

ASSESSMENT AND MANAGEMENT OF RISK IN IMPROVING THE OHS MANAGEMENT SYSTEM

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Abstract: The paper discusses options for assessing risks with a view to identifying the nature and scope of the impacts of non-conformities and defining improvement opportunities. Such options are described in terms of hazards and opportunities. The opportunities reflect the measures required to increase the chances of establishing more effective safety management systems. The hazards reflect the circumstances that may prevent organizations achieving the desired benefits and that must therefore be eliminated in the course of system deployment and operation. Once identified, the above will help build the capacity to improve the existing management system in any organization that seeks to systemically modify its occupational safety system. The paper invokes the requirements set forth in ISO 45001, which it cross-references with binding legislation (including Directive 89/391/EEC). The approach helps define the benefits to be derived from assessing risks with a view to identify improvement opportunities and hazards by methods best suited to an organization's environment.

Keywords: risk, OHS management system, ISO 45001, improvement.

1. INTRODUCTION

The operating efficiency and effectiveness of occupational health and safety management systems depends critically on ensuring opportunities for their improvements. The key goal behind such improvements is to provide options for the effective modification of working conditions. Systemic requirements also oblige operators to adhere to the principle of continual improvement (Górny, 2015; Górny, 2017; Li and Guldenmundb, 2018). The scope of improvement measures depends on completing an accurate and appropriate conformity assessment and identifying reasonable improvement measures (Górny, 2017). The measures undertaken to rectify any non-conformities discovered in this process must provide ways to influence occupational safety within the framework of the existing management model (Górny, 2015; Górny, 2017) and help modify other factors for the effective improvement of working conditions (Górny, 2017; Kyaw-Myint et al., 2017; Rembiasz, 2017).

The existing OHS management model should support risk identification and the estimation of risk-related losses. It should also support the improvement of working

conditions. To achieve improvements through the application of systemic requirements (such as those enshrined in ISO 45001), organizations need to make certain that their systemic OHS management is sufficiently effective. Such a system will help them identify non-conformities and improvement opportunities and assess the impact of failures to undertake improvement measures (Górny, 2017).

One tool available for obtaining insights of critical importance for resolving issues and identifying reasonable measures is risk assessment, which supplements proactive approaches to improvement (Alvarez-Santos et al., 2018; Górny, 2015; Górny, 2017; Marx and Metze, 2018). To ensure that systemic measures follow and reflect risk assessment outcomes, such measures need to be consistent with systemic management guidelines (Olechowski et al., 2016; Thekdia and Avenb, 2016).

2. NATURE OF ASSESSMENT AND SYSTEMIC RISK MANAGEMENT

Organizations need to recognize that risks result from uncertainty brought about by failures to recognize hazards. A risk assessment should account for the impacts of risks, the likelihood of their occurrence and the insufficient understanding of risk factors (Badri et al., 2012a; 2012b; ISO 31000). Hazards may be seen as a consequence of failures to implement plans fully or to a sufficient degree. Therefore, improvement measures are needed to:

- Minimize non-conformities in the performance of working conditions management systems in organizations;
- Mitigate the impact of non-conformities (hazards) on workers.

The systemic approach requires the use of a tool that will systemically improve the operation of the existing OHS management system (Alvarez-Santos, et al., 2018; Górny, 2015; Rae and Provan, 2019). The approach will help enhance the effectiveness of such a system. According to ISO 31000 standard the additional potential for improving that system results specifically from (Thekdia and Avenb, 2016):

- Having identified non-conformities in the operation of an existing OHS management system;
- Having assessed potential impacts of non-conformities with reference to the difference, if any, between the assessment outcome and the desired level of compliance;
- Having indicated viable improvement measures taking the form of corrective action aimed at either eliminating the root causes of any non-conformities that may result in adverse impacts or preventing the recurrence of such non-conformities.

The systemic improvements achieved by promptly addressing any existing non-conformities should enable organizations to secure positive effects of such improvements (Alvarez-Santos, et al., 2018; Górny, 2015; Rae and Provan, 2019; Thekdia and Avenb, 2016). To that end, organizations need to address the effects of systemic non-conformities. To achieve the desired effects, it is essential that risks be assessed by the approach used to formulate safety requirements, that is, for instance, by recognizing that the ISO 45001 requirements pertaining to OHS management do not refer to any specific organizations or individuals. The same universal approach should be applied in risk assessments and risk management. The fundamental aim of assessing and managing risks is to facilitate effective and efficient improvements in OHS management. The assessments help organizations to see relevant issues from a

global perspective and respond with appropriate improvement measures (Badri, et al., 2012a; Marx and Metze, 2018). To ensure that such measures are indeed successful, organizations need to create a relevant improvement action plan. The plan must be designed to boost the effectiveness of OHS management systems.

3. RISK ASSESSMENT AND MANAGEMENT AIMED AT IMPROVING SYSTEMIC MANAGEMENT

The purpose of actions taken as a follow-up on risk assessment findings is to boost the effectiveness of an existing OHS management system. Such actions additionally help organizations to meet legal requirements, including those laid down in Directive 89/391/ECC. Their effects include enabling organizations to:

- Achieve occupational safety improvements by adopting proper improvement measures that are identified by way of risk assessment and that meet systemic management requirements;
- Ensure that all stakeholders engage in improving the performance of the existing OHS management system,
- Ensure impact on work productivity by improving working conditions and placing greater emphasis on protecting worker health and safety.

In examining the characteristics and outcomes of improvements adopted in keeping with systemic management guidelines, due note should be taken of the successive stages of this process. Organizations can use the systemic management guidelines proposed in the Deming cycle (PDCA, Plan – Do – Check – Act) to identify a range of reasonable improvement measures (Górny, 2015; Górny 2017). Links between such measures and ISO 45001 requirements are shown in Table 1.

Table 1

Measures taken to improve the effectiveness of systemic management in the PDCA cycle

Stages of the PDCA cycle associated with ISO 45001 requirements	Sample measures taken to improve the effectiveness of OHS management systems at various stages of the PDCA cycle
PLAN Intention	<ul style="list-style-type: none"> - Formulate policy and set safety goals, - Assess current safety level, - Define options to solutions for improving occupational safety, - Eliminate hazards and risks in areas covered by systemic requirements, - Identify improvement measures and processes essential for achieving desired outcomes.
DO Support and act	<ul style="list-style-type: none"> - Implement processes in accordance with the adopted action plan.
CHECK Verify	<ul style="list-style-type: none"> - Monitor and measure the results of actions, - Monitor and measure the results of processes adopted in keeping with policy tenets, - Report outcomes to help assess improvement opportunities.
ACT Correct, Improve	<ul style="list-style-type: none"> - Take action to continually improve the performance of occupational safety systems and that of the existing OHS management system.

Source: Own work based on ISO 45001

Table 2

Hazards and opportunities that affect the effectiveness of management and are relevant for management improvements, based on ISO 45001:2018 requirements

Areas of improvement	Hazards and opportunities of significance for improvement outcomes
Incident, non-conformity and corrective action	<ul style="list-style-type: none"> • Opportunities: <ul style="list-style-type: none"> - Define and implement improvement measures best suited to the nature of current non-conformities, - Deploy improvement measures best suited to current circumstances and to the durations in which non-conformities persist, - Deploy improvement measures best suited to the nature of non-conformities and their specific impacts, - Deploy improvement measures aimed at eliminating actual root causes of non-conformities, - Deploy improvement measures that are helpful in adjusting and improving the accuracy of current risk assessments, - Ensure that achievable improvement outcomes are reliably identified prior to adoption. • Hazards: <ul style="list-style-type: none"> - Improvement measures are ill-suited to the nature of non-conformities and the duration over which they persisted, - Improvement measures fail to help identify and eliminate actual root causes of non-conformities, - Improvement measures fail to help mitigate risks, - Risk assessment fails to account for all factors affecting risk levels, - Improvement measures are contrary to the concerned organization's priorities adopted as a mandatory requirement, - Any current circumstances that necessitate the need to modify either improvement measures and/or improvement measure adoption schedule are not accounted for, - Improvement measures do not help achieve the required safety level due mainly to the lack of at-source checks of the root causes of events or non-conformities.
Continual improvement	<ul style="list-style-type: none"> • Opportunities: <ul style="list-style-type: none"> - More effective system performance to be achieved by employing good occupational health and safety practices, - Raised worker awareness on the use of the system and the resulting outcomes, - Ensuring worker support for measures taken to enhance solutions that improve occupational safety, - More effective continual improvement achieved by raising worker awareness of the need for such improvement, - Better safety performance achieved by simplifying and modifying tasks and employing new skills and worker competencies. • Hazards: <ul style="list-style-type: none"> - Areas in need of improvement poorly identified, - Failure to secure options for achieving continual improvement, - Workers unaware or insufficiently aware of the need to take improvement measures tailored to tackle existing non-conformities, - No assessment or insufficiently good outcomes of the assessment of measures taken to improve the effectiveness of systemic occupational safety management.

Source: Own work based on ISO 45001

In pursuing improvements, organizations should consider all factors that are critical for the effectiveness of systemic management and that enable organizations to achieve the desired improvement outcomes. The complexity of the relevant actions depends on:

- The environment in which organizations operate (including headcounts and other measures of organization size, safety culture, and the legal and other environment in which organizations operate);
- The scope covered by the management system in place in organizations;
- The organizations' business and the related occupational safety hazards and risks.

The areas, governed by standards, in which improvement-related hazards and opportunities associated with failures to secure the required system performance and outcomes can be identified for all aspects of system implementation (Górny, 2015; Górny, 2017). Under the standards, employers are required to recognize and address hazards and opportunities in their organization while ensuring worker health and safety (Marx and Metze, 2018).

The benefits derived from solutions seen as growth opportunities can be examined for their impact on the effectiveness of systemic occupational safety management. Hazards are a potential cause of failures to achieve the required management outcomes (Górny, 2015; Górny, 2017; Kazutaka, 2012). An awareness of the potential benefits of measures is critical for identifying hazards that potentially affect system performance. Such hazards may be viewed as improvement opportunities. Systemic occupational health and safety management guidelines can be used to identify the benefits resulting from the assessment of risks in the process of improving occupational health and safety management systems (Li and Guldenmundb, 2018). Risk assessments allow organizations to:

- Evaluate the systemic measures taken to improve the effectiveness of the occupational safety management system;
- Identify the potential hazards that may lead to non-conformities in systemic occupational safety management;
- Control the implementation of improvements defined in the adopted safety programs;
- Assess the risk of disruptions to the implementation of safety plans and, specifically, in the achievement of the adopted safety objectives;
- Identify priorities in actions taken to improve the effectiveness of systemic occupational safety management.

The responsibility for achieving the effectiveness of management systems rests with top management (Marx and Metze, 2018). Their job is to identify challenges and make adequate improvements. It is essential to adjust such efforts to the environment of the concerned organization.

3. CONCLUSION

Every organization that sets out to adopt an OHS management system is responsible for the effects achieved by operating it properly. The implementation of the system is highly critical as it determines the resulting benefits and may help prevent losses. As stipulated in the ISO 45001 standard, the effective functioning of an OHS management system depends on the concerned organization identifying non-conformities and making appropriate improvements. To that end, organization need to

use tools that will enable them to assess action outcomes. They must therefore assess risks in ways that adequately relevant for the potential non-conformities. Risk assessments can also be used to ensure continual improvements in occupational safety management system. Such assessments help organizations to achieve their intended system deployment outcomes. They help improve the effectiveness of systemic management and identify the actual impacts of non-conformities. By identifying possible impacts, organizations can identify the improvement potential best suited for the circumstances at hand as well as the outcomes of any completed improvement measures.

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