GUIDELINES FOR IMPLEMENTING OCCUPATIONAL HEALTH AND SAFETY SYSTEMS IN INDUSTRIAL COMPANIES

OTÁVIO JOSÉ DE OLIVEIRA

otavio@feb.unesp.br

UNESP - São Paulo State University

Department of Production Engineering

Av. Eng. Luiz Edmundo C. Coube, 14-01

CEP: 17033-360, Bauru, SP - Brazil

Phone: +55 (14)3103 6122    Fax: +55 (14) 3203 6146

ALESSANDRA BIZAN DE OLIVEIRA

alebzan@terra.com.br

UNESP - São Paulo State University

Department of Production Engineering

Av. Eng. Luiz Edmundo C. Coube, 14-01

CEP: 17033-360, Bauru, SP - Brazil

Phone: +55 (14)3103 6122    Fax: +55 (14) 3203 6146

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Abstract

The extremely competitive world scenario has forced organizations to modernize their processes and continuously search for new tools that can bring real competitive advantages. In this context, occupational health and safety management systems emerge as increasingly more important tools for the organization’s improved financial, operational and social performance.

However, for an occupational health and safety system to be effectively implemented and obtain good results, companies need to be aware of the difficulties encountered during this process, and try to solve them in an effective and coherent manner with their objectives.

As mentioned, the main objective of this paper, which is based on the theoretical referential, is to identify the main difficulties and propose guidelines for implementing Occupational Health and Safety Management Systems. A case study with an exploratory function was also performed at a Brazilian automotive battery manufacturer.

Key words: Occupational health and safety, system implementation, resistance to change.

1. Introduction

In face of market globalization and working in increasingly more competitive environments, organizations have sought new management systems that provide them with competitive advantages.

Along these lines, good performance in occupational health and safety is decisive for company profitability since it reduces the risk of accidents, promotes worker health and satisfaction, improves operational results and the organization’s image before society and creates new opportunities for growth.
Besides the human cost, work-related accidents and illnesses impose financial expenses on individuals, employers and society as a whole.

According to Salamone (2008), the motivations that lead companies to adopt occupational health and safety systems are mainly due to factors like continuous improvement, improved image, greater competitiveness, the chance to reduce management costs, new market opportunities, higher productivity and improvements in products. The pressures exerted by stakeholders in some cases are also pointed out by organizations as incentives for the adoption of occupational health and safety management systems, as are pressures from public authorities, local communities and clients.

During the occupational health and safety management system implementation process, organizations encounter several problems and difficulties, which cause problems for management as well as the other collaborators.

As mentioned, the main objective of this paper is to identify the main difficulties and propose guidelines for implementing occupational health and safety management systems, elaborated from theoretical revision. A case study with an exploratory function and focus on this theme was carried out at a Brazilian automotive battery manufacturer.

The data collection instruments used for its elaboration were semi-structured interviews with the safety technician, on-site observation and document analysis, mainly of work procedures and instructions.

2. Occupational Health and Safety Management Systems

According to Oliveira (2004, p.15), system is a set of interactive and interdependent parts that form a single whole with common objectives and purposes, synergically carrying out a specific function. A system is comprised of other smaller systems, called subsystems, which are sequentially
dependent on each other as if they were the links in a chain. The performance of each of these parts defines the success of the greater system, and if one of them fails, it compromises the performance of all of them.

A management system is a set of interrelated elements used to establish the policy and objectives, and to reach these objectives, it includes an organizational structure, planning activities, responsibilities, practices, procedures, processes and resources (OHSAS 18001, 2007).

The implementation process of a management system adds value to organizational culture since it develops competences related to the planning and execution of activities, prioritizes the capacity of teamwork and promotes the improved reliability of production systems.

According to OHSAS 18001 – Occupational Health and Safety Assessment Series (2007), occupational health and safety are conditions and factors that affect, or could affect, the health and safety of employees or other workers (including temporaries and outsourced workers), visitors or any other person at the workplace.

An occupational health and safety management system can be defined as part of the organization’s management system used to develop and implement its policy and manage its occupational health and safety risks (OHSAS 18001, 2007).

The implementation of occupational health and safety management systems has been the main strategy to combat the serious social and economic problem of work-related accidents and illnesses and it can also be used by companies as a factor to increase competitiveness (TRIVELATO, 2002).

When an employee is hired by a company, the perception he has regarding the physical and social environment he finds will influence his daily behavior. That is why aspects such as
order, cleanliness and personal hygiene are of utmost importance, as is the organization and utilization of space by means of an appropriate layout (BARBOSA FILHO, 2001).

3. OHSAS 18001 - Occupational Health and Safety Management System

The British Standard BS 8800 (*Guide to Occupational Health and Safety Systems*), created in 1996, was the first successful attempt at establishing a standard reference for implementing a health and safety management system. It aims at improving the organization’s performance in terms of health and safety, providing guidance with regards to how its management should be integrated with the administration of other aspects of company performance.

This standard was broadly disseminated throughout the world and adopted in the most diverse industries. It is comprised of a series of elements (requirements); however, it does not establish performance criteria or even specifications on how to design the system.

In 1999, OHSAS 18001 was published by the British Standards Institution (BSI). It was elaborated by a group of international entities (BVQI, DNV, LLOYDS, SGS and others), which used BS 8800 as its basis. It was developed in response to the needs of companies to manage their occupational health and safety obligations more efficiently.

In July 2007, OHSAS 18001:1999 was replaced by OHSAS 18001:2007, and some alterations were introduced, thus reflecting the experience of 16,000 certified organizations in more than 80 countries (QSP, 2007).

OHSAS 18001 aims at providing organizations with elements of an effective occupational health and safety management system that can be integrated with other management requirements and help them achieve their OHS and economic objectives (OHSAS 18001, 2007).
It is applicable to every type and size of organization and can be integrated with other management systems (quality, environment and social responsibility) in order to help them achieve their occupational health and safety objectives. As per Figure 1, OHSAS is based on PDCA methodology (OHSAS 18001, 2007).

Figure 1 – Spiral of the Safety and Occupational Health Management System

Source: OHSAS 18001 (2007).

The basic principle for an occupational health and safety system based on norm aspects involves the need to determine evaluation parameters that not only incorporate operational aspects, but also top management’s policy, management and commitment to the process, change and continuous improvement of occupational health and safety conditions (QUELHAS; ALVES; FILARDO, 2003).
The basic principle for an occupational health and safety system based on norm aspects involves the need to determine evaluation parameters that not only incorporate operational aspects, but also top management’s policy, management and commitment to the process, change and continuous improvement of occupational health and safety conditions (QUELHAS; ALVES; FILARDO, 2003).

4. Difficulties found in implementing occupational health and safety management systems

Organizations are currently facing an environment full of change and complexities that deeply interfere in production performance, the product life cycle and the speed of modernizing projects and processes (KOUFTEROS; VONDEREMBSE; DOLL, 2002).

According to Robbins (2002), successful organizations are those with such a degree of flexibility that they are able to quickly respond to the competition.

Throughout the 1980s, the concept of organizational culture gained prominence among researchers and executives. At that time, it was said that the key to an organization’s success was the development of a strong and unique corporate culture and that top management should construct it by articulating a set of values that would be reinforced by formal and informal policies and shared and respected by all collaborators (MILAN, 2005).

Corporate culture thus became a weapon in favor of successful businesses, and nowadays, many organizations have shown growing interest in the concept of a safety culture as a means to reduce the risks of disasters, accidents and incidents.

Safety should not only be evaluated through regulations, but also become a part of the organization’s culture through compliance at every level of the administration (MOHAMED, 2002).
Studies show that success in the implementation of a health and safety system in an organization depends on the skills of those agents responsible for change in controlling complex and unpredictable situations (HASLE and JENSEN, 2006).

Beer and Nohria (2001) point out that most cases of failure are caused by being in a hurry to change the company. The managers end up getting lost in initiatives and lose focus due to the number of alternatives available in literature and/or proposals by consultants.

The employees become more willing to cooperate with improvements in the organization’s performance when they begin to believe in real commitment by management (LANGFORD et al., 2000). That is the joint participation that provides the feeling of accountability, becoming a critical factor for the success of the change (CHOWDHRY et al., 2006).

Acceptance and understanding of the concept of health and safety on the part of managers and participation by human resources in this process of change are of fundamental importance to get the involvement of all of the collaborators and for obtaining good results.

The organizations can improve safety results by focusing on improvements in equipment, procedures and materials, seeking to positively change human behavior through education and training (MOHAMED, 2002).

Management commitment and the participation of the employees in the creation of a culture of safety makes them feel more responsible with regard to prevention and maintenance of an environment free of accidents and health risks (CHOWDHRY et al., 2006).

There is a direct correlation between a safe work environment and the climate of safety that includes management commitment, communication and involvement of workers and attitudes (MOHAMED, 2002).
The efficiency of these systems could be improved considerably if some negative factors of common occurrence were previously observed, such as: profile and lack of experience on the part of business people in these matters, performance indicators focused only on financial aspects, lack of perseverance, claims of lack of time to carry out some implementation tasks, difficulty to establish long-term goals and strategic plans, lack of vision on the part of employees as effective collaborators towards the company’s growth, documents that are more bureaucratic than necessary, high turnover in work force and little use of some registries (ANHALON, ZOQUI and PINTO, 2005).

According to Shi et al. (2007), technical training for shop floor employees is an important factor for them to be able to contribute towards the development and maintenance of a management system.

Success in implementing management systems does not only need internal cooperation between technicians and administrative and operational personnel, but also external support, such as financial, political and market incentives (SHI et al., 2007).

The understanding that a safety system is a collective activity and must be exercised by everyone is the first step for the implementation of management system to achieve the success expected, thus providing a common language that leads to synergy among the organization's collaborators around a safety-oriented mentality.

5. Case Study

A case study with an exploratory function was carried out for this paper. Its objective was to provide a better foundation for the researchers and contribute towards the theory being presented.

The company studied is an automotive battery manufacturer located in the midwest of the state of São Paulo and it is certified in ISO 9001 (Quality Management System) and ISO
14001 (Environmental Management System) and it is currently implementing TS 16949 (Automotive Specification) and OHSAS 18001 (Occupational Health and Safety Management System).

Its current Occupational Health and Safety Management System is based on the regulatory norms instituted by the Brazilian Ministry of Labor and the other requirements applied to the automotive battery manufacturing sector.

Management is aware of the importance of health and safety management at the company and has been constantly investing in preparing the environment for safe working conditions.

The organization has an Occupational Health and Safety Department comprised of three safety technicians directly subordinate to the organization’s General Directorate.

The company has already implemented an Environmental Risk Prevention Program that aims at the preservation of the workers’ health and physical integrity. The main risks managed at the company are: chemical, from the release of lead dust and smoke, sulfuric acid, caustic soda and acid vapors, physical, such as noise, extreme temperatures, electricity and high pressure, and ergonomic, such as carrying excess weight and inappropriate posture.

The company’s risk map is elaborated by representatives of the Internal Commission on Accident Prevention under the supervision of occupational safety technicians and it aims at studying risk areas and their seriousness for the activities performed there. In order to protect the employees from harm, the company has Collective Protection Equipment in its installations and it requires its collaborators to use Individual Protection Equipment in areas where the activities performed generate safety and health risks.
Every week, a Weekly Safety Dialogue is held where workers are told about the accidents that occurred during the week and the corrective actions that were taken by the company to avoid their recurrence. Besides disseminating safety-related information, this Weekly Safety Dialogue also encourages worker participation to suggest improvements in accident prevention.

It is worth underscoring that a study carried out by the company in 2006 showed that around 44% of the accidents were caused by collaborators who had been hired less than one year before.

As a result, the organization has an integration program with new employees where they are instructed on measures for the prevention of accidents and occupational illnesses. This new collaborator is more closely accompanied over the first six months of work than on average and his behavior is evaluated in relation to the company’s internal safety norms, and if necessary, interventions are carried out by occupational safety technicians.

One of the biggest complaints by the company’s safety technicians is non-compliance by some collaborators with the adopted safety rules. This resistance most often occurs in middle management, which ends up generating conflicts with the other collaborators, who also feel no obligation to follow them.

Most middle management employees who resist change are older employees who had remained detached from market and society demands. In many cases this deficiency ended up being caused by the company itself due to a lack of incentives to search for new challenges and knowledge.

The work by those responsible for safety is developed with each employee according to their level of acceptance of norms and procedures related to safety, always trying to develop a personalized program to instill the culture of safety in the most resistant.
Human resources is beginning a program to develop leaderships where, besides middle management, other collaborators are also trained to understand and develop work geared towards the organization’s strategic vision, where the improvement of the health and safety system is one of the main objectives.

The results of the occupational health and safety management system are not linked to any type of remuneration system or any other incentive; however, there are some studies for this to be implemented in the future.

In a general sense, it is possible to see investments in improving safety and health through safety technician support in performing their functions and through the search for greater involvement of human resources in this process.

With the responses obtained from interviews held with the safety technician, document analysis and on-site observations, it was possible to raise the main difficulties encountered by the company during the Occupational Health and Safety Management System implementation period, as per Table 3.

<table>
<thead>
<tr>
<th>Difficulties found in implementing the Occupational Health and Safety Management System</th>
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<tbody>
<tr>
<td>• Resistance to change;</td>
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<tr>
<td>• Employees’ low levels of education;</td>
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<tr>
<td>• Elaboration of instructions and procedures;</td>
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<tr>
<td>• Internal communications failures;</td>
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<td>• Low involvement of other sectors of the organization;</td>
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<td>• Lack of performance indicators;</td>
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<td>• Understanding by all that the Safety Department is the only one responsible for the management system’s results;</td>
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<tr>
<td>• Lack of commitment by middle management;</td>
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<tr>
<td>• Employees’ low levels of awareness;</td>
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<tr>
<td>• Does not establish health and safety as one of the company’s strategic objectives;</td>
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<tr>
<td>• Low involvement of Human Resources in training.</td>
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</table>

Table 3 – Main difficulties found in implementing the Occupational Health and Safety Management System
The low involvement of Human Resources in training held by the organization is seen as an obstacle to awareness of those involved in the Occupational Health and Safety Management System implementation process. Sector participation is very timid and the main efforts are still concentrated in the hands of the company’s safety technicians.

The organization invests little in internal communication tools such as panels, banners and others and so many employees are unaware of the new programs developed by the company, thus resulting in low indexes of involvement and resistance to proposed changes.

6. Guidelines for Implementing Occupational Health and Safety Systems in Industrial Companies

Based on the theoretical referential and the case study with an exploratory function, the following guidelines are presented for implementing occupational health and safety management systems in industrial companies.

- **Management Commitment**

Success in the implementation of health and safety systems depends on the skills of those agents responsible for change in controlling complex and unpredictable situations. Acceptance and understanding of the concept of safety and health by top management and its commitment is of fundamental importance. Those higher up in the hierarchy must give the example through their own actions and the constant search for people to join this process.

Thus, when they begin to believe in top management’s real commitment to the system, employees become more willing to cooperate with improvements in the organization’s safety and health performance.
With these actions, it is possible to observe that most employees at the organization will feel more willing to participate in the process, making suggestions for improving the work environment and helping to make other workers aware.

- **Minimizing resistance to change**

Changes always result in reactions of fear and insecurity on the part of those who are involved with them, and their effectiveness is heavily dependent on planning, the leaders’ skill in establishing objectives and goals and the understanding on the part of those involved of the organization’s objectives. People can be less resistant to change the moment they begin to understand its true nature and its importance for the organization and for their own lives.

Phenomena such as conflicts, uncertainties, fear of the unknown, lack of information and feelings of loss of power can generate resistance to the proposed changes and interfere negatively in the implementation of occupational health and safety management systems in organizations. These resistances can be minimized through incentives for participation in the process and the valorization of opinions, empowerment and the appropriate availability of information.

- **Identify aspects in the organization’s culture that can contribute towards or jeopardize the implementation of occupational health and safety management systems**

Make a previous analysis of the collaborators’ profile; identify their degree of education, their behavior in carrying out activities as well as their relationship with the leaderships and other employees. These are important factors to be able to identify beforehand the main resistances that may emerge during the implementation of management systems, trying to get rid of them in advance so they do not cause unnecessary disturbances in the process.
Technical and managerial empowerment of the professional responsible for occupational health and safety management at the company

The profile of the professional responsible for occupational health and safety management is important to obtain the adherence of all the collaborators in the occupational health and safety management programs. Besides technical knowledge, the person must also have communication and interpersonal relationship skills.

Occupational health and safety technicians must have technical and managerial skills and be aware that to have teamwork and manage people, it is necessary to show the individual and collective benefits from accident prevention.

Communication skills do not only involve the capacity to disseminate information in a verbal or written manner, but also to be able to transform it into a language that is understood by all of the workers.

If there is no experience in the matter, evaluate the need for hiring a consulting firm

Some organizations, especially small companies, may need to hire a consulting firm to help their personnel in the implementation or improvement of their occupational health and safety management system.

This is due to the lack of practical experience on the part of the occupational health and safety professional and other company leaders as well as the need to use new concepts and tools in this management area.

When contracting a consulting firm, contact with organizations that have been helped by it is an important measure for your evaluation, since through this information it is possible to evaluate its experience, effectiveness and ethical behavior while providing its services.
- **Invest heavily in internal communication with the objective of explaining the new procedures or new safety management system to employees**

The company must use communication means and techniques that are compatible with its employees' cultural level in order to inform everyone about the company's objectives and the opportunities the new procedures or a new management system structured on safety can provide.

By doing this in an effective manner, it is possible to establish a high level of understanding and complicity between the company and its employees, eliminating rumors capable of generating counterproductive fears and troubles.

- **Invest in technical and behavioral training to prepare an empowered and conscious labor force.**

Training must be understood as a strategic means to develop competences so the employees become more productive, creative and innovative and contribute towards achieving the organization’s objectives. For such, it is necessary to plan them according to the needs identified and according to the requirements demanded in each function.

Training needs can be identified through evaluation tools of required skills. In the case of the implementation and management of an occupational health and safety management system, training takes on an even greater dimension since it creates the great opportunity to mobilize labor regarding the safety issue.

Training is aimed at informing and stimulating the use of intelligence, creativity, communication and the autonomy of people as resources for developing organizations. People need to be trained and motivated in the most appropriate manner possible, creating a high degree of awareness regarding the benefits of safety and health norms for the company.
Work in close partnership with human resources

Integration between departments generates positive results for the entire organization and enables the construction of an internal environment with less conflict and resistance.

Involvement of human resources in every change process is important in order to identify the training needs related to employee development as well as the use of the appropriate techniques for executing the job. This permits better understanding and a true commitment by collaborators with the proposed changes.

Define performance indicators in occupational safety and feedback for the system

Together with the other areas in the organization, define safety and health performance indicators as well as others that identify opportunities for improvement and verify the system’s evolution, such as accidents indexes with or without absences (accidents / hours worked), number of fatal accidents, among others.

Their objective is to permit top management and other collaborators to visualize the company’s health and safety management system’s performance, thus permitting a self-evaluation of the performance and the establishing of action plans for eventual correction of established objectives and goals.

7. Conclusion

In recent years, organizations have achieved countless benefits from implementing management systems. However, difficulties often emerge in this process that can reduce potential results.

This study made it possible to formulate some general and introductory guidelines, presented herein in summarized form, with the objective of minimizing difficulties in implementing an occupational health and safety management system.
These guidelines were elaborated from a theoretical revision. However, a case study with an exploratory function was conducted at a Brazilian automotive battery manufacturer with the objective of finding more in-depth theoretical precepts and helping to refine the elaboration of the guidelines.

The theoretical referential presented in this paper in abridged form due to space limitations allowed us to verify the main difficulties found by organizations in implementing occupational health and safety management systems, as well as suggestions to minimize them, and this was fundamental for conducting the case study.

In the case study it was possible to analyze an occupational health and safety management system and ascertain the main difficulties found in its implementation. By analyzing the facts, it became clear that support by Top Management, Human Resources and the participation of all collaborators is a determining factor for the success or failure of the referred to management system, which corroborated the theory.

The difficulties presented are linked to diverse factors, but we can underscore the most important ones as being communication failures between the higher management levels and the shop floor or the operational level, the low degree of worker participation, an inadequate planning of actions to be taken, employee insecurity, the lack of indicators to measure performance, among others.

The real benefits the implementation of an occupational health and safety management system can provide to employees and the company in general are not duly explained. It thus becomes much more difficult to motivate and obtain commitment from the collaborator in the safety cause, thus resulting in uncertainties and fear in relation to this type of change.

The studies made it possible to verify and conclude that several difficulties are encountered when implementing management systems. They could be minimized through appropriate
strategic and financial planning, investments in training, hiring of skilled professionals and employee commitment with regard to the company's health and safety system. We believe that the objective of this study was achieved, since through the case study we were able to confirm theory information and formulate guidelines, although generic and introductory, for implementing occupational health and safety management systems.

The case study was fundamental for formulating the guidelines because it made it possible to verify top management involvement with regard to the occupational health and safety management system, the obstacles encountered by safety area professionals in the conscientization of shop floor workers and middle management, the awareness that the involvement of human resources is important for the program’s success, the need to hold constant awareness training as well as the importance in seeking the appropriate internal communication system within the company, which permits the understanding and involvement of all employees in search of common objectives.

With regard to limitations, we were able to verify that the work was carried out at an industrial company located in the region of Bauru, and it is also worth noting that the proposed guidelines have yet to be tested and most are based on the theory presented. A quantitative survey is in progress and it aims at expanding and providing a better foundation for the proposed guidelines.

References


OHSAS 18001 - *Occupational health and safety management systems*: requirements.


