THE VALUE OF EFFECTIVE MANAGEMENT SYSTEMS

By Peter T. Susca

Management systems are the strategic arm of any effective risk management approach. They create the overarching methodology to which all actions are tied and data is processed.

Organizations that truly understand how to maintain effective management systems have a much better chance of predicting and preventing harm to workers and their organization. This begs the question, "What does it take to create and sustain an effective management system?" This article seeks to cultivate a dialogue regarding management system performance expectations across the operational spectrum of an organization.

Management systems should be viewed as a universal connector for the operational needs of an organization. There is no function or value in an organization that is not facilitated by the elements of a management system. Although many functions run without what might be defined as a formal management system (a written operating system defined by an internal or consensus standard), the common elements of all systems apply to all business aspects. As an OSH professional, your knowledge of management systems and their role in the business will facilitate your ability to cross talk with peers in other functions, improve operational effectiveness and establish holistic business improvement initiatives.

Making the Case for a Management System

About 7 years ago, the safety leader of a large manufacturing company asked me to speak at a meeting of its executives regarding the value of safety management systems. This company had a long history of safety value and robust serious injury and fatality (SIF) prevention standards, but realized that it needed a better way of managing the reasons why SIFs were still occurring. My job was to get the executive team to see the world beyond their safety management paradigm consisting of programs, training and accountability. Having been in this situation before, I recommended that we split the group of 25 into groups of five, placing them in separate rooms and giving them each a different operational photo to assess with the same questions to answer. My goal was to have them come back to the main room with the same reasons for the hazards or risks they identified in their photos, each not knowing that the other groups had very different photos. When I told the safety leader of my plan, he was skeptical that it would work, but he let me carry on anyway. Upon completion of the task, I had the five group leaders answer two questions: 1) "What creates situations like these in your operations?"; and 2) "Are these reasons similar to those that create issues in other business areas (e.g., quality, delivery)?" then place their flip charts with their answers at the front of the room.

I started the facilitation by acknowledging the variety of photos and hazards or risks that they identified. I scanned the answers to the first question and picked the leader with the most complete list. This leader explained what his team had said and I asked the others if they identified similar reasons. Just like a well-performed magic trick, they all had written the same reasons: a lack of knowledge, training, procedures, hazard recognition, inspections, communication, defined responsibilities and accountability. Then I asked, "Which of these were also the reasons for challenges in other business areas?" They all answered in unison, "All of them." All that was left for me to present was one slide with the standard elements of a safety management system. Of course, it matched closely with their lists. "So what did we learn?" I asked. The answer was that they needed the same things that the management system had to offer, and not just for safety.

Management Systems: The Continual Improvement Engine

Management systems are made up of a series of interconnected elements that drive the continual improvement of a particular discipline or aspect of an organization (e.g., safety, quality, environment). These elements all serve to support the overarching purpose of the system: to drive continual improvement toward a policy, vison or value expectation. Figure 1 depicts management system elements as part of a strategic continual improvement cycle or engine in a define-measure-analyze-improve-control (DMAIC) format. DMAIC is a data-driven quality approach integral to six sigma methodology that is used to improve processes. Although it is traditionally used for process improvement initiatives (tactics), in this case we are using it to organize the continual improvement elements of a management system (a strategic process, explained further in Susca, 2018). This OSH continual improvement engine develops its horsepower from the three core elements in the center of Figure 1:

- Governance: The values and expectations of the organization, the process for decision-making around these values and expectations, and the leadership roles, responsibilities and accountabilities from the board of directors to the frontline workers.
- Worker engagement and empowerment: How workers are valued and respected in the organization; workers' comfort and willingness to apply their knowledge, skills and expertise in all decisions that impact them and the organization.
- Risk management: The overarching approach to ensure that all threats to the values and opportunities to enhance these values are effectively and continually assessed and managed.

These core elements of the system must be robust, valued and work in concert with each other to be effective. Each of the three elements depends on the others for their ultimate success. For example, without a strong and consistent OSH value and appropriate leadership decision-making, there is little chance that workers will become engaged and, without the

engagement of workers, risk assessments will not be completely accurate and controls may not be effective or sustainable. The other elements of the management system such as metrics and measures, planning, communication, data and records management, and auditing are supportive of the core. They serve to reinforce and validate the core's effectiveness. Working like runners in a relay race, the elements run their leg and hand off their result to the next element(s) that carry it forward. Being part of a continual improvement race requires the elements to run the track as a team repeatedly, getting a little better every lap.

Management systems are designed to self-assess their own health and drive continual improvement of the organization's values and expectations. The self-assessment aspect of the system is similar to the ongoing maintenance of a vehicle. The functioning of elements such as training, risk assessments and inspections create data (measure). This data must be analyzed to determine its value in evaluating the present state versus expectations and the system's capacity to predict future issues (analyze). Similar to vehicle maintenance, the measure and analyze steps require a combination of robust sensors and software interpreted by systems experts. These systems experts need the capacity and authority to interpret the data on the system dashboard and to repair the system when necessary. Similar to a vehicle, malfunctioning systems create risk; if the risk is not controlled and the vehicle stays on the road, an unwanted outcome is forthcoming.

Elemental Relationships: The System Wiring

My friend and management systems mentor Brad Russell always said that the elements of a management system must "talk to one another." I have yet to find a better way to describe this expectation for the relationship between system elements. Many of the management system standards presently available do not thoroughly explain or define expectations for the elemental interconnectivity necessary to make a system truly effective. This interconnectivity is analogous to the wiring connecting the components within an electrical device. The device can have perfect components, but if the wiring is not right, the device will not function as expected.

One example of this connection is the necessity that conformance validation processes (e.g., inspections, observations) be hardwired to the input and output of risk assessment and operational control. The adage that an organization must "inspect what it expects" effectively describes the relationship between expected risk and inspections or observations. When unacceptable risks are identified in risk assessment, controls are typically applied to reduce risk. These controls must be validated on a regular basis, especially if they require the actions of those at risk to keep them whole. Therefore, hazards or risks controlled in the risk assessment process must correlate well with the ones validated in the inspection or observation process. This circuit loop is one of many required in an effective management system.

For example, OSH risks in a work area, especially those with high severity and low-order controls, should be the primary elements of review during inspections and observations. Work area inspection checklists often do not correlate directly with controls defined in the area's risk assessment. This often leaves area leadership focused on housekeeping and tripping hazards while the high-severity risk controls go without regular validation. As a result, the inspection can be performed in conformance with the organization's protocols, checklists and training, yet not be effective in the validation of the area's most crucial controls. This yields a conforming process that is not effective.

When risk assessment and validation activities are hardwired together, inspections and observations become a true test of the expected risk levels defined in risk assessment. When gaps are identified during validation, risk rankings must rise and the identifier on the area's risk radar (e.g., risk map) must move accordingly. If this does not happen, management may believe that risks that do not result in injuries are under control, which is often not the case. Organizations that aspire to have effective management systems should apply a 90/10 rule to conformance validation activities: 90% of validation should identify the efficacy of existing controls for known hazards and no more than 10% of findings should be associated with the discovery of new or changed hazards. Inspection and observation processes are too far downstream in the management system to regularly identify new or changed OSH hazards. New or changed hazards found during conformance validation activities indicate potential gaps in proactive system elements such as risk assessment, management of change, employee engagement, risk communication and audits.

Conforming vs. Effective Management Systems

Over the past 30 years, use of management systems has increased based on the creation of consensus standards from organizations such as BSI, ISO and ANSI. Whether they are designed to manage quality, OSH, environment or energy, the foundational elements and principles are all the same. Although consensus standards represent tremendous value, management systems' value should not be thought of only in the context of standard conformance and certification. These management system standards offer tremendous guidance for the creation of a strategic and comprehensive approach to the management of OSH. While it can be argued that the elements of one consensus standard might be more robust than another, the basic tenets of all management systems are essential to strategic and proactive OSH management.

While an organization may have an objective to certify to an OSH management system standard, it should realize that certification does not always equate to effectiveness. What does effectiveness really mean from a management systems perspective? A discussion of management system effectiveness should start by referencing the definition in the present management system standards. For example, the ISO (2015; 2018) definition for management system effectiveness is the "extent to which planned activities are realized and planned results are achieved." This definition focuses on performance to expectations. Is an organization's approach effective if it achieves expectations that by design are insufficient, unre-

alistic or inappropriate? If a management system is expected to be a predictive mechanism for OSH, then this definition may not be robust enough to provide that capacity.

I wish that I could lay claim to this quote: "Overwhelming performance to underwhelming expectations." I first heard it from a visionary CEO of a large corporation as he described the OSH goal-setting process in his organization. The quote perfectly sums up how organizations and their staff can become content with goals that are easy to reach but add little value to the organization. If an organization does not define, measure and hold itself accountable to the effectiveness of a management system in terms of its predictive capacity, then it may be taking more credit for the system than it deserves. The effectiveness of the system relies on the strength of each element and health of their interrelationship. A significant weakness in the relationship in one or more of these elements (especially the core three noted) and the system will lose its horsepower. Unfortunately, this loss in horsepower can be difficult to detect with the measures most organizations use to measure OSH performance.

Conclusion

Management systems can offer tremendous value to every organization and each function within an organization. OSH practitioners with a solid understanding of how management systems function and dysfunction can add value to OSH and the business as a whole. Problems found in OSH system health are typically not unique to OSH. This knowledge creates an opportunity for the OSH practitioner to team up with peers in other functions, talk the business language and add business value. Start by assessing the condition of your management systems with the following:

•If your management team members do not see the practical value in management systems, provide an opportunity for them to discuss how risks are created in their organization (similar to the example described in this article).

•Assess the health of the core three: governance, worker engagement and empowerment, and risk management. Significant gaps in these areas may result in a predictive blind spot in your OSH approach.

•Continuity test the system wiring. If your elements are not effectively communicating with each other, your system is probably not operating at full capacity.

•Management systems must be healthy to offer sound predictive data. Ensure that your organization understands and measures true system effectiveness, not just conformance with expectations. **PSJ**

References

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DMAIC CYCLE EXPECTATIONS

•**Define:** What will be covered? How good do we want to be? How will it be measured?
Scope, values and policy are defined along with long- and short-term performance expectations and measures.

•**Measure:** What is the present state relative to our expectations?
Gather risk and performance data for systems, processes, exposures, controls, people and operations.

•**Analyze:** What are the reasons for the gaps between our expectations and present state?
Analyses of reasons and causes, and prioritize risk and integrate into business decision-making process.

•**Improve:** What actions will be taken to close the gaps?
Actions to eliminate hazards and control risks, and improve performance of processes and system elements.

•**Control:** Did we close the gaps or meet expectations? Are initiatives or actions performing as expected and sustainable?
If not, then reassess (measure and analyze) and work through the remainder of the cycle.

FIGURE 1

MANAGEMENT SYSTEM CONTINUAL IMPROVEMENT CYCLE

Define
For example, vision, policy, scope, management system expectations.

Measure
For example, risk assessments, OSH performance data, surveys, compliance status.

Governance

Worker empowerment and engagement

Risk management

Control
For example, management system evaluation, management system audit, assessments, inspections, observations.

Analyze
For example, OSH and management system root issues, risk prioritization, control determination or selection, business decision-making.

Improve
For example, planning, process change, operational controls, training, communication.