TPM: A Foundation for Asset Management Systems

(This is part three of a series linking TPM to the ISO 55000 Standards for Asset Management.)

This is the last in a series of articles that weave the five basic TPM pillars together in ways that can open eyes and minds for the asset management journey and achieve fast, sustainable results along the way.¹ Unfortunately, in many plants, TPM has been boiled down to nothing more than involving operators in the maintenance of their equipment as a stand-alone work process. In doing so, the benefits of the interdependent relationships among the pillars of TPM were lost, leading to marginally sustainable results.

Here are the five basic TPM pillars introduced in the first two columns:

1. Improving equipment effectiveness by targeting the major losses
2. Involving operators in the maintenance of their equipment
3. Improving maintenance efficiency and effectiveness
4. Training to improve skills and knowledge
5. Early equipment management and maintenance prevention design

This article expands the asset management concepts related to the pillars of Total Productive Maintenance and the essential but missing pillars of TPM: leadership and work culture.

TPM: An Asset Management System
The ISO 55000 Standards for Asset Management require that systems be established to assure consistent, accurate, and reliable practices to address the at-risk assets (equipment in this case). The principles of TPM prescribe the same. The TPM pillars provide the basic framework, actions, and roles and responsibilities that must be defined, standardized, and put into action in an interdependent fashion for both TPM and ISO 55000 asset management success. But asset management—and TPM—need more than systems, frameworks, actions, roles, and responsibilities to succeed.

It’s about people
Asset management is more about people than machines and technologies. This was always true with Total Productive Maintenance. When analyzed, there was very little new in TPM. What made TPM work was the ability of the entire organization to shift their paradigm and deploy people differently throughout the equipment life cycle to focus on eliminating major equipment-related losses.

In July 2014, the Institute of Asset Management (IAM) published Asset Management – an anatomy (version 2) as a guide to the internal workings of asset management as described in ISO 55000. (This document is available as a free PDF download at www.theIAM.org.) In this Anatomy, the IAM is quick to point out that “people ‘do’ asset management.” And for those of us who have seen technological solutions come and go, this is an essential point. How people are motivated, led, deployed on new tasks, their willingness, and their competency will make or break any asset management effort.

¹ Click here to read part one. Click here to read part two.
The Missing Pillars of TPM
The American market was introduced to TPM in 1986 by way of a story about automotive supplier Nippondenso introducing a system that spread throughout Japan. As their story unfolds, they describe the early use of “American-style PM” (preventive maintenance) and later “quality circles” in which all employees participated. As a Toyota supplier, quality and reliable manufacturing processes were essential. Teamwork and leadership were implied.

Ultimately, when the Japan Institute of plant Maintenance introduced TPM to the outside world, it began with five pillars and then grew to eight. I have referred to the first set of TPM pillars as the basic pillars of TPM since they convey the fundamentals. But something was left out when we began exploring TPM in our plants and facilities. What about the people? How do we get buy-in, ownership, and accountabilities established?

Leadership and work culture were the missing pillars of TPM when deploying these revolutionary maintenance practices in American manufacturing plants. In Japanese TPM plants, leadership and work culture were givens. Anyone who has tried to implement a paradigm-shifting work process in a traditional manufacturing plant or utility knows there will be pushback—sometimes to the detriment of the improvement process.

It has often been said that people don’t mind change, but they resent being changed. In many situations when a radical change is proposed, it upsets tradition and old habits—“the way we’ve always done things around here.” It takes focused, decisive, and motivational leadership from the top and throughout the organization to lead the TPM change process. The more a compelling business case for change is made, the easier it is for people to get on board. But it’s more than “getting on board.”

Beyond leadership is establishing a new work culture—how people behave on the job—to realize the sustainable business benefits of TPM. Merely getting on board does not necessarily change minds and hearts or instill a new sense of purpose. “Getting on board” can range from full immersion to just tolerating things until it goes away.

Disconnected leadership was and still is the biggest barrier to TPM success in America. When top management sends the message that “TPM is our new organization-wide process for eliminating equipment related losses and improve our overall business performance” and then provides the necessary resources to make it happen, that sends a compelling message. However, old habits and old metrics rule the plant floor until leadership at all levels of the business align their words and actions with top management.

Leadership and work culture will most likely be the biggest challenges associated with deploying asset management processes consistent with ISO 55000.

Asset Management Leadership
While the ISO 55000 standard does not specifically address people issues, the IAM points out the importance of “Organization & People” enablers in their conceptual model discussed in the
Anatomy. Of the six subject matter groups and 39 subjects, five subjects specifically address organization and people:

- **Procurement and supply chain management**: outsourcing collaboration with capable suppliers and contractors; long-term AM goals (cost, risk, quality, performance management)
- **Asset management leadership**: leadership consistency and professionalism at all levels; clearly focused on organizational objectives and priorities
- **Organizational structure**: aligned with AM strategy; information sharing, cross-functional work; multidisciplinary teamwork
- **Organizational culture**: proactively shaped by senior management; aligned with AM goals
- **Competence management**: competence matches roles and responsibilities; systematically defining competency and behavioral requirements; selecting and developing the right people; deploying the right people at the right place and time

Of the five subjects, asset management leadership is the most important one to master on the asset management journey. In the ISO 55000 model, leadership (top management) sets the overall direction for asset management. Then, leadership cascading throughout the entire organization sends a consistent message with clear expectations and accountabilities.

Leadership is required to bring the remaining four subjects to fruition. The IAM Anatomy adds more details in each of these subject areas for successful asset management.

Most of the TPM post-mortem analyses will point to the failure of leadership among the top reasons for the lack of sustainable TPM-related results. Why then would we expect any difference with leading an asset management revolution?

**Focus-on-Results Organizational Culture**

Interestingly, the IAM Anatomy addressed “Organizational Culture” (work culture) as one of the five enabling subjects. To quote the IAM Anatomy:

> The culture of an organization affects everything it does and all aspects of its performance. Asset management is no exception to this, any more than are safety, security, financial management, customer service or corporate reputation. This is why a proactive approach to culture management is important to organizations which seek to benefit from asset management.

The IAM continues their discussion on organizational culture with a compelling message for leadership:

> The first step towards creating a culture which is conducive to asset management is for the senior management team to produce a clear idea of what it is they are trying to achieve and why the approach they are adopting is likely to be effective.
Having a work culture that focuses on results using defined structures and work processes will be one of the biggest enablers of asset management. After all, asset management is designed to achieve sustainable results for the at-risk assets that add value to the business goals. Merely implementing asset management work processes and job titles will not yield the intended results. The traditional or legacy work culture must conform to a new mindset that is instilled by company leadership.

**Lessons learned**  
Leading the transformation from a traditional work culture, no matter how minor or how complex, is as foundational to ISO 55000 based asset management as it was to TPM. Those of you who have been on the TPM journey know the value of leadership. For those who have not been on that journey, just look around at major change processes in your business and assess the importance that leadership played in its success or its demise.