 77% said maintenance led, and only 20% said operations led. When asked "Do operators care for the equipment?" 79% said NO, and only 11% said they had true "operator-owners". When asked "Do your equipment designers apply life cycle cost principles in their design/capital projects efforts?" 79% again said NO. Reliability begins with the design, and is driven by operations. Maintenance can never achieve high performance and good reliability without excellence in design and operations. Most plants are woefully lacking here.

On the management side, only half felt they had good management and when we asked "Are your managers process oriented or results oriented?" an overwhelming 95% answered results oriented. Excellent results come from having excellent processes. If managers are overwhelmingly focused on results, the processes in place will not likely sustain the results achieved in a given year. Sadly, by the time that truth arrives, the manager is likely to be gone due to high turnover in the management ranks - half of all plant managers last 3 years or less. If your improvement process takes longer than

management or executive attention span, it is doomed to failure. Moreover, some 60% of managers are reported as NOT going to the shop floor to review what is really happening and to talk to the people who know the problems best. How can you possibly make good decisions for getting good results if you're not familiar with the problems first hand, and don't really understand how well the processes are working by talking to the people who know them best?

Another very telling statistic relative to the use of Six Sigma and RCM is that less than 5% of the workforce is involved in using Six Sigma, and less than 10% is involved in applying RCM. Most - 67% said that Six Sigma is mostly about justifying projects (not reducing variability as was its original intent), and only 13% follow the DMAIC model of Six Sigma. According to this data, Six Sigma is only used by 5% of the workforce to mostly find projects for which they rarely use the actual Six Sigma model for process improvement. As a friend often remarked "Say what?" RCM doesn't fare much better. As noted, 90% of those surveyed indicated that less than 10% of the workforce are involved in RCM, and no one surveyed is following the RCM standard SAE Standard J1011 (I'm generally OK with this), and only 36% indicated that the results have been sustained.

My experience has been that you only achieve superior performance when everyone is engaged in day to day improvement and defect elimination. This view is substantiated by a large study of manufacturing operations which concluded that eliminating small day to day problems has a much bigger impact on performance than does focusing on the major failures - engage all the workforce to stop the little problems, and the big problems are much less likely to happen. Yet another study of 41 companies with some 360,000 employees also concluded that engaged employees are three times more productive than average.

On the supply chain side, only 20% rated their suppliers as Good; and none rated them as excellent. The balance of 80% rated their suppliers as fair, and none rated them as poor, perhaps a point of relatively good news. Most, 67%, rated their organization as predominantly function oriented or acting in "silos", irrespective of the impact outside their silo. It's very difficult, if not impossible, to have business system excellence with "siloed" behavior.

In planning and scheduling of maintenance work, only 11% felt their process was mature and effective, but no one indicated that their process was fully integrated with production planning, something I believe is essential for a mature and effective planning process. Only 30% had adequate planners, and a surprising 30% said they had no planners. Some 75% indicated they routinely miss many of the requirements for good planning, and finally, some 56% said they were mostly reactive.

The good news in all this - it's a target rich environment for improvement. The bad news - many may not survive long enough to capture all the opportunities available. I believe it's essential that the leadership of manufacturing organizations truly lead - engaging ALL employees in defect elimination and process improvement, not just 5-10%, so that costs come down, production goes up, and competitive position is ensured, in spite of high wages. Indeed high wages come with high productivity. The country deserves no less.

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