

Health as well as safety? The role of information technology in integrated risk-based health and safety management

Preview

South African industries have traditionally had a strong focus on safety awareness. However, the importance of occupational health management in the workplace is gaining momentum, as well as the acceptance that health management needs to form part of a fully integrated risk management system. Many South African companies still rely on separate paper-based systems to manage their safety and health risks. It is however clear that the developments in information technology could facilitate this integrated risk approach to health and safety risk management.

Although occupational health and safety management has improved, much remains to be done. The decline in the serious injury rate that has been achieved in some organisations is due to changes in the nature of work and a result of sustained improvements in achieving a safer and healthier workplace.

Workers' health often receives less attention than their safety, and regular health surveillance of workers is regrettably still far from universal. In small-scale mines and most industries in South Africa it seems almost non-existent. Noise, vibration, heat and humidity affect the ability to work efficiently. They can also affect safety and be major causes of sickness or disease. Longer and more frequent work-shifts also have implications for both occupational health and family life.

To make matters worse, the impact of HIV/AIDS on industry in South Africa is extremely serious, cutting the supply of labour and slashing income for many workers. Increased absenteeism raises labour costs for employers. As illness forces workers to leave their jobs, valuable skills and experience are lost, often leading to a mismatch between human resources and labour requirements. This too can dramatically reduce safety and health standards within the workforce.

Human behaviour and risk management

Because workplace health and safety is an element in all human endeavours, human behaviour holds the key to further improvements in health and safety management,

and the implementation of safety and health standards. The examination of the ability of the workforce to behave safely must therefore be an integral part of risk assessment and other safety management tools such as audits. There is no point in advocating the importance of safety behaviour if it is not feasible to behave safely.

To this end, greater effort is required in promoting an understanding of risk assessment, risk management and safety audits that are specifically based on the behavioural contribution to accidents and unhealthy conditions. The purpose of introducing risk management is to improve health and safety. The challenge is how to introduce risk management in a well thought-out, structured way that is understood and practised by all, and is seen to be beneficial.

Education and training are the foundations for enabling improvement in health and safety. Sound basic education for work, induction and refresher training, and safety specific training, are crucial for the implementation of effective health and safety hazard prevention programmes.

As more emphasis is placed on the human factors that affect safety and health performance, a key objective is to instil a strong safety culture in all aspects of an organisation. An improved safety culture is partly a question of resources and technology. Above all, it requires better information, better management and higher standards to confronting the ever present, ever evolving changes at the workplace.

The situation in South Africa is further compounded by a shortage of trained occupational health professionals. Even those that are available have major problems in applying their knowledge. Getting access to accurate relevant occupational health risk information and managing it in a systematic and comprehensive manner is still a major problem in many organisations of all sizes and types. This is due mainly to informal, poorly developed or even non-existent integrated health and safety management systems.

Risk-based integrated health and safety management systems

The purpose of a formal risk-based integrated health and safety management system is to identify, assess and control workplace health and safety hazards. To be effective, the following system components are essential:

- clearly-stated company policy and management commitment

- risk-based analysis of health and safety hazards at the work site
- control measures to eliminate or reduce risks from hazards
- risk-based worker competency and training
- risk-based inspection and occupational hygiene monitoring program
- incident reporting, investigation and management
- risk-based emergency response planning
- risk-based medical surveillance
- systematic communication and program administration

International standards such as OHSAS 18001 help describe how these fit together within an integrated management system framework.

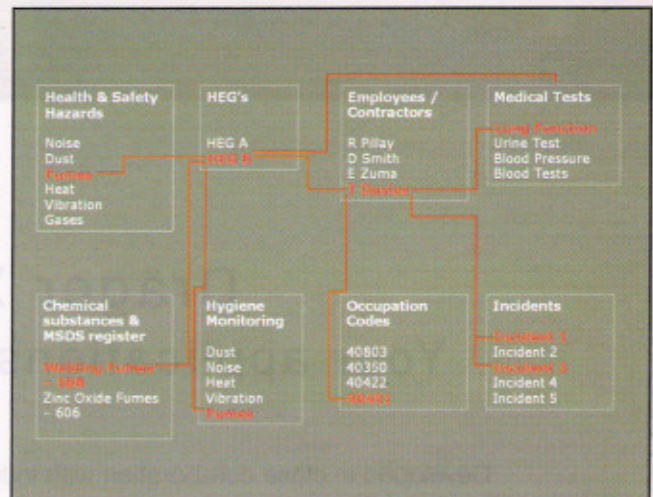
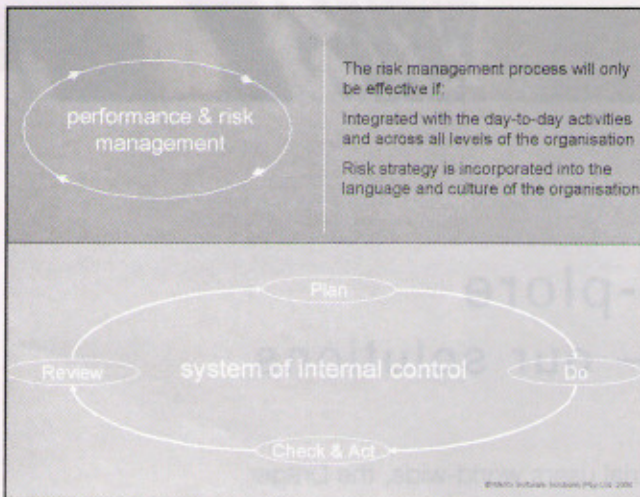
The role of information technology

The ability to share knowledge and communicate effectively in real-time with access to real-time management information is crucial. Modern information technology is creating new opportunities for exchanging information, creating databases, analysing practices and procedures,

and identifying where efforts should be focused. Many organisations are now starting to manage their health and safety systems in accordance with international standards within electronic applications operating on relational databases.

The ability to take the health and safety risk information generated, on an ongoing basis by the safety personnel and the occupational hygienists, and present it to management and medical surveillance personnel in such a way that the medical surveillance requirements are easily identified based on accurate real-time risk information, is necessary if health and safety management is going to be effective. Typical health and safety risk information includes risk assessments, behaviour monitoring, occupational hygiene exposure monitoring, incident management information and personal medical surveillance information. It is also imperative that medical surveillance results are also easily communicated back to management and the occupational hygienist in real time to facilitate effective corrective and preventative action.

The figure below illustrates the minimum data relationships



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that are required between the various system components to facilitate true effective integrated safety and health management. Without these relationships, effective integrated systems are virtually impossible as trends are not apparent and crucial safety information related to individuals, groups and business processes is not available.

In the example above, with these relationships established, it is possible to view the complete and comprehensive health and safety risk profile for any individual, group, business process or occupation.

All of the above information must be generated and actioned within a strong management system framework in accordance with the requirements of OHSAS 18001 or similar framework. All of these components must also be facilitated by the electronic management system application to realise the true benefits of a fully integrated system.

By embedding all the management system elements within a strong relational framework on an electronic platform, it is possible to significantly empower the workforce and

management through the application of consistent approaches to risk assessment. Access to real-time relevant health and safety information and the development of focussed, management programmes, to more effectively manage health and safety will become apparent. The integration of the systems developed for the management of safety with the systems developed for managing health using modern information technology, it is possible to build a management system which is more effective than the isolated paper based systems prevalent in industry today. □

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