

ISO 45001 and the evolution of occupational health and safety management systems



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1 Abstract

This IOSH paper highlights the implications and importance of the new ISO 45001 standard in tackling global health and safety failures, outlining the history of occupational health and safety management systems (OHSMSs); the role of international standards; the ISO standards process; progress on ISO 45001; and the aims for OSH management worldwide.

IOSH is the Chartered body for health and safety professionals, with around 47,000 members in over 130 countries, and was an ISO Category A Liaison member of ISO PC 283, the ISO committee developing the OHSMS standard, ISO 45001.

In order to assess the evolution of the systems approach to health and safety management, this paper refers to relevant OHSMS guides and standards and IOSH's involvement in a Delphi study into health and safety performance, used to help inform work to refresh the UK's 'Successful health and safety management' (HSG65). It also draws on the Institution's ISO Category A Liaison work on ISO 45001.

This method provides useful context and insight into current health and safety management systems thinking, with the Delphi study results helping to reinforce the importance of good leadership, sound business processes and a skilled workforce, operating in an open and trusting environment. It also provides examination of the process for developing ISO 45001, the emphasis on leadership and context, and exploration of its potential for raising health and safety standards worldwide.

The author concludes by discussing the content of ISO 45001, its similarities and differences to OHSAS 18001, and the implications for organisations adopting the new standard and for health and safety professionals assisting them. Challenges and opportunities for standardisation and the future integration of management system standards through the use of mechanisms such as the 'high-level structure', supported by topic-specific details, are also examined, together with the hoped-for outcomes.

Key words: management systems; international standards; ISO 45001

2 History of the systems approach

The changing world of work has meant there is increasing growth in globalisation, industrialisation, technological advances, work intensification, the service and knowledge sectors and complex supply chains. The make-up of the workforce has also changed, with increases in the older age-group, female, informal and migrant workers; and a greater variety in working arrangements and employment types.^{1,2} All of these changes have health and safety implications and need to be managed properly.

In terms of effective risk management, it is generally accepted that there are benefits from adopting a formal systems approach to managing health and safety at work, based on the 'plan, do, check, act' (PDCA) management model, which encompasses a continual improvement goal. Total Quality Management, an integrated approach to business management, grew in the 1990s, driven by customer service values and continual improvement, rather than solely by loss prevention. This approach was promoted by the UK regulator's 'Successful health and safety management', HSG65.^{3,4} The management system model for health and safety is now recognised by the International Labour Organization (ILO) and standards bodies worldwide. In 2011, the ILO stated that "Implementation of OSH management systems is critical in helping to reduce occupational accidents, diseases and deaths." The ILO also noted that "The management systems approach to occupational safety and health has become popular and has been introduced in many workplaces during the last decade."⁵

A number of OHSMSs and guidelines have developed over the last 25 years, some certifiable and some sector-specific. Essentially, these require organisations to identify the issues to be addressed; set the direction and standards; plan what needs to be done and organise who will undertake it; equip them to do so; undertake the action; check completion and efficacy; and learn the lessons from this exercise to improve continually.⁶ Compliance with certifiable standards is demonstrated through audit by a certifying body, which should be suitably accredited. In the UK, for example, this would be by the UK Accreditation Service.

In 1996 the British Standards Institute (BSI) created BS 8800, *Guide to occupational health and safety management*, and in 1999 worked with other national standards bodies, certification bodies and specialist consultancies to develop OHSAS 18001, which fulfilled the growing demand for a certifiable standard. In 2001, following a review of over 20 systems worldwide, the ILO produced generic guidelines ILO-OSH 2001,⁷ intended to be non-certifiable and able to be applied at national and organisational level. The earlier

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BS 8800 guide was converted into BS 18004 in 2008 to provide supporting guidance to BS OHSAS 18001. And now, in 2018, a new international and certifiable standard, *Occupational health and safety management systems – Requirements with guidance for use*, is published.⁸

Looking briefly at the legal context, in the UK, the Health and Safety at Work etc. Act 1974, section 2 (employer general duties) outlined the need for a health and safety policy and statement covering the arrangements for implementing this. This was followed by the European Framework Directive in 1989 (89/391/EEC),⁹ Section II, which places duties on employers to take measures to protect workers. The UK transposed this via the Management of Health and Safety at Work Regulations 1992, which contained regulation 5 on health and safety arrangements and had an accompanying approved code of practice, which covered planning, organisation, control and review.

In this paper, the focus is on an early example of regulator guidance for managing health and safety, the UK's *Successful health and safety management* guide HSG65, first published in 1991. It was intended as a practical guide for directors, managers, health and safety professionals and employee representatives. It covered: policy; organising; planning and implementing; measuring performance; audit and reviewing performance (POPMAR). It also required a 'feedback loop' to ensure continual improvement. In recent years, the UK's Health and Safety Executive (HSE) has been engaged in simplifying its guidance for duty holders. In order to help make HSG65 more accessible and user-friendly, a Delphi Study was used to identify and confirm the key elements deemed essential to effective occupational health and safety management for inclusion in a simplified, revised version.

3 Delphi study into management behaviours

The HSE-commissioned 'Expert Delphi' study in 2007, *How management behaviours associated with successful health and safety performance relate to those associated with success in other domains* (RR744),¹⁰ sought to gather and document informed views from key, expert, stakeholders to inform HSE's approach. The study posed four main questions, as follows:

- (a) What are the management factors and characteristics (including activities, behaviours and skills) that are associated with successful and unsuccessful business management?
- (b) How do the factors identified in (a) read across to affect success or failure in managing health and safety?
- (c) What, if any, other management factors and characteristics are uniquely associated with success or failure in managing health and safety (i.e. are not associated with business management in general)? and
- (d) How important or effective are each of the factors identified in (a)–(c)?

'Delphi' is a method for structuring a group communication process, allowing a group of individuals, as a whole, to deal with a complex problem. To achieve this, there is some feedback on individual contributions, assessment of the group position and opportunity to revise views, together with a degree of anonymity.¹¹ Panel members (around 100) for this particular HSE Delphi study were selected from four stakeholder groups: academic, business, regulators and health and safety professionals, including from IOSH. The researchers explained that such a study produces a synthesis of views, rather than scientific evidence, and advised appropriate caution in interpreting the findings. They also recommended further research where there was high variation in responses, stressing that minority views could also be correct.

The study used two questionnaire rounds seeking information about the impact of various factors and characteristics on successful business performance and health and safety outcomes. The set of impact factors in the questionnaire were developed from two workshops, supplemented by an additional literature review and further meetings. A list of 131 factors and characteristics was subsequently reduced to a set of 52 'impact' factors and seven statements relating to 'health and safety vs business' and to the type and size of organisations. The 52 selected factors (leadership and management; business processes and procedures; beliefs, values, attitudes and behaviours (culture); workforce skills; organisational characteristics; and external factors or pressures) were incorporated into the questionnaire. This requested an assessment for each factor covering both the direction (positive or negative) and the strength (weak to very strong) of its impact on health and safety performance and, separately, on business performance. Panel members were also asked to indicate their degree of agreement or disagreement with each of the seven statements and to add specific and general comments.

Analysis by broad grouping of factors indicated that the 'business processes and procedures' grouping had a high overall (averaged over the factors in the grouping) strength of impact on both health and safety and business performance. In addition, on average, the factors in the 'leadership' grouping were judged to have a high impact on health and safety performance. The factors in the 'external factors/pressures' grouping were, on average, assessed as having the lowest strength of impact on both health and safety and business performance.

The findings, in the main, reinforced the widely believed principles, as follows:

- health and safety should be treated as an integral part of productivity, competitiveness and profitability
- key factors for success are: good leadership, sound business processes, a trained and skilled workforce, operating in an open and trusting environment
- cultural factors have the greatest impact, both positive and negative
- the internal environment is more influential than the external

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Bearing these findings and their limitations in mind, together with previous reviews of its approach, HSE then commenced work and further stakeholder consultation to refresh and reinvent HSG65. The aim was to shift to a more people- and outcome- (rather than process-) based approach and align more closely with the PDCA model. The new guide sought to provide greater emphasis on leadership (doing the right things) and management (doing things right) and culture, as well as risk profiling.¹² The 'refreshed' HSG65 was launched in July 2013 as a web-based tool and can be viewed at www.hse.gov.uk/managing.¹³

The Delphi study and the subsequent public consultations were useful for helping to confirm the direction of the new HSG65. Coincidentally, they also support the increased emphasis on leadership and context and greater focus on risk management contained in the new standard ISO 45001 when compared to the previous standard OHSAS 18001.

4 Role of international standards

The development and adoption of international standards originated as one way of overcoming technical barriers in international commerce. Increasing globalisation and global risks, such as security, health and environment, coupled with new markets, actors and economies,^{1,2} mean that international standards are arguably more important today than ever.

There are currently three main international standards bodies, which develop international standards for the world: the International Electrotechnical Commission (IEC), the International Telecommunication Union (ITU) and the International Organization for Standardization (ISO). Where appropriate, they cooperate to ensure that international standards fit well together and have joint committees to combine relevant expert knowledge in related areas.

International standards are intended as a means of assuring consistency, inter-operability, conformity, safety and quality. The ISO website makes the following explanatory statement: "International Standards make things work. They give world-class specifications for products, services and systems, to ensure quality, safety and efficiency. They are instrumental in facilitating international trade." ISO considers the development of new standards when a need is expressed for a subject with global relevance.

In its guide for delegates and experts,¹⁴ ISO outlines the background and application of international standards. It highlights that the World Trade Organization (WTO) has expanded its scope and membership and there are growing numbers of free trade agreements – while at the same time there is increased stakeholder demand for corporate transparency and accountability. Companies keen to demonstrate social responsibility and sustainability and keen to protect their people, their reputation and their 'license to operate', are monitoring what is referred to as their 'triple bottom lines' (social, economic and environmental performance). In terms of non-financial reporting, the adequacy of corporate governance is also a key indicator.

The application of global standards can assist both the organisation concerned and its stakeholders, because such standards set an agreed level of performance and can help level the playing field. Corporations and governments are recognising the benefits of economic and environmental standards, and this is also true of standards covering social performance, such as health and safety.

The guide emphasises that public interest in the ethical behaviour of producers and retailers has also led to increased interest from governments, media and investors and the development of ISO guidelines for social responsibility (ISO 26000). This has a section specifically covering occupational safety and health management. The WTO recognises the importance of international standards and conformity assessment systems to facilitating international trade. Its Technical Barriers to Trade (TBT) committee has six principles that international standardising bodies, such as the ISO, should demonstrate:

- transparency
- openness
- impartiality and consensus
- effectiveness and relevance
- coherence
- development.

It explains that ISO and its two sector-based international partners (IEC and ITU) have together formed the World Standards Cooperation (WSC). ISO also collaborates with the United Nations organisations and its specialised agencies, such as: CODEX, IMO, UN Economic Commission for Europe, WHO, ILO and WTO-T (on world tourism). ISO's technical committees have liaison relations with more than 600 international organisations, in addition to working with its national members. ISO is an international member of the World Economic Forum and has increased its collaboration with NGOs representing societal and professional interests. ISO has recognised seven regional standards organisations representing:

- Africa
- the Arab countries
- Commonwealth of independent states
- Europe
- South-East Asia
- North and South America
- Pacific area.

These regional bodies are committed to adopt ISO standards wherever possible without change as their national standards and only develop divergent ones if an ISO one is not available.¹⁴

In terms of a certifiable international standard for occupational health and safety management, the last decade has seen OHSAS 18001 (first published in 1999 to fill a gap in international standards) continue to gain popularity with around 90,000 certifications awarded in over 127 countries.¹⁵ And then in 2013, ISO agreed that the time was right to develop an ISO OHSMS standard, the new ISO 45001. ISO is keen to achieve appropriate consistency across

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its management system standards, such as ISO 9001 (quality) and ISO 14001 (environment). So, to help those drafting its standards to achieve this, it produced a guide, known as 'Annex SL' (as a replacement to ISO Guide 83), which is an annex of the ISO Directives. Annex SL includes requirements for management system standards (MSS) to use high-level structure, identical core text and common terms and definitions.

5 ISO process for developing standards

International standards are developed on a consensus basis, via a six-step process: proposal; preparatory; committee; enquiry; approval; and publication. Once the need for a standard is established (proposal), a committee to oversee its development is formed (for ISO 45001 this is ISO Project Committee 283). The committee establishes a Work Group (WG), made up of experts from member organisations (usually national standards bodies) and liaison members, which are organisations with specific interests and technical expertise (preparatory).

The procedure for producing a new standard is that the WG develops the first draft known as the Committee Draft CD1 (committee) and ballots it to all WG members to gain consensus that it is sufficiently developed to move to the next stage. If consensus is achieved (two-thirds majority approve and less than a quarter disapprove), then the standard can become a Draft International Standard (DIS) and can be made available for consultation to the wider public (enquiry). In order to achieve consensus, the WG meets to resolve any comments made at the previous draft stage (these can amount to many thousands) and need to be agreed by the majority of the WG and the parent committee (in the case of ISO 45001, this was ISO PC 283).

The process of consulting on the draft standard and resolving comments can happen several times on the journey to a suitable consensus, so it can take a considerable amount of time. The usual ISO standard development timescale is three years, which gives, which gives adequate time to reach consensus and achieve a standard that has international support.

Once any issues with the DIS are resolved, the standard can move to the Final Draft International Standard (FDIS) stage and is circulated to all ISO member bodies (this stage is now optional and can be missed if the Committee agrees). It will be approved as an international standard if two thirds approve and less than a quarter disapprove (approval). Once approved, the final text is sent for publication (publication). Thereafter, standards need to undergo regular updating to ensure their ongoing validity.¹⁴

To help ensure consistency across management systems standards (MSSs), ISO has now produced Annex SL. The audience for this is primarily ISO technical committees that develop management standards. However, its impact will be felt by all future users of MSS, because it requires that all new ones contain the following:

- high-level structure
- identical core text
- common terms and core definitions.

Although this means that there will be some duplication, it will also mean all such standards have the same look and feel, enabling integration where organisations have multiple certifications. In addition, there will be less confusion and inconsistency, because common terms will all have the same definition and there will be common requirements across all the management system standards, for example, to establish, implement, maintain and continually improve the management system.

In terms of what changes can and cannot be made by those drafting standards, the high-level structure (eg major clause numbers and titles) cannot be changed. However, sub-clauses can be added, together with discipline-specific text, for example:

- new bullets
- discipline-specific explanatory text, such as notes or examples
- discipline-specific new paragraphs to sub-clauses
- adding text that enhances (but does not modify) the existing requirements

Although the common terms and core definitions cannot be changed, terms and definitions may be added as needed and notes may be added or modified to serve the purpose of each standard.

To facilitate the adoption of the core text, the device 'XXX' is used throughout Annex SL where appropriate wording needs to be inserted. For example, in ISO 22000, the 'XXX' needs to be replaced by "food safety" and in ISO 14001, the 'XXX' needs to be replaced by "environmental". In addition, the term 'discipline' is used to describe the nature of the management system eg quality, environmental, service management, food safety, business continuity, information security or energy.¹⁶

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6 The development of ISO 45001

The impetus for the development of ISO 45001 came from the British Standards Institute (BSI), which proposed to ISO in 2013 that OHSAS 18001 be considered as the basis for an international standard. ISO agreed and established a committee to oversee its development. As the proposers, BSI took on the role of Secretariat to the new committee (ISO PC 283). The first meeting of ISO PC 283 took place in London in October 2013, where key decisions were made: for example, that the standard would contain the requirements and include interpretative guidance as an annex. The WG was established and further divided into Task Groups (TGs) to separate the workload into manageable sections, so that each TG could focus on one or more clauses of the draft standard.

In total, there were 70 countries involved, 16 'observing' countries and 21 Liaison members, including IOSH.¹⁷ During ISO 45001's development, nine international meetings were held: London, October 2013; Casablanca, April 2014; Trinidad & Tobago, January 2015; Dublin, July 2015; Geneva, September 2015; Toronto, June 2016; Klaipeda, November 2016; Vienna, February 2017; and Malacca, September 2017. There were two public consultations and a ballot at the Draft International stage and a final ballot at the Final Draft International stage. ISO 45001 was published on 12 March 2018.

In terms of comparison between the draft ISO 45001 and OHSAS 18001, similarities include: a risk-based approach; using the 'plan, do, check, act' model; setting policies and objectives; and conducting internal audits and review. There are several differences, including:

- there are now ten clauses; whereas OHSAS 18001 had four clauses
- context of organisation – such as its supply chain, local community and cultural, social, political, economic and governance environments
- leadership and worker participation – top management need to take an active role eg strategic planning, leading organisational culture and ensuring worker involvement
- documented information – includes electronic and processed information eg use of smartphones or tablets
- more focus on continual improvement and hierarchy of control
- more focus on risk management and ongoing assessment of risk and opportunities
- more focus on the need to demonstrate and understand compliance status
- sub-clauses on outsourcing, procurement and contractors
- more on use of performance indicators.

The content includes: scope; normative references; terms and definitions; context of the organisation; leadership and worker participation; planning; support; operation; performance evaluation; and improvement. There is also an annex containing informative guidance on its use.

7 Aims and implications for OSH management worldwide

The consequences of failure to manage occupational safety and health risks properly are stark. It is estimated by the ILO that each year 2.78 million people are killed as a result of work-related accidents and diseases and there are around 374 million non-fatal workplace accidents. These failures are estimated to cost approximately 4 per cent of the world's GDP per annum.¹⁸

In the UK, in Europe and around the world, the challenges of a changing world of work need to be addressed adequately and the opportunities for improvement seized. In addition to dealing with the familiar health and safety hazards, this will require additional competence to address those associated with new technology (eg 'nano', 'bio' and 'green'); changing working arrangements (eg migration for work, work intensification and remote working); different employment types (eg outsourced, temporary and within informal economies); demographics (eg ageing population and lifestyle diseases); and global emergencies (eg pandemics).¹⁹

The stated purpose of ISO 45001 is to provide a management system framework "to enable an organization to provide safe and healthy workplaces, prevent work-related injury and ill health, and continually improve its OH&S performance."⁸ The author believes that the introduction of this new international standard on OHSMS will help ensure that health and safety receives the strategic attention, leadership and resources that it deserves worldwide. The aim should be to reduce health and safety failures and support OSH beyond compliance across organisations and their supply chains worldwide; improve leadership and delivery of the social element of CSR and sustainability; and foster the development of improved audit and performance reporting standards. Stakeholder demands for transparency mean that reporting needs to be meaningful and comparable and to include both 'leading' and 'lagging' indicators.

The ILO believes that "A comprehensive approach to risk management can only be achieved through the implementation of national, as well as enterprise-based OSH management systems."² Currently, both the ILO's OHSMS guidelines and OHSAS 18001 are widely used throughout the world across many supply chains and the need to manage risk, including to reputation, means that organisations are increasingly requiring their suppliers to have an OHSMS. The author believes that the introduction of ISO 45001 seems likely to both maintain and increase this impetus for assurance. Given the growth in stakeholder interest in corporate social responsibility (CSR) and sustainability and that health and safety at work is covered in the core subjects of the ISO standard on social responsibility, ISO 45001 and ISO 26000 will be complementary elements of this important agenda, which is gaining increased government, NGO and investor interest.²⁰

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The increase in alignment between the various disciplines that apply MSSs provides an opportunity for organisations applying such standards (eg ISO 9001, ISO 14001 and ISO 45001) to integrate them, if they so wish. This may also support a move towards more integrated performance reporting on economic, social, environmental and governance issues.²¹ The aim here is for significant health and safety issues to be part of strategic decision-making across an organisation and recognised as material to its licence to operate and a sustainable future. Such thinking can help drive health and safety improvements throughout organisations and their supply chains and foster a willingness to take a more socially responsible and longer-term view. This is important because exposures to health hazards at work can lead to long-latency conditions, including fatal diseases.²²

The differences between OHSAS 18001 and ISO 45001 could mean there are implications for organisations seeking certification and their advisers; and also for auditors who are auditing to the new standard. These include the requirement for demonstration of leadership and adequate consideration of an organisation's context. For example, auditors may

need new skills, both interpersonal, in dealing with top management and technical, in dealing with an increased variety of information sources and researching organisational context. OSH practitioners may need to develop or refine their skills in helping managers to assess the internal and external factors affecting context (eg horizon-scanning); ensuring effective engagement with relevant stakeholders and interested parties; and preparing CEOs and other senior managers to be audited to this new standard. The introduction of ISO 45001 also provides the opportunity for closer working relations between OSH practitioners and Boards or CEOs and for organisations to show more visible and socially responsible leadership.

IOSH, as a Category A Liaison member, has been involved in the development of ISO 45001 and welcomes emphasis on leadership, worker participation and context. The Institution believes that the key to effective health and safety management and positive culture is leadership from the top, combined with worker involvement and access to competent health and safety advice.²³

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