

## Occupational Health and Safety Management Systems- Are they beneficial?

### Part 2

#### Safety risks, technical health risks or even organizational ones?

Except for some safety-only management systems, all MS claim to manage both health and safety. All OHS research also indicates that the health risks at work far outweigh the risks of accidents. Ill-health which is mainly caused by conditions at work – such as cancers, cardiovascular diseases, and depression and suicide – results in many more lost work days and fatalities than Occupational Health & Safety Management Systems 20 acute traumas or accidents. The health risks are also dominating in blue-collar work, not only in white-collar offices. However, occupational diseases are difficult to register, their etiology is a mix between conditions at and outside work, and exposures at work are more difficult to measure or assess than the safety risks. All of this makes for gross underestimations of the health risks, even when an MS tries to look for them.

Like the other aspects of an MS, its OHS scope is also influenced by the motives behind the decision to implement it. The OHS goals may be measured and/or evaluated as:

1. Minimize numbers of workers reporting accidents, LTI, absences, or lodging compensation claims etc.
2. Better safety, i.e. to reduce the risk of accidents, often large-scale disasters. If this is the goal – and not only reportable numbers – the MS also has to include, for example, a reduction of risks for traffic accidents by employees driving on duty.
3. Reduce traditional occupational health risks (and also improve safety), by reducing exposures to factors such as noise, chemicals, radiation, vibration.
4. A good overall work environment, by also reducing organizational health and safety risks and psychosocial health effects.

However, in practice MS seem to look more for accident risks than for long term health risks, which may only show up much later in any statistics, if at all. The examples provided by the websites and other descriptions – for example of OHSAS 18001, or the UK standard BS 8800 – deal much more with accidents than with health risks. They rarely, if at all, comment on the complexity of assessing and handling risks for work-related ill-health. The attention to the broad OHS perspective is even less than to the physical/chemical health risks. At least within the EU, organizational health risks and psychosocial health effects are explicitly included in the broad working environment of the Framework Directive. This is based on more and more evidence that links such organizational issues as stress at work, shift work, conflicts at work, and excessively long working hours to things like cardiovascular diseases. Organizational factors

are also important causes of accidents and musculoskeletal problems. For example, if you slip on the stairs, the issue is not only whether the stairs are non-slippery and well illuminated. Equally important is why the injured worker had to climb the stairs at all, and often why s/he had to do so very quickly? Likewise, questions need to be asked about why the organization of work exposes workers to noise, to repetitive motions or whatever technical risk may cause injury or disease.

A general organizational perspective on the prevention of occupational diseases (and accidents) is lacking in the described MS practices. Similarly, the psychosocial health effects, with the occasional exception of stress, are not mentioned in them. For example, threats and violence pose a serious OHS problem for very many workers. And so do problems of shift work (which has long been demonstrated to be bad for your health), of long working hours and exhaustion, and of conflicts at work. Yet these health risks are not raised in the voluntary MS, despite their official claim to include the management of health at work.

### **Safe person or safe place – downstream or upstream prevention?**

Although one should not deduce too much from why an MS is introduced, there does seem to be a clear relation between the management motives and goals, and the means chosen to achieve these. If the purpose is to minimize workers' behaviour in reporting injuries, it seems appropriate to try to manage that behaviour. On the other hand, if the MS aims to minimize the OHS risks for accidents and ill-health, it has to manage these risks. There is thus a link between managers' definition of the problem and the prevention they prefer. Will their MS go up the prevention hierarchy to eliminate risks by design? Or does it go downstream, and choose behavioural safety (BS) as its main method to reduce the number of reported injuries?

This choice also reflects the basic ambivalence in the MS. On the one hand, compliance with national regulations in their specifications should make them (with the exception of BS) primarily aim for upstream prevention by organizational and technical design. And in on-going operations, they should try to eliminate risks, for example through ventilation, noise control, rearranged work organization and technical safety. Yet the examples and advice on the various MS very often present cases of behavioural safety, e.g. how workers are issued PPE, without mentioning technical methods to reduce air pollution or noise. However, the interpretation of the MS varies with national OHS policies and cultures. British examples of companies that have implemented and benefited from OHSAS 18001 are about reducing reported accident rates more than upstream prevention or health risks (070923: [www.bsi-emea.com/OHS/CaseStudies/index.xalter](http://www.bsi-emea.com/OHS/CaseStudies/index.xalter)). In a Danish setting, OHSAS 18001 is instead presented as much more of an instrument to implement the preventive principles (Industrins Branchearbejdsmiljorad, 2005).

Behavioural safety is thus very common within MS. This is perhaps especially the case in Anglo-Saxon countries, but BS is also spreading worldwide (e.g. Krause, 1997). On the one hand, it seems to be much applied within complex formal MS, which by their specifications should focus on upstream prevention instead. On the other, managing BS is often being labelled an MS. DuPont thus has a large international consultancy business on BS, mainly STOP. But there are many other varieties of BS, including a widespread general management practice of

managing safety by focusing on worker behaviour. This was described by Dotson (*ibid*, see p. 18) and in the comparative Australian study on the effectiveness of different MS, by Gallagher et al. (2001). The basis for BS is an old management belief that nearly all accidents are caused by incorrect work procedures, either in the design of these or in how workers follow them. This is why many managers in Australia (and elsewhere) prefer to manage "safe persons" and give less attention to creating "safe places" (Gallagher et al., *ibid*).

However, there are several problems with the BS strategy. For example, DuPont found that in "96% of the cases at-risk behaviours" [of workers, not managers] "- not unsafe conditions – cause or contribute to most injuries". However, it is no surprise that human behaviour contributes to accidents. These occur as a last effect of a long causal chain. Humans make mistakes, but the work environment determines if this will result in an accident. If a worker pulls a piece out of a machine 10,000 times a day, s/he may just once act too quickly. With proper safeguards, no accident will occur but without them, s/he may lose a finger or more. The DuPont figures therefore provide neither information nor reliable evidence that BS works.

The BS strategy has also been criticized in many other respects (see e.g. National COSH, 2006; USW, 2005; Doyle, 1991; and [www.dupontsafetyrevealed.org](http://www.dupontsafetyrevealed.org)):

- It does not comply with the legal regulations of preventing risks before you order workers to behave safely in risky situations, i.e. the prescribed prevention hierarchy.
- The figures behind BS are flawed. The famous Heinrich (1931) statistics – that 85% of the injuries are caused by workers' unsafe behaviour were compiled from reports by supervisors. These had little competence in analyzing root causes of accidents, but much interest in blaming their companies.
- The claim that behaviour is the main cause of accidents – by e.g. Heinrich, DuPont and Dotson, and other corporations – has not been verified by independent critical studies.
- Many employers which use BS, DuPont included, suppress workers' reporting of injuries and in any case do not always register reports filed by workers. Zoller (2003) describes these obstructing mechanisms in depth.
- BS usually neglects the more serious health risks. Dotson described (see p. 18) an MS which exposed nearby workers to dangerous noise. Likewise, DuPont is noted as one of the worst chemical polluters in the US, of the environment and of its workers.
- Downstream behaviour control is considered the least effective means to achieve the intended results in quality management. Human beings are good at many things, but not at always doing exactly the same thing. For example, when Toyota want quality in their cars, they don't rely mainly on workers to create tolerance down to a hundredth of a millimetre etc. Quality must instead be designed into the construction and the manufacturing of the car.
- The comparative study by Gallagher et al. (*ibid*) – and other research on how to manage OHS – also supports the prevention hierarchy. Sites with a focus on "safe person" were clearly less safe than those that worked for a "safe place" (see also Hopkins, 2005 on behavioural safety).
- Two fatal accidents in corporations with heavy emphasis on BS are symptomatic. The public inquiries into the explosions at Esso-Longford, in Australia in 1998, and at DuPont in Brazil in 2005 revealed the same pattern. Although the companies tried to blame the workers, the

accidents were mainly caused by systematic defects in production safety. Both companies had also tried to hide the evidence of this (Hopkins, 2000; [www. dupontsafetyrevealed.org](http://www.dupontsafetyrevealed.org)).

### **Consultation as top-down manipulation or as a way of improving the MS?**

OHS management is by law – and by function – mainly the duty of employers and their managers, since they create the conditions of work that produce the possible OHS risks. The employer's responsibility and managerial prerogative have – in combination with authoritarian management traditions, and with antagonistic industrial relations – often been translated into authoritarian forms of MS. Managers, with advice from their own experts, define what to do in OHS and how to do it. Despite the fact that worker consultation is often emphasized in the MS specifications, its practice seems more to be a method to persuade workers to obey management orders, and less a genuine dialogue on ends and means in the MS.

However, the customers of MS are the workers . It is their health and safety that is at stake. The effects of worker influence on OHS are difficult to demonstrate conclusively (as are most interventions/actions in the management of OHS). Nevertheless, all available research indicates that extensive and strong worker participation is essential for an efficient and effective MS. In their overview and analysis of this research, Walters et al. (2005) found that:

- worker participation is good for solving OHS problems; — if this participation is also supported by elected safety representatives (or similar, such as members of joint committees), the OHS results improve further; and
- if workers and safety reps are helped to formulate and present their own views on OHS through training and other support from a trade union, an MS achieves the best OHS effects.

Consultation/participation is therefore not a choice between talking with workers (direct participation) or with their elected delegates (representative participation). A good MS needs to define the problems, to develop the most cost-efficient solutions and to implement these well in practice (Walters & Frick, 2000). However, like "safe person" (behavioural safety) versus "safe place" (upstream prevention), the issue of worker participation is not one of what is known to be the most effective to improve OHS. There is thus overwhelming research – and regulations – to support the idea that the management of OHS needs both to prioritise its methods according to the prevention hierarchy, and to have a strong input from workers and their representatives.

The fact that in practice, MS focus more on behaviour and a top-down consultation to convince workers of management decisions, is instead due to factors outside the MS. Consultation is heavily influenced by national industrial relations, and how managers accept a genuine dialogue with workers on anything (see Quinlan, 1993), which, again, shows up in how the consultation in MS is presented in various countries. Likewise, there seems to be a strong relation between managers' motives and purpose with an MS, and their consultation with workers. If managers want to improve the real OHS – for any of the motives discussed above – they need a dialogue with those who know and experience the conditions at work.

But if the main purpose is to reduce workers' behaviour in reporting injuries, and "prevent" accidents via behavioural safety, there is not much sense in discussing this with the workers. On the contrary, BS may instead be a threat to worker and union influence, on OHS and in general. Employers have long used safety management and its prescribed work procedures to control workers as much as their safety (Taksa, 1993). This power aspect is important to take into account in the evaluation of an MS. In an extensive interaction between managers and workers, management may use its superior information and its control over the forms of the interaction to increase its mental and cultural control of the workforce. Such a manipulative model of "participation" may also be used to get rid of the unions (Frick, 2004b; Grenier, 1988).

### **Resources, audits, learning and continuous improvements**

OHS management systems are thus enmeshed in, and dependent upon, other company policies and management practices. An MS with the ambition to reduce both safety and health risks is therefore challenging. To approach this goal, a voluntary MS has to go beyond what is required in most OHSM regulations. For example, the Framework Directive simply commands employers to implement an OHS management that is capable of complying with all of its ambitious requirements (see p. 11). But to even strive for the utopian goal of zero risks at work requires quite thorough organizational development of the general management of most firms. Also in this respect, the management of OHS quality is no different from any other (equally challenging) quality management (Frick, 2004a).

To be effective, an MS thus not only needs to be oriented towards broad OHS goals, with upstream prevention and a genuine dialogue with workers. It also needs enough resources. Like any other ambitious goal, an improved OHS does not come for free. Funding to pay for OHS improvements – technical and organizational changes, and not only behavioural procedures – is the most noted resourcing issue. There are many conflicts around how much various improvements may cost. Yet the time and competence of both managers and workers involved are equally important. You cannot achieve good quality management of OHS without a considerable effort, and without knowing what you are doing. And as the MS is about the OHS of the workers, these also have to be given enough time and training to be thoroughly and constructively involved (as discussed above).

This need for competence is sometimes mentioned in the official regulation and information on OHSM. It is one of the points in the Framework Directive, but neither this nor the need to allocate enough management time is much discussed when it comes to mandatory OHSM (Frick, 2006). The Norwegian and Swedish (AFS, 2001) OHSM regulations are exceptions. They specify that the employers have to allocate enough persons, with enough time, competence, funding and authority to deal with all OHS risks. However, the literature on voluntary MS in general has a more realistic perspective on the difficulties involved in managing OHS. Dalrymple et al. (ibid) emphasize that in order to be an MS, OHS management has to include a secondary learning loop of auditing, learning and continuous improvement of MS. Again, this is the same as in other quality management systems (such as ISO 9000).

We discussed performance measurement of the MS above. However, measuring the OHS outcomes of the MS is also the basis for evaluating its effectiveness as a management system.

Improved ventilation is not the same as the quality cycle to act against air pollution. Yet this process is only good insofar as it results in such improvements. An evaluation – be it external auditing or internal review – which only looks at the MS process, without relating this to its results, may therefore be more misleading than helpful in improving the MS to reduce OHS risks. And as with measuring the OHS effects, a systematic and thorough input of the workers is essential for this feedback and continuous improvement of the MS itself.

Nearly all MS recognize the need for auditing and improvement in principle. Yet in this respect, too, their practical description is much more limited. The ILO guidelines state that workers and their representatives shall be involved in all aspects of the MS, including the selection of and instructions to those who audit the MS. OHSAS 18001, on the other hand, says that such auditors shall be selected for competence and objectivity, as if this would be much more guaranteed when management decides this alone than when workers also have a say. Equally serious is that the effectiveness is very often evaluated against the narrow – and manipulable – numbers of workers' behaviours in reporting injuries. This also goes for MS by OHS authorities, with expressed goals of reducing health risks at work (Frick, 2004b; OSHA undated).

### **A summary of the risks of voluntary OHS management systems**

The reality is much more complex than the simple posit that mandatory OHSM is good and voluntary MS bad. The negative picture above of voluntary management systems is an artificial worst-case scenario, assembled from the problematic aspects of various OHSM systems. It is important both as a basis for further discussion and as a warning of possible problems in actual voluntary systems. However, there is also much good in voluntary systems. They usually emphasize that top management has to commit itself to OHS and to monitor both the behaviour and the results of line management and workers in improving OHS. And the complex specifications of how to organize OHS management – for example in various MS standards – are necessary in large or high-risk organizations. And on their side, mandatory regulations may be too short and general to provide effective guidance in many practical instances. The implementation of the theoretically good mandatory OHSM is also in practice more or less deficient. Law on the books is seldom fully applied as law in practice. In both mandatory OHSM and voluntary MS, the local interpretation and implementation is therefore more important than what formal OHSM or OHSM-S one starts from.

The need to evaluate an MS mainly on its results does not mean that there may not be several aspects of these which tend to deviate from the preventive principles of instruments such as the EU's Framework Directive. Except for behavioural safety, this is less the case in the specifications of the MS, but more in how their practices are explained and exemplified. We can summarize these differences between the MS practices and the requirements of regulated OHSM (but which in practice are also much less well implemented), as follows.

1. Application: voluntary MS are mainly marketed and promoted to large organizations, i.e. only to a small fraction of all employers which have to comply with OHSM regulations.
2. Specification: nearly all MS consist of a complex structure of a large number of requirements, often modelled on ISO 9000. OHSM regulations instead have to be understood and possible to comply with also by small employers. They are therefore usually

limited to a smaller number of principles for systematic OHS management (e.g. AFS, 2001). There are simplified forms of MS, for use also in smaller organizations. Yet when Ramirez et al. (ibid), for example, look at the MS of small firms in Central America, they use the term in a quite different and much simpler form than for example in OHSAS 18001.

3. Certification: a formal certificate or other document of recognition and approval by an external auditor is a primary aim for nearly all MS. But legal compliance with OHSM regulations can never be assured in advance. It can only be tested through labour inspections and ultimately decided in court.
4. Goals: MS may be certified if they pass an audit as having correct procedures. The goal of mandatory OHSM is instead to eliminate or at least minimize OHS risks. Their procedures can therefore never be evaluated in themselves. These are only good insofar as they improve OHS.
5. OHS scope: most voluntary MS require compliance with national regulations, which nearly everywhere define OHS fairly broadly to at least also include factors such as chemical and ergonomic risks. At least within the EU, this also includes organizational risks and psychosocial health effects. However, the explanations and examples of how voluntary MS should be implemented tend to narrow their scope into a main focus of safety against accidents.
6. Performance measurements: MS are very often evaluated on accident rates, lost-time-injury reports and/or workers' compensation cases – often relative to the rates of others in the same industry. What their OHS prevention actually is measured against is thus workers' behaviour in registering injuries, claims and/or absences, due mainly or entirely to accidents. Mandatory OHSM can only be measured and evaluated against its stated goals, against the level of exposure to the broad spectrum of possible health and safety risks at work.
7. Prevention strategies: except for behavioural safety, the specification of MS says that they should prioritize upstream prevention through engineering and organizational controls, mainly to eliminate risks by design. Yet they rarely explicitly prescribe the prevention hierarchy of the Framework Directive, e.g. not in OHSAS 18001. And their described practice often amounts to a strong focus on "prevention" by controlling workers "safe" behaviour.
8. Workers' representation and participation: the MS are ambivalent also on this, between their specifications and their described practices. In the latter, participation/consultation is partly a means for management to get OHS information from workers, but there is often an emphasis on top-down communication and motivation, in order to persuade workers to comply with management decisions and measures on OHS. And the MS do not include rights for workers to influence the design and evaluation/ improvements of the MS.
9. Auditing and continuous improvement: voluntary MS go beyond most mandatory OHSM – e.g. the Framework Directive – in this respect. They use quality management principles and recognize that such Occupational Health & Safety Management Systems management will always be imperfect and in need of improvements. However, a major problem is that self-critical auditing and improvements are very often limited to reducing workers' behaviour to reporting and being absent after accidents. There are hardly any references to continuous improvements in reducing exposures to health risks.

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