

IOHA 2008

Occupational Hygiene and Cost Benefit

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Mr. Chairman, Ladies and Gentlemen,

It is a real pleasure for me to attend this Conference and to present a paper.

Thanks to the organizers for inviting me and thanks to all my colleagues who made it possible that I am the recipient of the IOHA Award.

I am happy. I am very happy. But I have also to say that something is regrettable, and that is the fact that the IOHA Award goes to one person only. I know many colleagues who deserve the Award as well.

I could talk at least one hour about my happiness and about my one-man-show as to the Award. But I am sure our chairman and the audience do not like such a presentation. Therefore I should not fiddle around; I should rather take care of my paper on occupational hygiene and cost benefit.

To prepare this paper, I had discussions with several people. Managers, workers, union members, occupational hygienists, physicians, safety experts, government officials, politicians. Sometimes it was enjoyable. Sometimes it was rather frustrating. But regardless of the various information which I received, many of the interlocutors expressed the opinion that occupational hygienists are mainly involved in exposure measurements and writing reports with a lot of statistics.

You may wish to learn how I got in touch with so many people. This happened primarily in Brussels which is the capital of Belgium. There I am doing consultancy work for the European Commission. By the way, the best exchange of information we had in the pub with a drink in our hands after ten o'clock in the evening.

Brussels is a real focal point for thousands of people are coming from all over Europe and also from other countries far away. The main attractions are the European Commission and the European Parliament; lobbyism is here the keyword. But I will not go into details.

Now back to occupational hygiene.

I heard a wide range of comments; especially several people from Germany did mistake occupational hygiene with sanitation and were of the opinion that occupational hygiene refers also to the cleanliness of lavatories. Some people even expressed their regret about the cleaning which I have to do as occupational hygienist. Another bad comment came from a company's manager who told me that he sees his occupational hygienist as a cost factor on two legs, strolling around with a dust sampler and a noise level meter. But regardless of the tenor of the comments, the most difficult task has been to bring about the subject of cost benefit.

I will not judge whether the results of my meetings are representative for the global situation, as the outcome is mainly based on Europe; but I think we should not neglect such comments. When so many people do not understand the rating of occupational hygiene, it seems we need some improvement to promote our discipline.

Several years ago, on the occasion of an occupational health and safety conference, an expert on statistics presented a paper on the merit of a healthy workforce. He had included into his presentation the calculation of cost and benefit of occupational health and safety. He made it very clear that the calculation of cost is an easy task; he has been able to collect the corresponding cost-figures without any problems. But, according to the expert, to get reliable figures on benefit, this was extremely difficult. At least on the benefit of safety measures he was able to present some results. He pointed out that the necessity of these measures is comprehensible, such as wearing a safety helmet or safety glasses or safety shoes; as without this personal protective equipment the consequences are obvious and understandable.

The merit of the job of the company's medical doctor was also demonstrated; there is no difficulty to understand that medical work is useful. By the way, medical doctors have worldwide a high reputation; in Germany they are number one on the hit list when the various occupations and professions are assessed, and

also in the field of occupational health the medical doctors do have highest appreciation.

When it came to prevention by occupational hygiene measures the expert on statistics could not present convincing arguments on their benefit. According to his findings occupational hygiene measures are dealing often with long-term effects; and how can we distinguish between a cancer caused by chemical agents during work and whisky consumed during leisure time.

Concerning long-term effects in general, I would like to refer to an American scientist (1). He found out that principles that guide our actions and omissions are aiming at proximity. He states in his book that there are no opportunities for altruism at a distance. In other words, human beings prefer actions which have a high probability of success, and according to his findings, this is within arm's reach. And going back to our discipline, the outcome of prevention by means of occupational hygiene measures is often far away from arm's reach. Similar is the situation on cost benefit. Usually one is immediately confronted with cost; contrary to cost the benefit is primarily a long-term effect.

We have also to admit that our knowledge of the extent to which different diseases can be attributed to occupational causes is limited; many diseases do have more than one cause. Workers exposure is difficult to ascertain where exposures associated with the jobs are not well known and workers often move from one job to another.

Without convincing arguments on the benefits there is not much of a chance to convince the employer to pay for occupational hygiene. And even the workers, and now I am talking about workers, to convince them that prevention of exposure to chemical agents is good for their health, does not always find acceptance. Here follows an example:

Recently I had to assess a workplace in a plant. I was impressed when I saw a rather modern carbon monoxide meter. But I was also concerned when I saw the reading which was fluctuating

around 75 parts per million; the TLV is 30 ppm. My proposal to the supervisor and also to the workers to implement control measures in order to get the CO-level down, caused a lot of discussion. Especially the workers insisted on the high CO-concentration. It took some time before I found out that their wages were directly linked to the CO-concentration.

For occupational hygienists it is clear that better working conditions are also profitable for the company. Occupational hygienists are qualified to do an excellent job in their discipline. But to communicate the benefits of occupational hygiene to decision-makers is often not jet one of the priority items in our occupational hygiene activities. Fact is that the current state of methods of cost-benefit analysis does not always give conclusive answers to the question whether occupational hygiene is a benefit activity for the company. Much more information is needed to establish convincing data which will allow quantifying the benefits. Especially the issue of social and human values has to be incorporated into the calculations.

A significant amount of costs of occupational diseases in the industrialised countries is indemnified by social insurance systems. Not all of it can be traced back to specific contributors. If a firm pays a fixed premium for workers compensation irrespective of its own claim rate, there will be little financial incentive to improve conditions.

What about workers who are suffering from illnesses or injuries? Here I would like to quote a paper written by Peter Dorman and published by ILO (2). Two studies one for Australia, the other for British Columbia show that nearly a fourth of all recipients of workers compensation are ultimately ending on the welfare roles. This represents a tragedy for the workers involved and also shows that part of the economic cost is being shifted finally to the general taxpayer.

The ILO-paper says, there is a large literature devoted to calculating the cost of injury and disease, but with many disputes

over methodology. Additional studies are needed to make it a useful tool.

I can fully confirm the findings of the ILO-paper on existing literature concerning cost calculation. When we search the internet under “cost and benefit of occupational safety and health” we shall find a lot of literature dealing with this subject. But a clear concept is not yet recognizable.

Now I would like to go to one more ILO paper. On the Session of the ILO Governing Body in 2006 a document on occupational safety and health was issued (3). It discusses how improved occupational safety and health (OSH) contributes both to reducing human suffering and also to increasing the quality and quantity of jobs. Several activities are formulated, such as:

- Governments should commit themselves to the principle that “safety pays”. Ministries of labour, for example, could collaborate with ministries of trade or with ministries of industry to determine and publicize the cost of accidents and ill health.
- Lawmakers in concert with public and private insurers should strive to ensure that costs of work-related injury and ill health are kept internal to the enterprises responsible.

Further proposals made in the ILO-paper:

- A high priority needs to be given to OSH within national educational curricula and awareness-raising programmes.
- OSH professionals need to make better use of the broadcast media to reach and influence audiences.
- The national enforcing authorities should also be adequately resourced, so that such legislation can be effectively and consistently enforced.

- **Multinational enterprises do have a major influence on working conditions in the factories of their exporters in developing countries. That means corporate social responsibility (CSR) is an important contribution to improve occupational health and safety on global level.**

All these proposals could be very helpful. But we know that the real world is full of obstacles.

Managers do fear that the recording of unhealthy working conditions may stir-up the workforce and causes discussions e.g. with the union. Here, the management strategy is to avoid the topic and discourage the occupational hygienist to take his/her job too seriously. Just a couple of months ago I heard exactly such an argument from a manager of a large-scale kitchen.

In the framework of a litigation I had to assess the working conditions in that kitchen. The number one problem was the high temperature, which I could confirm at the very moment when I entered the room. The manager who came along told me not to be too strict, as he had the temperature problem already under control. My comment has been, this is not possible, because the extreme heat is still present. He smiled and said, this is right, but the workers are no longer complaining since he had now hired people from Nigeria who are familiar with high temperatures. This is an example to bring precarious employment into a developed country.

Coming back to the Peter Dorman ILO-paper (2), this paper gives also useful information on economic costs versus noneconomic costs. Without going deeply into the specialities of the economic theory, it is enough to say that economic costs are those which can be expressed in monetary units. They include the costs paid or expected to be paid by individuals and organisations implicit in activities undertaken. Noneconomic costs are no less real, but cannot be captured in monetary terms. In the case of injury and disease, the noneconomic costs are costs of pain, fear and loss suffered by the victims and by their families.

Confusing for me was also the outcome of meetings which I had with several owners of small companies. In principal some of them did not dislike my proposal to invest in occupational health and safety. Later on, when I contacted them again, they informed me that they failed to borrow money from their banks for this kind of investment.

A friend of mine who is bank manager was the next person, I got in touch with. I had to find out why banks are not willing to make funds available. His answer was very simple: The availability of bank's money depends on the ability of the borrower to secure the loan. In other words, money will only flow when the borrower is able to put assets behind the promise to repay. A bank is much more willing to grant a loan out of which investments are secured, for example, secured by material, by patents or by finished goods. For occupational health and safety investments the situation is different. Here the asset is primarily the workforce and human beings cannot be offered to secure a loan. A company does not own its workers. Thus investments in occupational health and safety will be an investment in human capital which is too risky on the financial market.

So, in summary one can say that the understanding for benefit and good working conditions is growing. But it is a long-term activity and how to include prevention into the work process does not show a clear strategy. Even very strange ideas are being developed. A researcher was very proud when he presented to me his prevention concept on occupational health. His idea was to determine – first of all - the genetic code of the worker. If the outcome shows that the worker might not have an adequate resisting power against certain chemicals, then the worker will not get the job. That means prevention by selection. I was not amused.

A couple of months ago I had the opportunity to meet the general manager of a company in Germany who was interested to enlarge occupational safety and health. He was very much alerted when I explained the benefit of occupational hygiene when this becomes part of occupational health and safety.

He was also interested to see the website of the German Occupational Hygiene Society. There we tried to find information on occupational hygiene and cost benefit. There was nothing.

The next website which we accessed was IOHA's. Nothing on cost benefit.

After a nice cup of coffee the manager came to the point, he looked at me and I shall not forget his words. He said: My dear friend, the German Occupational Hygiene Society and the International Occupational Hygiene Association do present themselves like closed shops. The information given on their websites is well compiled, it sounds honourable, but it is far away from convincing a manager who has to run a company, who has to generate profit and who has to keep the share holders happy.

This was a clear message. And I think we have to get rid of a closed shop image and we have to show that occupational hygienists are able to do more than conducting exposure measurements and writing reports with a lot of statistics.

Back in my office, I got thoughtful. I remembered that during my term as officer of IOHA and of the German Occupational Hygiene Society, I was also responsible for the websites of these two organizations. And I have to admit that I liked the websites very much. But now I realize that our websites are not only a tool to keep occupational hygienists happy; with our websites we have to keep many other persons happy.

The period of reflection in my office brought my attention also to a pile of occupational hygiene journals. I tried to find publications on control measures and on cost benefit. The outcome was not convincing.

And honestly we have to admit, that sometimes the preference of occupational hygienists is identifying and evaluating occupational exposures. These occupational hygienists miss the opportunity to promote the available knowledge on hazard prevention and

control technology to actual workplace situations. For us there is time for action.

Many tools are available which we can apply. There is great stuff, such as occupational safety and health standards, documentation on risk management and risk communication, documentation on control measures. Occupational hygienists should also learn how to include managerial concepts into their work.

But regardless of the qualification and the capabilities of occupational hygienists without tailwind from government we may run against stonewalls. Even with existing legal requirements on occupational health and safety, there is not always a place for occupational hygiene. Here I refer to the so-called Framework Directive of the European Union on safety and health of workers and I refer to the implementation of this Directive on national level (4). The Directive requires that a competent person has to be designated by the employer to carry out activities related to the prevention of occupational risks.

European Directives have to be transposed into national law, but not word for word. So the national government can decide what a competent person is. In several EU member countries the government prefers the multidisciplinary approach; this means it is up to the employer to select the competent person according to the task, for example: safety expert, toxicologist, ergonomist, occupational hygienist, physician. The German Government, however, prefers a different approach. It has determined in an act that the company must have a medical doctor and a safety expert (5). With very few exceptions we see in Germany just the medical doctor and the safety expert taking care of occupational safety and health. The exceptions are large companies which are active as global players; these companies use the concept of the multidisciplinary team. They understand cost benefit and in these companies the occupational hygienist is part of the occupational safety and health team. And I am convinced that an occupational safety and health expert can only do a decent job when his or her qualification goes with the task.

Concerning the situation in Germany the Federal Institute for Occupational Safety and Health has stated (6): More than 90 % of employees in Germany work in SMEs and are only reached in part by the traditional structures of occupational medicine and safety or not at all. In these companies the occupational safety and health structures have hardly been developed and only play a minor role in company policy. Just to make it clear, this statement - that employees in SMEs are only reached in part by the traditional structures of occupational medicine and safety or not at all - this statement came from an official federal agency in Germany a few weeks ago.

But irrespective of national peculiarities we can observe on international level much tailwind for occupational hygiene. Such as the Dubai declaration on “Strategic Approach to International Chemicals Management (SAICM)”. (acronym). This Declaration was adopted 2006 in Dubai (7). Participating organizations were such as UNEP, ILO, WHO, OECD, World Bank. The scope of SAICM deals with chemicals and includes the environmental aspects, economic aspects, social aspects, health aspects and labour aspects. Risk reduction is a key element of SAICM. The Declaration is full of tasks for experts with occupational hygiene background.

Like many other Declarations also this Declaration looks good on paper. But one is never sure how much acceptance a Declaration will find. Sometimes even the best-sounding declarations are consigned for the dustbin of history. For me it has been a very positive surprise when I saw the Declaration considered in a Regulation of the European Union. This EU-Regulation deals with the “Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)” (8). (acronym). The Reach-Regulation amounts to 850 pages. Not everybody is happy to cope with that much paper. Occupational hygienists, however, should be very happy. As without this discipline, REACH cannot be handled. And we should take into consideration that an EU-Regulation is a legislative act of the European Union, which without any changes becomes enforceable as law in all EU member countries simultaneously.

By the way additional activities on occupational health and safety take place in the European Union; the Council of the European Union has recently adopted a Resolution on a new Community strategy on health and safety at work (9). This strategy covers the years 2007 until 2012 and I am convinced, it will be a real step forward to improve the working conditions.

As already stated at the beginning I had addressed several people; managers, workers, union members, occupational hygienists, physicians, safety experts, and others. It was interesting to observe the different attitudes. I had the opportunity to meet a whole range of characters. Some were talking only about profit and share holder value and they told me that they would never hire an occupational hygienist. I met many persons who will invariably do only the minimum required to comply with any regulation. I also met interlocutors not fully accepting my opinion on cost benefit concerning occupational hygiene, but nevertheless they were at least willing to think about considering occupational hygiene measures. I also met some bosses who were very open to occupational hygiene and especially to the idea that not only the economic cost has to be included into the cost benefit calculation, but in addition the noneconomic cost such as cost of pain, fear and loss suffered by the victims, and their families.

Now it is getting sophisticated. This is the point where I have to include into my consideration the philanthropic aspect. Philanthropy is the effort or inclination to increase or at least maintain the well-being of humankind. It is an altruistic activity which is intended to promote human quality of life. Philanthropy is located between the two poles of social value and economic value. Fact is that measures of economic value are well standardized and are the basis for most financial activity in the world. In the social value arena we deal with factors beyond measurement. Some people do understand that these factors are of value; for other people they are not worth at all to be considered.

Why are people acting so differently? What do people have in mind?

Here I quote again Marc D. Hauser; at the beginning of my presentation I had already mentioned this American scientist who is expert in organismic biology (1). He states that our biology sets up a range of possible behaviours and if a biological perspective on morality is true, then the moral principles must be encoded in the DNA; some genes are for harming, some genes are for helping. In addition moral decisions are influenced by education, by training and by the society which determines what is right or wrong.

I will not go into further details on genes and education. I know when I am referring to genetics that I am moving on ground which is not my strong point. But I think we should consider the genetic aspect when we have to deal with our bosses. It might at least help us a bit to understand the behaviour of people when they are confronted with economy and social value. But if they are born without a moral compass and if their genetic code does not have a place for social value, then one needs more than the usual means to make the boss a friend of better working conditions for the employees. It might be that economic incentives, for example bonus programmes sponsored by government or insurance companies, motivate the bosses to improve occupational safety and health (10). But it might be that somebody has to determine what is right or wrong; these additional means are rules, are regulations, is enforcement and finally sanctions are needed.

But even in situations when we are dealing with persons where the economic value is the dominating factor, we should never give up to work on understanding, to establish common ground and to build consensus.

Bibliography

- 1 **Marc. D. Hauser: Moral Minds.** HarperCollins Publishers (2006) New York.
- 2 **Peter Dorman: The Economics of Safety, Health, and Well-Being at Work.** ILO InFocus Program on SafeWork (May 200) Geneva.
- 3 **ILO Governing Body, 295th Session: Occupational safety and health / Synergies between security and productivity** (March 2006) Geneva.
- 4 **Council of the European Communities: Introduction of measures to encourage improvements in the safety and health of workers.** 89/391/EEC. Official Journal of the European Communities No. L 183 (29.6.89).
- 5 **Act on company doctors, safety engineers and other experts for safety.** Bundesgesetzblatt 1 (Federal Law Journal), page 1885 (12.12.1973).
- 6 **BAuA: Working programme 2007-2010,** Federal Institute for Occupational Safety and Health, March 2007, Dortmund, Germany.
- 7 **Strategic Approach to International Chemicals Management Comprising the Dubai Declaration on International Chemicals Management, the Overarching Policy Strategy and the Global Plan of Action.** Issued by the secretariat for the Strategic Approach to International Chemicals Management (June 2006) Dubai.
- 8 **REACH: Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals.** Official Journal of the European Union No. L 396 (30.12.2006).
- 9 **Council of the European Union: Resolution on a new Community strategy on health and safety at work for the years 2007 to 2012.** 2007/C 145/01. Official Journal of the European Union No. C 145 (30.6.2007).
- 10 **Effectiveness of economic incentives to improve occupational safety and health.** Workshop organised by the European Agency for Safety and Health at Work (September 2004) Amsterdam. <http://osha.eu.int>.

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