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Organisational Development and OHS Management in Large Organisations

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Organisational Development and OHS Management in Large Organisations

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1. The aim and content of this paper

How Occupational Health and Safety Management (OHSM) is implemented is important. It is intended to be a linchpin in the existing systems of improving OHS. A more systematic and integrated management of OHS is to make the regulation, advice, and local co-operation work more effectively and efficiently to improve the work environment. OHSM therefore touches most of the major issues in the organisation and regulation of OHS. Several of these, I will only mention briefly, as they are dealt with in more depth in other papers. The purpose of this paper is to give an overview of what implementing OHSM requires of employers and their organisations, and of the obstructions to and supporting factors for such an implementation (see further Frick et al. 2000a). As organisational problems are major stumbling blocks for a successful OHSM, the organisational development needed to overcome these obstacles will be given special attention. But with this broad scope, I should first clarify the meaning of my central concepts:

'Occupational Health and Safety Management' has no generally accepted definition. It is variously specified in a growing number of regulations, standards and marketed OHSM-systems. I will use the simple but principal definition of Frick et al. (2000b: 3) of OHSM as *a limited number of mandated principles for a systematic management of OH&S, applicable to all types of employers including the small ones.* This explicitly contrasts OHSM to the more specified and complex OHSM systems (see 4. below).

The term 'organisations' is used in the broad sense of employers (which are regulated) and their firms (in which the regulations are to implemented), including schools and other public 'firms'. 'Large' organisations means that I will not go much into the special problems of small firms, in OHS in general and to implement OHSM in particular (on this, see Walters, 2001; and the paper to this conference by Walters and Lamm). 'Organisational development' is used in the practical sense of any (major) organisational and management changes, which aim to make the organisation more capable to co-operate to achieve its objectives.

Finally, the OHSM I discuss is the regulated one. This is partly because of my EU background, where OHSM is mandatory since around 1993 (see 2. below). However, the same need for a broad scope – and therefore to develop the organisation and its management – applies to any OHSM which aims to improve health at work, and not only to reduce an indicator such as rate of Lost Time Injuries (LTI) or of worker compensation claims.

The paper consists of two main parts. The first focuses on the aim, content and workplace implementation of the regulated OHSM, divided into:
2. The broad scope of EU's Framework Directive 89/391/EEC ('FD' below), which is the major example of regulated OHSM.
3. The crucial role of work organisation in OHS and for its management.

4. Differences between regulated OHSM and voluntary, marketed OHSM systems, with national standards as intermediates.

5. Some data on the slow implementation of the FD, especially its requirement to integrate organisational factors in the assessment and prevention of risks.

I then discuss some factors, against and for the OHSM implementation, divided into:

6. How the structure of the economy, conflicting interests and inherent management limitations obstruct the implementation of regulated OHSM.

7. How an effective OHSM therefore requires a customised development of the general management.

8. The limited capacity and competence of the pro OHS actors to demand and support such an organisational development of OHSM.

9. Some general factors in the economy and some special OHS efforts, which do support the improvements in OHSM.

Finally, I will (in section 10.) discuss what these aims and problems of implementing OHSM implies for public policies, which try to improve OHS through both mandatory regulation and voluntary promotion of OHSM.

Part One - Goals and Implementation of the Regulated OHSM

2.   The ambitious OHSM of EU's Framework Directive

2.1 *All employers have to prevent their workers from any risks at work*
Of all the regulations on OHS management, the EU's Framework Directive (89/391/EEC), from 1989, is by far the most important. It is the ambitious OHS 'constitution' regulating OHS activities at the workplaces for the soon to be 460 million people of the European Union. For large and small employers alike, the FD requires member states to:

- Make all employers responsible "to ensure the safety and health of workers at work", and to provide the necessary organisation and means to do so.
- Mandate that employers – taking into account the nature of their activities – assess and prevent all OHS risks, as the primary means to fulfil this duty.
- Make OHS competence a compulsory base for the employers' risk assessment and other OHS management.
- Mandate a prevention hierarchy, in which the elimination of risks ('safe place') comes first and personal protective equipment and-or instructions ('safe person') comes last.
- Define OHS risks as the broad work environment, which includes e.g. the organisation of work.
- Require employers to adapt the OHS conditions to the varying needs of each individual worker.
- Give workers and-or their representatives the right to participate on all "questions relating to the health and safety at work". However, this and other OHS measures may in no circumstances involve the workers in any costs.

(See Vogel, 1994; Walters, 2002a; and Frick, 2003. The text of the directive can be found at: http://europa.eu.int/smartapi/cgi/sga_doc?smartapi!celexapi!prod!CELEXnumdoc&lg=EN&n umdoc=31989L0391&model=guichett.)

2.2 *Worker participation and OHS competence as a base for the OHSM*

The FD's strong (but intentionally unspecified) right of worker participation has both an outsider and an insider role within the employers' OHSM (see also the paper by Walters; and Walters and Frick, 2000). On the one hand, there is a need to oversee the managers' OHSM, to prevent their risk assessments and preventive measures from becoming an autocratic self-regulation. Labour inspectors and OHS experts (notably the common system of OHS services within the EU) are partly given this monitoring function. However, they are external to the workplaces and too few to really control how employers' manage OHS. Hence there is also a need for internal monitoring – by the workers and their representatives – to promote a genuine prevention within the employers' OHSM. Secondly, workers are regarded not only as objects of the OHSM prevention but also as subjects, as 'customers' of the OHS conditions, in EU's political system. Within the OHSM, their opinions are therefore important to define the risks and the measures to prevent or abate these (see 3 below).

Although, expertise cannot replace worker participation, the FD requires the employers' OHSM to be guided by sufficient competence. As employers are to prevent all risks, some of which may be very complex, this may require a high level of OHS expertise. The preamble of the FD states that "*employers shall be obliged to keep themselves informed of the latest advances in technology and scientific findings ... concerning the inherent dangers in their undertakings*". In practice, the FD's article 7 on OHS competence has been especially open to varying interpretations in its transposition into national legislation (see Vogel, 1994 and 1998; and Hämäläinen et al., 2001). The so-called preventive services remain a contested issue in several EU states. Sweden transposed the article as late as 2001, Denmark still debates how to comply, while France is reluctant to give up its system of company doctors (see the national chapters and the comparison in Walters, 2002a). The UK regulation largely leaves it to employers to decide what competence they may need (Walters, 2002b: 290-93).

2.3 *Prevention beyond regulated minimums and self-audit to this end*
To ensure the safety and health of individuals workers, including sensitive groups, the employer may well have to assess and prevent risks, which go beyond (i.e. are lower/better than) occupational exposure limits (OEL), technical safety standards and other specified regulations. Such material regulations are temporary minimum requirements and no guarantee against harm. Regulations therefore usually aim at the lowest possible level. Employer organisations have also repeatedly given their members the same advice, e.g. when the Swedish Engineering Confederation and the Metal Workers Union jointly set 25 per cent of the OEL as maximum limits to aim for in engineering plants (Verkstadsföreningen, 1978).

The FD refers to the various natures of the work – and thus OHS risks – of the employers. The practical specification and implementation of a preventive OHSM is to be adapted to the needs in each organisation. Likewise, the directive requires only a limited documentation, mainly a written risk assessment. When risks are few and simple to prevent, the practice of complying with the FD is thus to be relatively uncomplicated.

However, the Directive does not include any article on self-auditing. In Norway and Sweden, OHSM regulations (formerly labelled 'internal control') mandate employers to annually review and improve the adequacy of their OHSM. This secondary learning loop was a major criterion of a self-adjusting OHS management 'system' in the ILO survey of such systems (Dalrymple et al., 1998; c.f. also the new ISO 9000-2000, with more emphasis on continuous improvements and less on formal systems). Such a requirement may perhaps be considered implicit in the employers' responsibility to "ensure the safety and health of workers". But

there is thus no article in the FD which recognises that the implementation of OHSM is difficult and should be regularly checked and improved (see also 6. below).

2.4 *The Framework Directive is to improve, not to replace existing systems of OHS activities*
Despite the lack a secondary learning, the FD remains very ambitious. It aims to set a common and high OHS standard all across the EU. For the countries in north Europe – which already had introduced major OHS reforms in the 1970s and early 80s – the FD was not intended to replace their existing national OHS systems. Rather, the emphasis on a pro-active management of OHS was to improve, to fill a gap in these. For example, in Scandinavia, the reforms of the 70s had focused on strengthening regulation, participation and provision of competent advice on the broadened work environment concept. However, during the 1980s these countries all found that the more elaborated local OHS activities they had set up, operated too isolated from a too passive general management (the so called 'side-car' problem; Frick and Wren, 2000; Jensen, 2002 Hence they needed to find a formula, which engaged the top- and line-management in improving the work environment, to make these manage the OHS. The UK – which considered that their post-Robens OHS system already to included such a duty of active management – supported the adoption of the FD but choose a minimalist policy of transposing its requirements into national OHS regulation. In several member states – especially Germany and the south of the EU – the national transposition of the FD's requirements did entail major changes, mainly the replacement of many diverse and limited laws with a comprehensive OHS legislation (see Walters, 2002a, on the motives behind and the national interpretations of the FD).

However, within all of the EU this improved OHS management has to comply with the EU's and the member states' extensive material regulation on e.g. machine safety and occupational exposure limits. The FD's intended OHSM is thus not a deregulation of what OHS conditions are required by the state. Rather it is to be a regulated self-regulation, i.e. a means to improve local detection and abatement of both regulated and unregulated OHS risks. It should also be noted that the absolute requirement to prevent all harm, entails a duty to asses and (if necessary) prevent both non-regulated risks and risks at levels beyond what is regulated (see Frick, 2003).

As the FD's requirements are so ambitious, the practical implementation may well be something different (see 5 below). How much the OHSM of the FD is to be combined with a shift towards fewer, more comprehensive and more performance oriented material regulations is debated and varies between the member states, but all of them have to transpose EU's material directives into their national OHS legislation. It is also argued that the implementation of the OHSM regulations – despite the material OHS requirements – may lead to a de-regulation, as employers in practice are given more freedom to choose their own OHS objectives (see e.g. Nichols and Tucker, 2000 on the consequences in UK and Ontario; and Gaupset, 2000, on Norway, for slightly more optimistic view of the implementation of OHSM).

3. OHSM is needed to define and prevent organisational health risks

3.1 *Huge influence of organisational factors on work-related health*
The need to prevent accidents and diseases caused by the organisation of work is a less noted but important reason behind FD's requirement of local assessment and prevention OHS risks. In its scope, the FD endorses the broad Scandinavian work environment concept and orders employers to *develop a coherent overall prevention policy which covers technology,*

organisation of work, working conditions, social relationships and the influence of factors related to the work environment (article 6:2.g).

Since EU's adoption of the FD in 1989, ever more research demonstrate how the organisation of production and its work determines the OHS conditions as much as machinery, chemicals, localities and other technological factors. Work organisation – including e.g. workload and working time – was during 1970s and 80s shown to affect the risk for heart attacks and other cardio-vascular diseases (Johnson and Johansson, 1991). More recently, the organisation of work is increasingly recognized to influence psychic health, such as 'burn-out' syndromes. Violence, threats and harassment are also being more and more noted as causes of work-related diseases, including in statistics on sickness absenteeism and worker compensation (Lidwall and Skogman Thoursie, 2001).

The organisation of work also strongly affects the traditional OHS risks of somatic OHS diseases. The shaping and allocation of work tasks influence both the exposure to accident risks and the workers' abilities to prevent themselves from accidents. For example, piece-rate enhances accident risks, by paying for cutting corners (e.g. Sundström-Frisk, 1990). Likewise, the frequent 'simple' (yet often serious) falls on floors and down stairs depend not only on the technical conditions but also on how the organisation of work makes it necessary to walk floors and use stairs, and if you hurry and-or are tired when you do.

Similarly, given a certain technology, the organisation of work influences how workers are exposed to noise, harmful substances and other physical health hazards. Work organisation may be even more important for the very prevalent musculoskeletal diseases: For example, monotonous movements can be alleviated by ergonomically improved equipment but the only real prevention is a work organisation which allows for more varying tasks, one which avoids repetitive movements (Neumann, 2001). More recent research, has also demonstrated how stress and other influences of the work organisation, increases muscular tension and thus the risk of diseases at a given physical work load (Lundberg and Melin, 2002). In such cases, the FD's prevention hierarchy mandates that macro-ergonomic elimination of the risk through changes in the work organisation shall be the first option, before micro-ergonomic technical changes to alleviate the risks.

3.2 *The FD requires local OHSM to specify and prevent organisational risks*
The EU court has upheld the Framework Directive's wide definition of the work environment, e.g. in ECJ C-84/94 which ruled against the UK and confirmed that working time is part of the broad OHS concept, and in ECJ C-49/00, which ruled against a Italy's listing of examples as a too narrow definition of OHS risks. However, the organisational risks are hard to specify, to break down in details, which can be measured and the effects of which can be demonstrated in dose-response models. This has lead to on the one hand that organisational aspects of the work environment have been formally included in the national OHS laws within the EU. On the other, the specified regulation of these risks has been limited to some general articles – closer to guidelines then to enforceable statutes – on that the organisation of work shall aim for variation and let the workers influence their work tasks plus a few somewhat more precise regulations of special aspects, such as bullying and how to prevent threats and violence at work.

Given the difficulty to improve the organisational work environment through traditional regulation, a major motive behind the FD was that these risks must mainly be defined and prevented through improved local OHSM. The workplaces can be provided with the general

organisational regulations and information on possible risks. Then it is the duty of each employer to – with this information and, as far as necessary, with expert advice – assess how the organisational aspects of their unique production may affect the health of their workers, and to act appropriately on this assessment. While a systematic OHSM is important for the prevention of technical risks, for the organisational ones it is thus intended to be the most important means of improvement. The OHSM therefore has to be able identify, evaluate, and act against the effects of a very broad range of organisational risks, such as social relations at work, management style, gender segregation, organisation and distribution of work tasks, pay systems, working time schedules, workers' autonomy in performing tasks, violence and threats, and mental and physical work load.

The FD's prevention hierarchy also affects what type of OHSM the employers are to develop and implement. In order to primarily eliminate the risks, the assessment of them has to search upstream in the decision chain behind each risk. There are a number of advanced methods aimed at following such causal chains backwards to prevent large-scale accidents (see e.g. Harms-Ringdahl, 2001). Yet, a number a number of disasters have demonstrated that once they are set up, top-management may well put too much faith in too formalistic OHSM, which starts to live an isolated life of their own (Cullen, 1990; Hopkins, 2000). For the organisational aspects of the work environment, there are a number of surveys which claim to charter how the workers experiences their situation, but the quality of these methods is not guaranteed and they rarely aim to reach the causes of these working conditions (see also the paper by Engman on how to survey and regulate the psychosocial work environment). The scarcity of supporting methods to investigate root causes of organisational risks makes the OHSM even more challenging for the employers.

3.3 *Worker participation to define organisational risks and solutions*
To assess and abate organisational risks, the OHSM must therefore engage top-management. But it must also include genuine worker participation, not only top-down information. The participation in the FD is not 'only' a right for workers to look after their OHS interests against the business interests of the employer. It is also needed to make the employers' OHSM effective and efficient. A thorough assessment has to include workers' experiences of the risks, which cannot fully by identified by management and experts alone (Gustavsen, 1980). This is especially the case for the organisational OHS risks, which have to take into account, e.g. how workers individually perceive their workload and other conditions of the work organisation (see further the paper by Walters on worker participation).

4. OHSM – Higher aims and less formalised than private OHSM-systems

The differences between systematic OHSM and OHSM systems are important, when we discuss the organisational development needed to implement OHSM. The FD is ambitious in scope and aim, yet simple in form. It boils down to the mentioned limited number of principles for a systematic, integrated and participative management of OHS. As they are mandatory, these principles are intended to be applicable to all types of employers, including the small ones. In both its aims and its form, the FD thereby differs markedly from the privately marketed OHSM-systems, such as International Safety Rating System (ISRS), 5 Star and Du Pont (see e.g. Dalrymple et al., 1998, for other such systems). In their complex form, national standards for OHSM systems (such as BSI 1999; AS/NZS 4801 and the ILO guidelines, 2001) are similar the private ones. Yet the content of the standards is closer to the broad scope of the FD. Some of the major differences between the FD's OHSM and OHSM

systems are (see further Frick and Wren, 2000; 25-29; and Gallagher, Underhill and Rimmer, 2001):

• The level of formalisation, including of documentation, is much less in the FD, than in standards for or privately marketed OHSM systems. Dalrymple et al. (ibid) evaluated both forms of OHSM systems against 27 variables, while e.g. the 5 Star contains 60 key elements in five categories. Besides possible market motives – as they are complicated you have to hire consultants – a major reason for this complexity and extensive documentation is to make the OHSM systems open for external auditing and certification. In regulated OHSM, any third party certificates cannot replace the authorities' legal inspections (though certification is feared to undermine these; Frick and Wren, ibid, and Zwetsloot, 2000).

• The scope of OHS in the FD comprises all kind of risks, while the market based OHSM systems focus mainly on technical accident risks, less on technical disease risks and even less on organisational risks and psychological health effects. National standards also emphasize the prevention of occupational diseases but are usually less explicit than the FD about the organisational factors and psychological diseases.

• Worker participation is a prerequisite of the FD's OHSM. The participation in the private systems mainly consists of one-way, top-down communication. Their management dominated OHSM may also be used as an instrument to control and discipline workers (Taksa, 1993), e.g. through extensive and strict rules for all work activities, which are enforced with the help of peer pressure and surveillance (Motell et al., 1995: 56). The participatory rights are stronger in the national standards, but both these and the private OHSM systems vary in this respect according to the industrial relations traditions, in the countries in which they operate. Yet, the top-down dominated formalisation of OHSM systems, impedes genuine inputs from the workers in all of them.

• The goal of the FD's OHSM is to prevent any risks for the health and safety of workers, while most private OHSM systems are evaluated on the lowest possible LTI or other quantifiable indicators. Occupational diseases – which usually have long and complex causal backgrounds – are therefore poorly or not at all covered by such OHSM systems. The goal of minimizing the figures may even induce evasive behaviour, aimed less to prevent accidents than reporting them (such as peer pressure, through group gifts for long periods without a reported LTI, so called 'safety bingo'; see e.g. Gallagher, 1997, on the unreliability of LTI as indicators of safety).

• Prevention as far upstream as possible is mandated by the FD. Private OHSM systems – especially those which focus on LTI and other simple figures – follow a nearly opposite prevention strategy of behaviour control, with Du Pont (2000) as the most well known example (see e.g. Doyle, 1991, for critique of Du Pont, but also Wokutch and VanSandt, 2000, for a more positive evaluation of the safety achieved by their OHSM). According to Dotson (1996), OHSM in large US corporations is in general based on the "understanding that most injuries in modern workplaces are caused not by unsafe conditions, but rather by improper or improperly executed work procedures", i.e. an antithesis to the Framework Directive's prevention strategy.

5. Slow implementation of FD's OHSM

5.1 *Lack of evaluations but some data on risk assessment*
The wide work environment concept is included in the OHSM regulations of the EU countries, for example in the Netherlands (Arbeidsomstandighedenwet, 1999) and in France (Rivest, 2002: 98). In Denmark (Jensen, 2002) and Sweden (Frick, 2002: 231), the inclusion of organisational prevention was even a major aim of their new work environment laws of the 1970s. The scope of risks to assess and prevent in the UK is possibly more restrictive (see e.g. Walters, 2002b: 251-58). The formal transposition (Management of Health and Safety at Work Regulations, 1992) only orders employers to carry out a suitable and sufficient assessment. The OHS authority is ambiguous in its information on how to interpret this. On the one hand, the general OHSM information includes organisational factors and lists several of these (e.g. in HSE, 1997a: 13). On the other, the guide on risk assessment (HSE, 1999: 6) informs employers that they need to be able to show that they "dealt with all the obvious significant hazards", thus excluding a duty to assess less obvious but possibly serious risks (and it is up to them to decide what competence the need to identify and prevent all risks).

National differences may be larger in theory (law in the book) than in practice (law in action). The management of OHS at the EU workplaces is little known. Very few serious evaluations have been done of the FD's implementation, despite its intended fundamental role in EU's OHS politics. The few existing figures are from surveys to employers, i.e. of self-reported compliance, and mainly with their duty of risk assessment:
• 55 per cent of the Swedish employers had assessed the risks in 2001 (AV, 2001a: appendix: 68).
• Only a few employers in Greece had done this at the end of the 1990s (Karageorgiou et al., 2000: 267).
• 29 per cent of the Danish employers had started, and another 16 per cent finished the workplace assessment in 1997 (the Danish version of risk assessment; ibid: 270).
• 28 per cent of the Dutch employers had assessed the risks in 1997 (ibid: 273).
• 35 per cent of the British employers had done this in 1998 (ibid: 268).
• Around half of the German employers had assessed the risks at the end of the 1990s (according to varying data; Schaapman, 2002: 141).
• 47 per cent of the employers in Norway had implemented the OHSM regulation of 'internal control' in 1999 (Gaupset, 2000: 340).
• 46 to 86 per cent of the Spanish employers (depending on their size) had assessed the risks in 2000 (Walters 2002c: 89).

5.2 *Quality of implementation: Poor OHSM of the work organisation?*
Large firms consistently report much better compliance than the small ones. Yet, these surveys hardly indicate that OHSM is well implemented in large organisations within the EU. What is behind these figures is not clear and self-reported compliance is likely to be overstated. Some studies indicate that it may well be grossly exaggerated. For example, the Swedish labour inspectors rated the compliance to be much less than in the survey, and case studies indicated that even the inspectors may be too generous in their assessment (Frick, 2002: 228). The auditors' critique of the elite of firms, which applied for voluntary certification of their OHSM (AV, 2003a), also indicate that full compliance with the OHSM regulation probably is rare. The widespread lack of competent OHS advice in combination with other survey answers (e.g. 'knows the regulation') indicate that employers often do not fully understand what is required of their risk assessment and other OHSM. They are therefore even more likely to overstate their compliance. As an example, two thirds of the

Swedish local communities rated themselves to comply with the OHSM ordinance (i.e. with the Framework Directive; AV, 2001a). As complex public organisations, they are probably capable to formally organise and document some OHSM, i.e. manage good paper compliance. Yet, this did not prevent a sharp increase in their workers' sickness absenteeism, while research demonstrated structural obstacles to their OHSM (Larsson, 2000: 209-12).

If and how an employer has implemented OHSM depends on how this is defined. The Framework Directive is very ambitious. All risks must be assessed and prevented. The quality of the implementation is even lesser known but the data we have indicate e.g. that often the organisational aspects are excluded, worker participation is poor and-or the risk assessments do not go upstream to the roots of the problems (see Boix and Vogel, 1999: 7-27; Frick and Wren, 2000: 34-42; Walters, 2002d: 285-88). The inclusion of organisational factors in the OHSM was actively promoted in Denmark and Sweden. Yet even there, risk assessment and other OHS activities have great difficulties to go beyond the traditional technical OHS aspects (Jensen, 2002; Strangert, 2000). In Germany, the workers compensation insurance bodies – with a strong preventive role in their OHS system – have a technical, accident prevention tradition. This tradition has difficulties to handle organisational OHS factors and psychosocial diseases (Schaapman, 2002).

Part Two - Obstacles to and promoters of a broad OHSM development

6. Structural, economic and management obstacles to an effective OHSM

6.1 *Who should do What to develop an effective OHS management?*
As any other complex social reform, the workplace implementation of the FD's regulated OHSM – the prevention of all risks – cannot be understood as a simple balance between the authorities' enforcement and the employers' obstruction (due to other interests). OHSM at the workplaces is instead the much more complex result of the interaction between many promoting and obstructing factors. Most of these are developments in the economy and not directly aimed at the OHSM. To sort out the relevant of these general changes, and how they relate to the intentional OHSM promotion, we first have to look at what OHSM actually requires.

In an effective OHSM, middle and lower management, which run the production and thus its OHS conditions, are to identify and control all OHS risks. There is, as mentioned, no consensus of what OHSM is and thus what changes are required of the employers to guide and allow the operational management to achieve this aim. However, in their analysis of OHSM systems, Gallagher, Underhill and Rimmer (2001) identify which actors, who have to do what to develop an effective OHSM. Firstly, there must be actors to carry the change, i.e. a strong and continuous involvement by the top management and by the workers. Through OHSM, these social partners are largely to take over the duty to control the OHS quality from the external inspectors. They are to define the OHS problems and (with the legal requirements as a minimum) agree to how to resolve them. To achieve this, these partners have to adapt the OHSM to the varying situation of the organisation and integrate it in its general management. To these requirements should be added the OHS competence of these local actors, which is also required by the FD, and which often is lacking. Finally, there is a need for self-audit of the OHSM. This inherently difficult management has to be regularly checked and improved (but which thus is not required by the FD).

6.2 *Structural obstacles to mobilize the actors of management and workers*
The mobilization of the local social partners to adapt and integrate an effective OHSM is obstructed mainly by:
• Changes in economy, which undermine their position as actors.
• Conflicts of interest, which makes employers reluctant to develop the OHSM.
• Inherent management problems, which make any organisational development difficult.

The first major reason behind the poor implementation of OHSM is the structural changes in the economy. These weaken the ability of the local actors, instead of mobilizing them, to develop of OHSM. Large organisations are split into many formally separate legal units. They downsize and focus on their core-business, through both out- and in-sourcing. Or they organise their production in networks, e.g. through franchising and subcontracting. Large organisations (employers) have always been the exception. However, with reduced transaction costs, their formal – and thus legally responsible – control of production tends now to be even more shifted from their organised hierarchies to market relations with other firms (Williamson, 1980; Castells, 1996).

There are some attempts to widen the legal responsibility for OHS (and thus also for OHSM) beyond the formal employment contract, e.g. through duties of co-ordination at joint construction sites. Still, the legal OHS duties cover only a limited amount of these network relations. The formal fragmentization does not mean that large firms are loosing power in the economy. Instead they focus on the control of global markets, through the increasing importance of brand names. With their market positions, they can and do exert a strong control also over the production of their subcontractors and other smaller firms in their networks (Castells, 1996). Large firms therefore also have considerable power to influence the OHS conditions within their networks. This is sometimes used in voluntary schemes to promote good OHSM. For example, in the UK large firms are to be 'good neighbours' to small ones, and local communities are to require good OHS of their suppliers, while the petrochemical industry in the Netherlands requires OHS certificates from their contractors. Johnstone (1999) also discusses how existing laws can cover working conditions in such networks, through a wider interpretation of duties to third parties. Nevertheless, the implementation of regulated OHSM faces a severe problem of not being applicable to a large and growing part of the economy, i.e. the network relations.

The economic changes also erode the position of the other actor: the workers and their unions and representatives. Short term and other casual work make up a growing part of all employment. This obstructs the continuous dialogue between management and workers, which is to control the OHSM. In many sorts of temporary employment, the workers are not even formally entitled to be a part in such a dialogue (see Quinlan and Mayhew, 2000; and the conference paper by Quinlan).

6.3 *OHSM uses management resources and may reveal expensive problems*
Employers' interests in a cost-efficient production (profit in private firms and value for tax money in public organisations) are not by definition in conflict with workers' interests in healthy and safe workplaces. The relation between these separate interest depend mainly on the type of production, on its possible OHS risks, what it cost to prevent or abate them and what possible benefits such OHS improvements may bring to production. How much the economic and the occupational health and safety interests are opposing or overlapping in reality is much debated. Dorman (2000) finds that practice demonstrates the conflict to be strong and analyses how the structure of management tends to increase this conflict. Like

many other OHS authorities, the British HSE instead promotes voluntary compliance with the regulated OHSM, as a 'business case' of 'safety pays' (HSE, 1997b). Other writers see it as depending on the circumstances of production, often with opportunities for OHS competence to increase the joint interests (Frick, 1997; European Agency, 1999).

However, experience and research shows that the market strategy to 'sell' better OHS as profitable has met with a limited success. Managers generally still see OHS more as costs than as investments. The widespread scepticism to invest in OHS is as much an obstacle to develop the management of OHS. With tight budgets, managers are less interested to systematically assess all OHS risks, as they may incur new costs to abate the problems revealed. This was a major reason for the US employers' fierce resistance against the proposed ergonomic standard (= regulation). The required assessment of ergonomic risks was regarded to undermine their legal defence (including against OHS costs) that they didn't know the risk existed (Needleman, 2000).

Another economic obstacle to effective OHSM is the shortage of management itself. Management is a scarce and costly resource, like any other used in production. In the modern economy, top-management tends to be more and more oriented to the product and capital markets, while production (and thus its OHS) is delegated to lower levels. This middle and lower management is also cut down, as the daily production is to be run through work-teams (whose operations and results are traced by the information systems). For example, supervisors of home-care in Swedish local communities may well be in charge of more than 200 workers. These supervisors have little time to assess the working conditions, let alone to improve them. An important aspect of the scarce management is the availability of adequate OHS competence (as explicitly required by the FD, but variously regulated within the EU countries). To train managers and workers costs money and so does the hiring of OHS services. In Sweden, this resulted for example in a considerable downsizing of the amount and type of advice hired by the employers, when the OHS services were deregulated in the early 1990s (Frick, 2002).

Economic incentives are often used to overcome the economic obstacles against OHS improvements, including of OHSM. Differentiated workers compensation premiums, employers' duty to pay the (reduced) wages during workers sick leave and other similar instruments are common. However, nearly all of them hinge upon workers' behaviour of reporting injuries and not upon their work-related health and even less upon the working conditions (which are to be controlled by the OHSM). As they measure and reward/punish reported figures, such incentives have been repeatedly demonstrated to initiate claims management, harder worker selection and other avoidance behaviour, more than a preventive OHS management (e.g. in Larsson and Clayton, 1994; Frick, 1997).

6.4 *Poor management is normal*
The third principal obstacle against the development of OHSM is the inherent limitation in management. Even within the legal boundaries of organisations, and even when there are some joints interests to improve OHS, it is difficult to mobilize management and workers in a dialogue to adapt and integrate an effective OHSM. The reason is that poor management is normal. It is difficult to co-ordinate many people towards any goals, including those of the organisation's owner/principal. Even the most successful organisations have a lot of internal strife, misunderstandings, failed plans, shortsighted decisions and incompetencies. Management is thus not only a quantitatively scarce resource. It also has serious limitations in quality and competence.

To describe and explain the discrepancies between organisations' aims and their much more muddled reality, the images of organisations and of their decision-making in organisation theory vary between two extremes. On the one hand, there are traditional prescriptions of rational management, and the idea of a rational economic man is still retained in economics. At the other extreme, the internal life of organisations is described and analysed as chaos, with (at best) some co-ordination. However in practice, the majority of organisations do not disintegrate. Most of them continue to produce goods or services. Sometimes their production is even described as being very efficient, measured e.g. in profits or in quality. Despite all the inherent problems of co-ordinating the work by many people, some level of rational management (i.e. towards a cost efficient production) is thus possible.

But such a goal-oriented rationality is always an uphill battle, which requires continuous hard work. The achieved 'rationality' is always a relative one, under which the conflicts, mistakes etc go on. To keep from sliding too far down into chaos, management usually relies on two types of instruments. The first is to create supporting structures, which limits – and thus guides – the many individual decisions. This organisational 'skeleton' prevents each decision from being taken anew, against the total background of the goal and situation of the organisation. Such techniques include:
- Routines and rules (the Weberian bureaucracy), which try to standardise and guide decisions.
- Accounting and other information systems, which structure the information in decisions.
- Compartmentalisation, which divides goals and duties into smaller and more precise tasks.
- Culture and other informal means to guide perspectives and relations within the organisation.

The second instrument is compromise. Employers accept that their goals cannot fully prevail in any organisation. How much their interests can dominate is a debated issue in organisational theory, and it varies with the circumstances. However, for the production to run at all, top management has to accept bargaining and compromises, between the many actors and stakeholders involved in the organisaton, e.g. between;
- The various internal sections and functions.
- The owners' interests and those of the individual managers and others with internal power.
- The employers-managers and their workers.
- The internal organisational needs and the interests of external stakeholders.

7. Organisational development to adapt the general management to OHSM

7.1 *Top-management has to change structures and rebalance interests*
It is neither exhaustive nor original to state that the management of an organisation is at best semi-rational (towards the goals of its principals), reliant on many conservative routines and a perpetual balancing of interests. However, this gives a more realistic picture of the complex and imperfect management into which systematic consideration of OHS is to be integrated, than the idea of OHSM compliance as a rational response to regulation and enforcement. As with other outside requirements, the type and strength of the OHS authorities' regulation, information, sanctions and other means to promote OHSM is important for the organisation's type and level of compliance. But the intended implementation will in any case require the organisation to adapt its routines and compromises to the needs of the OHSM. The early warning and primary prevention of OHS risks intended by OHSM, can rarely be achieved

only by adapting the forms of OHSM to the existing complex management. If OHSM is to operate completely within the organisations' existing routines, divisions of responsibilities, information systems etc, it will remain a limited activity for a few specially interested within the too isolated 'side-car' position. Or in other words, OHSM may be implemented on paper but live a life of its own, with little influence on the management's general decisions, which create the OHS conditions.

In order to assess and prevent all risks, the organisation's tools and structures of management must themselves also be adapted. For example, the existing communication, routines and responsibilities between maintenance and production may have to be improved in order to react quicker to potential risks. The interaction between the personnel department and line management may also have to be revised. And project managers may need a widened brief, competent advice and more time and resources to better take into account the OHS consequences of the technical and-or organisational changes they are undertaking. But such overt adaptations need to be supported by the top-management also through formal changes in the division of goals and duties and through the reformulations of the compromises of interests between all the involved parties, which make the execution of these duties possible. Sometimes, even the general information and decision structure may have to be reconsidered. For example, when the top-management decisions too much restricts the conditions of production with little attention to and information about the shop-floor (be that e.g. a school, a department store or hospital ward). The line between adapting the structure of the organisation and internal development of its management is thus not absolute. It is rather a gradual issue of analysing where-how decisions that affect the OHS conditions are taken, and make whatever adaptations necessary for OHS considerations to be integrated in these decisions.

As the OHS conditions are an aspect of the production, the organisational development needed for an effective OHSM varies with the circumstances. However, very often these changes in routines, relations and duties need not be extremely cumbersome, as they are to follow (i.e. improve the existing) structure of decisions on production. Top-management has to invest time to develop the OHSM – as it cannot be only formal and limited – but the changes are more a matter of attitude and competence than of huge reorganisations. It is therefore not surprising that the organisations, which succeed in improving their work environment usually also have a good economic performance.

7.2 *Participation, organisational competence and self-auditing needed in OHSM*
However, empirical studies of how OHS problems generally are handled indicate that the management of most organisations – and labour inspectors and others who try to influence their OHSM – need to pay special attention to four (related) aspects of this development. Firstly, both the quantity and the quality of worker participation in OHS issues usually need to be considerably improved. If at all much consulted, most workers and their representatives come in too late in the decision process. According to the OHSM mandated by EU's Framework Directive, the prevention should mainly occur upstream, in the early technical and organisational decisions, which are taken at higher organisational levels, where there should thus also be a dialogue between management and workers (see the paper by Walters).

The need to review the forms of worker participation and the decision and information structure in general is especially important for the assessment and prevention of the organisational risks. To see and improve the possible OHS consequences of such less obvious

risks, you need both a better dialogue between management and workers and development of the management as such.

This relates to the third problem, the common lack of OHS competence. In several countries there is a more or less widespread supply of OHS competence on technical risks (although not necessarily demanded and used by managers). But there is usually more difficult for interested managers to find competent advice on the OHS risks of the organisation of work, working time, pay-systems and similar factors and on how to develop and adequate OHS management. The shortage of expertise, enhances the need to systematically take such issues into account when the management of OHS is developed, i.e. that managers and their dialogue with the workers must themselves resolve these problems without much expert support.

Finally, like all other management, OHSM is difficult and cannot therefore be organised and then left to itself. Organisational life is fluid and some form and regularity of internal audit and adaptation of the OHSM is needed for a continuous OHS improvement. With the change of the production – and thus for the OHSM – and with the management problems discussed above, an OHSM which isn't regularly checked, improved and supported from the top will therefore degrade, be that the simpler (but important) OHS routines of a small service firm or the necessary complex OHSM system of a high-risk large technical facility (Cullen, 1990; Hopkins, 2000).

8. The active OHS promotors are relatively weak

8.1 *The OHS infrastructures' limited resources to support the OHSM development*
The implementation of OHSM therefore usually requires a considerable development of the structure and tools of management in an organisation. At the same time, economic pressures make managers reluctant to develop a systematic OHSM when they still see further OHS activities more as costs than as investments, However, in spite of these obstacles, the development of OHSM is facilitated by some changes in the general structure and organisation of production (see 9 below). But the direct promotion of OHSM is mainly left to what we may call the OHS infrastructure. This consists of the resources and policies of OHS authorities and of other OHS-actors, primarily the social partners and OHS advisers (from e.g. occupational health services and insurance companies).

Compared to the changes needed to implement the OHSM and the underlying OHS problems, the resources of these actors are limited in quantity, in quality and they are often poorly mobilised through lack of policies and co-operation (see also Walters, 2002a, on how national OHS-infrastructures have promoted the implementation of EU's Framework Directive). Some studies estimate the costs of occupational ill health to around 3 to 5 per cent of national GNPs (e.g. Industry Commission, 1995: 17; but this does not include e.g. production problems due to poor working conditions). In comparison to this, the OHS actors are few in all countries. For example, Sweden's 3.5 million (employed) workers and 280 000 workplaces (with employees; in 1998, SCB, 2000: 349) are supported by an unusually well resourced OHS infrastructure (though not at the top in all respects). Yet, Swedish labour inspectors have to supervise on the average some 800 workplaces, while the OHS consultants (in the OHS services) are to advise around 75 workplaces each, and the safety representatives (appointed by the prevalent unions) have 3 workplaces each in which to participation on OHS issues.

The labour inspectors manage some 20-25 000 of the Swedish workplace visits per year, a reduction as OHSM inspections take longer time than traditional ones (Remaeus and Westerholm, 2001). There is thus an average of almost fifteen years between the visits to each workplace. Although, the OHS authority aims to guide the inspections to where they are most needed, the inspectors' ability to directly enforce the OHSM implementation (= development) remains limited. Other countries have similar – or worse – quantitative restrictions in how far their OHS authorities can directly enforce the development of OHSM.

As mentioned, the difficulty to supervise and improve the OHS from the outside, through inspections and enforcement, was a major reason behind the adoption of the OHSM strategy around 1990. Like in other quality control, that of OHS had to go upstream, to become the internalised control of the management, which planned and led the production and its working environment. However, to reap the possible benefits of this integrated OHSM, there is thus a need to for most organisations to develop their general management. And labour inspectors can – and do – contribute to that development, through advice and through orders of improvement (e.g. in Sweden; Strangert, 2000). Yet, nowhere can they have more than a limited and very selective role as promotors of the OHSM development.

The other major external promotors of improved OHS are the OHS experts. The FD thus mandates that all employers are to secure adequate OHS competence. However, the diverse interpretation and practices of OHS services within the EU also means that their role to support the development of the management of OHS improvements varies widely (but they are sometimes explicitly given this task, e.g, in Sweden; AV, 2001b). Cases are reported from different member countries, in which OHS experts have actively supported OHSM, e.g. in small firms (Walters, 2001). And in most countries, these experts are much more numerous than the labour inspectors. In Sweden they are thus about ten times as many. Yet, in very many organisations (notably in the public sector, with severe OHS problems) their expertise is not hired for more than a couple of hours per employee and year. As a whole, the OHS experts have to support at the very best some 100 workplaces each. They too are therefore hardly able to analyse and suggest the changes in the management structures to integrate OHS considerations in these structures in more than in a few of all organisations.

As originally intended, the development needed to comply with the mandatory OHSM is therefore mainly up to the organisations and their internal resources. The workers and their representatives are to support both the development and the content of the OHSM (to participate in "all questions relating to the health and safety at work"). Yet, even in Sweden, the around 100 000 safety reps should be at least twice as many to cover all workplaces from 5 employees (as the law intends; ATK, 2000: 18). And these reps also regard lack of time as a major problem in their OHS duty, as they can on the average only work a couple of hours per week as reps (or some 0.1–0.2 per cent of the total Swedish working time; LO, 1997). Workers participatory resources are usually smaller in other countries. E.g. in the mid 1990s Australia had some 8 million workers spread over more than 1 million workplaces (Year Book Australia, 1996: 356). These were represented by around 50 000 safety reps, (Mayhew and Stacey, 1996). The Netherlands has no safety reps. Instead the right of participation rests with the works councils. However, a study found that that these councils were also lacking in time (and in knowledge, experience and management support; Popma, 2002). The local dialogue, as a base to develop OHSM, is thus not very strong either (see further Walters' paper on participation).

The OHS infrastructure's limited resources to promote OHSM were accentuated by the contra-cyclical nature of the Framework Directive. The directive's reform ideas originated in the politically and economically active 1980s (Walters, 2002a). However, they were transposed into the member countries' legislation, and thus to start being implemented, during the economic slump of the early and mid 1990s. The focus was then mainly on budget deficits, economic revival and saving jobs, which reduced the political support and the resources to OHS infrastructures to implement the FD's ambitious OHSM strategy (see e.g. Frick, 2002, on Sweden).

8.2 *OHS actors with more competence in technical risks than in organisational development*
The OHS actors thus had limited resources and little external support to promote the employers' OHSM. To this should be added, the limited competence of labour inspectors, OHS advisers and safety reps to understand and support the organisational development needed to implement OHSM into the general management. As discussed, this often requires a thorough analysis of the existing management's structure and instruments. Yet, the background, training and experience of inspectors, OHS experts and safety reps alike is much more focussed on the detection and abatement of individual OHS problems, than on the change process, the management, needed to resolve these problems. With varying amount and emphasis, these OHS promotors are much more competent in the technical-medical and the legal OHS issues, than in how to analyse and develop organisations and their management. This may be especially the case for the management of the organisation of work, as a major OHS factor.

To increase the competence of the OHS infrastructure to also support the development of OHSM, it needs changes in the type of professionals recruited, in how these are trained and in the instructions and instruments to support their work. I.e., to increase its ability to support the integration of OHS consideration into the general management of organisations, the OHS infrastructure has to undergo a broad development, parallel to the one they are to support. Although it is a complex and long change process and the results are hardly evaluated, many OHS authorities try to reorient their labour inspectors towards the promotion of OHSM, for example in Norway (Skaar, 1994; and Skaar and Nicolaysen, 1997) and in Sweden (Strangert, 2000; and Eriksson, 2003).

The OHS experts are usually more difficult to reorient. Occupational doctors, ergonomists and safety engineers have basic training in natural science, not in the theory and development of organisations and management. And at least in Sweden, the behaviour scientists recruited to the OHS services are much more oriented towards group relations and individual counselling than towards management. Some organisational change may be included in the OHS experts' special OHS training. As individuals they may e learn about this in their practice. Yet, as a whole the OHS experts seem to have a limited competence to advice employers on how to develop their OHS managements.

The safety representatives have a practice to interact with management. Through this, and through their union background (in some countries), they may gain insight in the management of OHS. Yet, their OHS training is also mainly focused on the technical-medical problems, possibilities to resolve these and regulation, which support their improvement demands. Likewise, they gain a negotiating experience mainly in how to resolve individual problems. The safety reps are thus also less competent to support (and demand) the changes needed in management to develop an effective OHSM, and unions rarely give them adequate training and support to increase this competence (Frick and Walters, 1998; Walters and Frick, 2000).

8.3 *Lack of policies and networking*

The OHS actors thus have limited resources and competence to promote the organisational development usually required to implement OHSM. As other weak actors, they need good planning and co-operation to support their overlapping OHSM efforts and other largely joint objectives. However, this is rarely the case within OHS. In OHS politics, the issues are mainly described as a number of isolated technical-medical problems, which have to be resolved, and much less as a continuous improvement of the OHS quality. Governments may initiate a lot of inquiries and other rhetoric and sometimes even reforms. However, they very rarely support the implementation of such reforms by coherent and continuous policies (see e.g. the national chapters in Walters, 2002a). And, as mentioned, the implementation of the Framework Directive's OHSM, was further obscured by the economic downturn and consequent shift in political attention. Like top-management, once decided, governments leave the 'production' (i.e. the implementation) of the OHSM strategy and other OHS reforms to the 'specialists', the OHS actors. The lack of political interest in evaluating the implementation of the OHSM reform is consistent with the 'delegation' of this complex and long-term development.

Unless the authorities, unions and others interested themselves manage to co-operate and to engage other more powerful production actors, the OHS infrastructure as a whole risks to become isolated in the mentioned 'side-car' position (2.4 above). Within the EU, national OHS authorities have to varying degrees developed policies which aim to support a broad and long-term development of OHSM (see Walters, 2002a; although the lack of evaluations makes it hard to differ between rhetoric and practice). Although, the authorities more or less interact with the social partners – depending on national industrial relations settings – in the formulation of such policies, they rarely envisage the implementation of these policies as a co-operative interaction between themselves and the social partners. For example, while authorities may be more or less open to business interests, they do not describe the problems of safety reps as a major obstacle for their own promotion of OHSM, despite that the OHSM is intended to be based on an active local dialogue between management and workers.

However, if the authorities tried to build such implementation networks, the response by the social partners might be limited. Employer organisations usually allot much less resources to OHS policies than the unions do. They also tend to focus their policies more in defence of their members against what they claim to be ineffective regulations than in the promotion of the OHS measures they accept (which largely include the OHSM principles; though they do support training and information on OHS issues). For the unions, safe and sound working conditions are traditionally one of their foremost goals. Yet, with a widespread decrease in unionisation, their resources to promote OHS have been reduced. The growth of casual work, plus decreased unions rights in some countries, also makes it hard for them to mobilise workers in the intended OHS dialogue with management. To this should be added the union's internal competitions and divisions, which may obstruct their OHS policies. Wage negotiations remain the primary union task, and the most important avenue to climb in union politics, while OHS activists are often more isolated from the real union power. At least in Sweden, this has led to a frequent competition about the work organisation between safety reps (who by union promoted OHS law should handle this as a major OHS issue) and the negotiators, who are trying to broaden and modernise their interaction with management. In all, the unions are neither very competent nor very active in supporting their workplace representatives to engage in the development of OHSM (Walters and Frick, 2000).

9. Factors supporting the development of OHSM

9.1 *Surveys and case studies indicate improved management of OHS*
The obstacles against the development of OHSM are strong while the actors working for the implementation are relatively weak. However, this does not mean that the OHSM strategy is by necessity a lost cause. Experience and case studies reveal considerable differences in the work environments between workplaces within the same industries, i.e. with the some organisational and technical prerequisites for their production and thus their OHS. For example, some garages have closed areas with ventilation for paint and welding jobs, check the safety of their machinery, use both equipment and organisation to imp ergonomics and let the mechanics influence the work organisation. Other garages lack most or even all of this prevention against work related ill health. Similar differences in how the same conditions of production are turned (= managed) into quite varied work environments are noted in other industries. Despite structural obstacles etc, employers and their managers thus have a choice in the work environments they create.

Employers also seem to use these possibilities to manage OHS. The OHSM surveys mentioned under 5.2 have been repeated in some countries, e.g. in Norway and Sweden (Gaupset, 2000; AV 2003b). They report a growing compliance with the OHSM regulations. This may reflect a better knowledge of the correct answers to questions on OHSM but e.g. the Swedish labour inspectors gradually increased ratings of the OHSM 'status' of organisations (AV, 2003c, compared to AV, 1997) indicate that the surveys reflect at least some genuine improvement. But at the same time, the continuous destructuring of the long-term employment relationship (see the paper by Quinlan) entails a strong risk of polarisation in working life. Core-workers may come to enjoy improved OHS while the OHS conditions of casual workers may deteriorate. I.e., employers can, at least in part, 'manage' OHS by exporting the risks to workers formally outside of their organisation (e.g. Thebaud-Mony, 1999).

The total workplace effects of these contradictory tendencies may well vary with the national economic structures and strength of their OHS infrastructures. But this is not known, as there are no evaluations of the implementation of the OHSM strategy. However, we do know that OHSM is more or less implemented in many workplaces, despite the structural, economic and management obstacles discussed above. The developments is largely caused – or at least considerably supported – by general changes in the production. Some of these changes are especially important to facilitate a systematic OHS management:
• When conditions of production enhance the role of work and thus the interests of employers and managers to improve its work environment.
• When changes in the structure and methods of management facilitate a systematic OHSM.
• When the OHS actors' promotion of OHSM is successful.

9.2 *Conditions of production support the priority of OHS*
Some conditions of production may enhance the interests of employers and managers in improved OHS enough to give it priority within their limited time and resources. They may find it cheaper to prevent problems than to hide or disregard them, for example when:
• Wages make up a small part of production costs but the quality of the work output is important for the total productivity, so that this quality work should not be obstructed by poor working conditions (i.e. when it is more important to work smart than hard).

• The labour market situation enables OHS related personnel problems, e.g. turnover and absenteeism, to disturb the production, even where the quantity of work output is more important for the profitability than its quality (c.f. Hirschman, 1970).

• Reputation as good citizens/employers is important and poor OHS may jeopardize this reputation (which may induce prevention, but also externalisation of the problems; Thebaud-Mony, ibid).

• Managers, for these and other reasons, learn that it costs much more to correct problems in the existing production than to avoid them through a preventive management.

• Insurance companies and authorities lower premiums for organisations, which invest in OHSM and raise them for those that neglect OHS issues.

• Changes in the accounting system make the costs of OHS problems visible at higher management levels.

• Managers learn or are advised about cost-efficient OHS improvements, through limited investments.

• Systematic prevention is regarded as necessary to ward of possible OHS litigation, which may cause much higher costs than worker compensations premiums (of which, the US asbestos cases are most well-known but similar third-party law suits are also conducted against the effects of e.g. lead, PCB and nuclear and other hazardous waste).

The widespread management scepticism against investing in OHS is thus not a monolithic confrontation between interests. Instead there are many conditions of production, which may affect this attitude, but these conditions are complex, changing and depending on the unique circumstances. Employers and their managers may therefore differ much in their net balance of the pros and cons of investing in OHS. And how they perceive the profitability of managing OHS can therefore be strongly influenced by external factors, like the media and the labour market. But managers may also be influence by active OHS promotion, especially if it takes into account the interaction between working conditions and production (see e.g. Oxenburgh, et al, 2003).

9.3 *Management and workers more competent partners in OHSM*
A more positive attitude to the profitability of OHS is one reason why some employers develop their OHSM. However, the influence may also go in the other direction. Changes in the general management may enable the employer to better perceive and make use of the possibilities to combine OHS and production interests. Likewise, changes in the structure and organisation of production do not only hamper the possibilities for workers and their representatives to be an active part in the dialogue on OHSM. In some instances, new forms of work organisation can also facilitate their mobilisation as an active dialogue partner in the OHSM. Some of the organisational changes, which may support a systematic OHSM, are:

• Management changes in general may support OHSM. The systematic assessment and prevention of OHS risks does not require miracles. It should (as discussed above) instead be completely adapted to the conditions of production and its management. A better general management is therefore also more capable to manage OHS, including being cost-efficient in this management, as is often shown in case studies of OHSM. For example, the Swedish truck manufacturer Scania did only partly achieve its ambitious OHS goals. A major reason was that operational management, including of OHS, was hampered by a centralised and bureaucratic control (Frick, 1994, chapter 8). When the autonomy of the production management increased, it therefore succeeded in reducing the accident rate by one quarter in 5 years (Verkstadsbladet 1996).

• Quality control competence in particular may also be used to improve the control of the OHS quality. The flourishing management ideas of quality control, lean production and new management have in some aspects hampered the employers' capacity to assume the responsibility for the OHSM (Larsson, 2000). Yet, at the same time, their increased general development capacity can also facilitate this management (Kamp and Le Blansch 2000, Lindøe and Hansen 2000, Shaw and Blewett 2000).

• Changes in production and work, which calls for more qualified task, is a double-edged development for the OSHM. The growing use of autonomous work groups in production may lead to increased self-exploitation and reduce the risk awareness of OHS risks, when workers take over much of the production responsibility from the employers (Walters and Frick, 2000). Yet, the more qualified and independent work tasks can at the same time increase workers' overview of the working conditions and their ability to formulate alternatives (i.e. OHS improvements) and also their interaction with management about the conditions of production.

9.4 *OHS actors partly succeed*
The OHS infrastructure is weaker than the general forces behind the changes in production. Yet, the OHS actors may still further a more systematic management of OHS, especially if they take these conditions of production into account in their OHSM promotion. Some of their major means to support the development of OHSM are:

• Indirect support by training and information but also by the setting of norms, in the regulations and in policy statements. I.e. both the law, the experts and the workers representatives work more or less consistently to inform employers and managers, what they should do to manage OHS, why they should do this and how they best can develop their OHSM. Such normative influences can hardly alone achieve major changes in how employers manage OHS, but in conjunction with other changes – e.g. in the type of management, in the role of work in production – it may well make a difference in many workplaces.

• Direct intervention by inspection, concrete advice and demands from experts and safety reps respectively, supported by their different forms of power through possible sanctions, through the states of medicine and other science and through the possible union pressures.

• In several countries, governments and the social partners support the improvement of workplace conditions through national improvement programs. One of the most well known is the German 'Humanisation of Work' during the 1980s. And in later years, such programs have been pursued to improve e.g. the ergonomics in Denmark between 1995 and 2000 and now conducted in Norway to adapt workplaces better to the variation in workers' capacities weaknesses and strengths. In as far as they succeed in OHS improvements, they are also likely to raise the local ability to see and handle other OHS problems, i.e. to promote their OHSM capacity. The huge Swedish Work Life Funds – which in 1990-95 used 1.3 billion US$ to support some 25 000 workplace programs – explicitly aimed to (also) develop the local improvement capacity, through the implementation of OHSM (Frick, 1995).

• Despite a usually poor support by their governments, national OHS authorities often try to pursue more coherent strategies to promote the workplace implementation of OHSM (of which this Australian conference is just one example). They select, train and instruct their inspectors in order to better convey their OHSM message to the workplaces. And they use many indirect means, such as economic incentives and information and advice. Again, though

the authorities do not have resources to implement the OHSM regulation through direct enforcement, their long-term strategies can be expected to bear some fruit.

• Likewise, despite the unions' problems mentioned above, some of them have been more active and systematic than others to formulate and pursue policies to promote the development of local OHSM. This includes such means as better training for safety representatives, information to members, media attention to the problems and pushing the OHS authorities for more action. In Sweden, the chief safety representatives – who often work half- or full-time as reps – have often been active in showing their managers the need for and the possibilities of a more systematic OHSM.

10. Conclusions and implications for public OHSM actors

As healthy workplaces can at best become a secondary goal, and as a systematic OHS management to this end usually requires thorough organisational development, there are no panaceas to implement OHSM. Yet, a better understanding of what is required of the OHSM itself and also of the possible roles of the different OHS actors can help to support a more effective and efficient promotion of a preventive and integrated OHSM. The discussions above indicates that national OHS authorities and other public bodies which try to promote OHSM should:

I. Realise that OHSM inevitably is part of the broader agendas of business development and of industrial relations at work. Authorities have to work by law and according to their political instructions, but within these limitations they should use this wide perspective in their promotion of OHSM.

II. OHS authorities therefore have to continue to reorient themselves and their personnel to the issues of organisational development (without loosing their problem and legal competence).

III. OHSM is more apart of broader developments than individual, material OHS improvements. No OHS actor can therefore be very effective alone. To further their task of improving health at work, the OHS authorities should therefore support networks and co-operation with other OHS actors.

IV. The purpose of OHSM is to enable the local management and workers to take the responsibility of improving their own OHS conditions. The authorities should therefore investigate and support better conditions for worker participation in OHSM, but also for an effective local management. Most regulations of OHSM even make the conditions for worker participation formally a responsibility of the authorities. I.e. participation is no longer 'only' an industrial relations issue between workers and their unions and employers-managers, but has now become an objective which the governments OHS authorities are to support. This is a further reason why OHS issues cannot be isolated from other industrial relations issues.

V. Research and development in the field of OHS must be aimed at understanding the development process of OHSM (and of other changes in OHS), not only knowledge about the hazards and their health effects. This includes the need for a broad range of evaluations, of the implementation of national policies to implement OHSM but also of e.g. such questions as the role of workplace dialogue on other OHS issues, the amount and the workplace effects of the

information and training in OHS, and managers' use of economic information and arguments in their OHS decisions.

References

Arbeidsomstandighedenwet (1999). *Wet van 18 maart 1999, houdende bepalingen ter verbetering van de arbeidsomstandigheden*. Staatsblad van het Koninkrijk der Nederlanden, The Hague.

ATK (2000). *Bättre möjligheter till en bättre arbetsmiljö – Om skyddsombudens informations- och kunskapsförsörjning. Behov - möjligheter - tillgång - utbud*. Arbetstagarkonsult, Stockholm 2000-03-30.

AV (1997). *Arbetarskyddsverket: Årsredovisning 1995/96*. Arbetarskyddsstyrelsen, Solna.

AV (2001a). *Ett aktivt arbetsmiljöarbete?* Rapport 2001:12. Arbetsmiljöverket, Solna.

AV (2001b). *Arbetsmiljöverkets strategi beträffande Företagshälsovård*. Annika Hultin, Avdelningen för central tillsyn, 2001-09-07. Arbetsmiljöäverket, Solna.

AV (2003a). *Uppdrag att utreda utveckling och användning av arbetsmiljöcertifiering – Slutrapport*. 2003-03-31. Arbetsmiljöverket, Solna.

AV (2003b). *Undersökning om Systematiskt arbetsmiljöarbete*. Rapport 2003:2, Arbetsmiljöverket, Solna.

AV (2003c). *Årsredovisning, 2002*. Arbetsmiljöverket, Solna.

Boix, P. and L. Vogel (1999). *Risk Assessment at the Workplace – A Guide for Union Action*. Brussels, TUTB.

Castells, M (1996). *The Rise of Network Society*. Blackwell, Oxford.

Cullen, L. (1990). *The public inquiry into the Piper Alpha disaster*. Department of Energy, London.

Dalrymple, H., C. Redinger, D. Dyjack, S. Levine and Z. Mansdorf (1998). *Occupational Health and Safety Management Systems – Review and Analysis of International, National and Regional Systems and Proposals for a New International Document*. IOHA Report to ILO, ILO Geneva.

Dorman,P. (2000). If Safety Pays, why Don't Employers Invest in it?. In Frick et al. (eds.). *Systematic Occupational Health and Safety Management – Perspectives on an International Development*. Elsevier, Oxford.

Dotson, K. (1996). An international safety and health measurement strategy: corporate programs, systems and results. *J. Occ. Health & Safety – Australia & NZ*, 12, 669-678.

Doyle, J. (1991). *Hold the applause! – A case study of corporate environmentalism*. Friends of the Earth, Washington DC.

DuPont (2000). *DuPont Safety Resources*. www.dupont.com/safety.

Eriksson, O. (2003. *Plan för utvärdering av utvecklingsprogramment ARNE*. Ove Eriksson, VUS, Arbetsmiljöverket, 2003-02-12.

European Agency (1999). Health and Safety at Work – A Question of Costs and Benefits? *Magazine No 1, of the European Agency for Safety and Health at Work*, Bilbao. http:/agency.osha.eu.int/publications/magazine/en/mag1.html

Frick, K. (1994). *Från sidovagn till integrerat arbetsmiljöarbete – Arbetsmiljöstyrning som ett ledningsproblem i svensk industri*. FFA & Arbetslivscentrum, Stockholm.

Frick, K. (1995). *Reconciling the divergent goals of high productivity and occupational health and safety – The Swedish Working Life Fund´s integration of work environment and industrial policies*. Working Paper. National Institute for Working Life, Stockholm.

Frick, K. (1997). Can Managers see any Profit in Health and Safety? - Contradictory Views and their Penetration into Working Life. *New Solutions*, Vol. 7:4.

Frick, K. (2002). "Sweden: Occupational health and safety management strategies from 1970 - 2001. In Walters, D. (ed.): *Regulating Health and Safety Management in the European Union*, P.I.E. Peter Lang, Bryssel.

Frick, K (2003). EU's legal standard on risk assessment. In W. Karwoski (ed.) *Handbook of standards and guidelines in ergonomics and human factors*. Lawrence Erlbaum Publishers, (forthcoming).

Frick, K. P. L. Jensen, M. Quinlan and T. Wilthagen (eds.) (2000a). *Systematic Occupational Health and Safety Management – Perspectives on an International Development*. Elsevier, Oxford.

Frick, K. P. L. Jensen, M. Quinlan and T. Wilthagen (2000b). Systematic occupational health and safety management - an introduction to a new strategy for occupational safety, health and wellbeing. In Frick, K. P. L. Jensen, M. Quinlan and T. Wilthagen (eds.). *Systematic Occupational Health and Safety Management – Perspectives on an International Development*. Elsevier, Oxford.

Frick, K. and D. Walters (1998). Worker representation on health and safety in small enterprises: Lessons from a Swedish approach. *International Labour Review*, Vol. 137: 3.

Frick, K. and J. Wren (2000). Reviewing Occupational Health and Safety management – Multiple Roots, Diverse Perspectives an Ambiguous Outcomes. In Frick et al. (eds.). *Systematic Occupational Health and Safety Management – Perspectives on an International Development*. Elsevier, Oxford.

Gallagher, C. (1997).*Occupational Health and Safety Management Systems: An Analysis of System Types and Effectiveness*. National Key Centre for Industrial Relations, Monash University, Melbourne..

Gallagher, C., E. Underhill and M. Rimmer (2001).*Occupational health and Safety Management Systems: A Review of their Effectiveness in Securing Healthy and Safe Workplaces*. National Occupational Health and Safety Commission, Sydney.

Gaupset, S. (2000). The Norwegian Internal Control Reform. In Frick et al. (eds.). *Systematic Occupational Health and Safety Management – Perspectives on an International Development*. Elsevier, Oxford.

Gustavsen, B. (1980). Improving the Work Environment: a Choice of Strategy. *International Labour Review*, Vol 119:3.

Hämäläinen, R. M., K. Husman, K. Räsänen, P. Westerholm and Jorma Rantanen (2001). *Survey of the Quality and Effectiveness of Occupational Health Services in the European Union and Norway and Switzerland*. Finnish Institute of Occupational Health, Helsinki.

Harms-Ringdahl, L. (2001). *Safety Analysis – Principles and practice in occupational safety*. London, Taylor & Francis.

Hirschman, A. (1970). *Exit, Voice and Loyalty: Responses to Decline in Firms, Organizations and States*. Harvard University Press, Massachusetts.

Hopkins, A. (2000). *Lessons from Longford – The ESSO Gas Plant Explosion*. CCH Australia, Sydney.

HSE (1997a). *Successful health and safety management – HSG65*. Health and Safety Executive, Sudbury.

HSE (1997b). *The Costs of Accidents at Work*. Health & Safety Executive, Second edition, London.

HSE (1999). *Five steps to risk assessment*. hse.gov.uk/pubns/indg163.pdf.

Industry Commission (1995). *Work, health and safety - Inquiry into occupational health and safety*. Melbourne.

Jensen, P. L. (2002). Assessing assessment – The Danish experience of Worker participation in risk-assessment. Eco*nomic & Industrial Democracy*, Vol 23(2): 201-227.

Johnson, J. and G. Johansson (eds.) (1991). *The Psychosocial Work Environment: Work Organization Democratization and Health*. Baywood, Amityville.

Johnstone, R. (1999). Paradigm Crossed? The Statutory Occupational Health and Safety Obligations of the Business Undertaking. *Australian J. Labour Law*, Vol. 12: 73-112.

Kamp, A. and K. Le Blansch (2000). Integrating Management of OHS and the Environment – Participation, Prevention and Control. In Frick et al. (eds.). *Systematic Occupational Health and Safety Management – Perspectives on an International Development*. Elsevier, Oxford.

Karageorgou, A., P. L. Jensen, D. Walters and T. Wilthagen (2000). Risk Assessment in four Member States of the European Union. In Frick et al. (eds.). *Systematic Occupational Health and Safety Management – Perspectives on an International Development*. Elsevier, Oxford.

Larsson, T. (2000). The Diffusion of Employer Responsibility. In Frick et al. (eds.). *Systematic Occupational Health and Safety Management – Perspectives on an International Development*. Elsevier, Oxford.

Larsson, T. J. and A. Clayton (1994). *Insurance and prevention - Some thoughts on social engineering i relation to externally caused injury and disease*. IPSO-Factum 46. Arbetsmiljöfonden & Folksam, Stockholm.

Lidwall, U. and P. Skogman Thoursie (2001). Sickness absence during the last decades. In: S. Marklund (ed.). *Worklife and Health in Sweden 2000*. National Institute for Working Life, Stockholm.

Lindøe, P. and K. Hansen (2000). Integrating Internal Control into Management Systems: A Discussion based on Norwegian Case Studies. In Frick et al. (eds.). *Systematic Occupational Health and Safety Management – Perspectives on an International Development*. Elsevier, Oxford.

LO (1997). *Hur fungerar arbetsmiljöarbetet – En enkätundersökning bland LOs skyddsombud*. Landsorganisationen, Stockholm.

Lundberg, U. and B. Melin (2002). Stress in the development of musculoskeletal pain. In E. Litton (ed.) *New Avenus for the Prevention of Chronic Musculoskeletal Pain and Disability*. Elsevier, Oxford.

Mayhew, C. & N. Stacey: Occupational Health Arrangements in Australia. *Occupational & Environmental Medicine Report*, National Institute of Occupational Health and Safety, Sydney 1997

Mottel, W., J. Long and D. Morrison (1995). *Industrial safety is good business – The DuPont story*. New York, Van Nostrand.

Needleman, C. (2000). OSHA at the Crossroad: Conflicting Frameworks for Regulating OHS in the United States. In Frick et al. (eds.). *Systematic Occupational Health and Safety Management – Perspectives on an International Development*. Elsevier, Oxford.

Neumann, P. (2001). *On Risk Factors for Musculoskeletal Disorder and Their Sources in Production Systems Design*. Department of Design Sciences, Lund University, Lund.

Nichols, T. and E. Tucker (2000). OHS Management Systems in the UK and Ontario, Canada: A Political Economy Perspective In Frick et al. (eds.). *Systematic Occupational Health and Safety Management – Perspectives on an International Development*. Elsevier, Oxford.

Oxenburgh, M., P. Marlow and A. Oxenburgh (2003). Increasing Productivity and Profit through Health and Safety. Taylor & Francis, London.

Popma, J. (2002). Herorientatie arbodbeleid en de betrokkenheid van de ondernemeningsraden. *Tijdschrift voor Arbeidsvraagstukken*, Vol. 18 no 3 .

Quinlan, M. and C. Mayhew (2000). Precarious Employment, Work Re-Organisation and the Fracturing of OHS Management. In Frick et al. (eds.). *Systematic Occupational Health and Safety Management – Perspectives on an International Development*. Elsevier, Oxford.

Remaeus, B. and P. Westerholm (2001). Official Supervision and the Occupational Health Service. In: S. Marklund (ed.). *Worklife and Health in Sweden 2000*. NIWL, Stockholm.

Rivest, C. (2002). France: From a Minimalist Transposition to a Full Scale Reform of the OHS System. In Walters, D. (ed.). *Regulating Health and Safety Management in the European Union*. P.I.E. Peter Lang, Bryssel.

SCB (2000). *Statistical Yearbook of Sweden*. Statistics Sweden, Stockholm.

Schaapman, M. (2000).Germany: Occupational Health and Safety Discourse and the Implementation of the Framework Directive. In D. Walters (ed.) *Regulating Health and Safety Management in the European Union*. P.I.E. Peter Lang, Bryssel.

Shaw, A. and V. Blewett (2000). What Works? The Strategy which Help to Integrate OHS Management within Business Development and the Role of the Outsider. In Frick et al. (eds.). *Systematic Occupational Health and Safety Management – Perspectives on an International Development*. Elsevier, Oxford.

Skaar, S. (ed.) (1994). *Interkontroll – Ørkenvandring eller veien til det forjetted land?* SINTEF, Trondheim.

Skaar, S. and B. Nicolaysen (1997). *Arbeitstilsynets virkemidler – Hvor kommer de fra og hva blir de til?* SINTEF, Trondheim.

Strangert, B. (2000). *Studier av yrkesinspektionens metodik vid systeminspektion av internkontroll*. Rapport 1/2000. Arbets- och Organisationspsykologi, Umeå Universitet.

Sundström-Frisk (1990). *Löneformens betydelse för hälsa och säkerhet*. Arbetsmiljöinstitutet, Solna.

Taksa, L. (1993). All a Matter of Timing: The Diffusion of Scientific Management in New South Wales Prior to 1921. PhD Dissertation, University of New South Wales, Sydney.

Thebaud-Mony, A. (1999). Principles of Efficiency and Occupational Health: The Case of the Nuclear Industry. *New Solutions*, Vol 9: 4: 389-402.

Verkstadsbladet (1996). Arbetsolycksfallen ned i växellådsverkstan. *Scanias personaltidning Verkstadsbladet*, no 22.

Verkstadsföreningen (1978). *Se om miljön*. Sveriges Verkstadsförening-Svenska Metallindustriarbetareförbundet, Stockholm.

Vogel, L. (1994). *Prevention at the workplace. An initial review of how the 1989 Community Framework Directive is being implemented*. TUTB, Brussels.

Vogel, L. (1998). *Prevention at the workplace. The impact of the Community Directives on preventive systems in Sweden, Finland, Norway, Austria and Switzerland*. TUTB, Brussels.

Walters, D. (2001). *Health and Safety in Small Enterprises: European Strategies for Managing Improvement*. P.I.E. Peter Lang, Bryssel.

Walters, D. (ed.) (2002a). *Regulating Health and Safety Management in the European Union*. P.I.E. Peter Lang, Bryssel.

Walters, D. (2002b). United Kingdom: From peace-meal transposition to a third way. In D. Walters (ed.) *Regulating Health and Safety Management in the European Union*. P.I.E. Peter Lang, Bryssel.

Walters, D. (2002c). *Working safely in small enterprises in Europe: Towards a sustainable system for worker participation and representation*. TUTB, Brussels.

Walters, D. (2002d). Conclusions: The reception of the Framework Directive in different national systems. In D. Walters (ed.) *Regulating Health and Safety Management in the European Union*. P.I.E. Peter Lang, Bryssel.

Wokutch, R. and C. VanSandt (2000). OHS Management in the United States and Japan: The DuPont and Toyota Models. In Frick et al. (eds.). *Systematic Occupational Health and Safety Management – Perspectives on an International Development*. Elsevier, Oxford.

Zwetsloot, G. (2000). Developments and Debates on OHSM Systems Standardisation and Certification. In Frick et al. (eds.). *Systematic Occupational Health and Safety Management – Perspectives on an International Development*. Elsevier, Oxford.