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EXPERIENCE WITH THE IMPLEMENTATION OF A CO-OPERATION NETWORK IN GERMANY: AN INNOVATIVE APPROACH TO HAZARDOUS SUBSTANCES MANAGEMENT FOR SMALL AND MEDIUM ENTERPRISES (SME)

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Abstract - Adequate management of hazardous substances in SME has to be considered as a great challenge throughout the European Union. Experience has shown that SME, and in particular micro-enterprises and small enterprises, usually do not deal properly with these substances. Therefore, the main objective of the German project "Hazardous Substances under Control" was to establish a network of those supplying advisory and implementational knowledge in the field of hazardous substances management (service providers) and those requiring this knowledge (customers). Furthermore, the target group benefits of the network activities should be evaluated in their initial tendencies.

A nationwide network and two exemplifying regional supporting structures for building cleaners and physicians have been established.

The following critical factors for success concerning the network establishment could be ascertained: high degrees of interpersonal relation work, more tightly focused selection of partners and recruitment of key personalities, clarification of conflicting interests and benefits at an early stage and paying attention to reciprocity. An Internet platform (www.gefahrstoffe-im-griff.de) was developed as well. It offers a collection of existing high grade online tools and information by many different organisations and bodies in the area of hazardous substances.

Further activities are planned to establish or enhance local supporting structures depending on the experience made.

BACKGROUND

Concerning the dealing with hazardous substances the EC framework directive 98/24/EC is binding for the member states of the European Union. The requirements it contains have been implemented by the member states over the past few years in terms of national law. In Germany an amended ordinance which incorporates the directive has recently been adopted. In connection with the Occupational Safety and Health Act, primarily the employer's obligations to exercise care and to protect are laid down. When implementing these obligations, the state has a duty to advise and monitor. Thereby, it is supported by the public accident insurance institutions.

Problems for small enterprises

In practice, however, a large number of difficulties arise in the implementation, especially in terms of Hazardous Substances Law. Hazardous substances constitute a complex set of problems at the workplace. These cannot always be satisfactorily resolved, even for specialists (European Agency, 2003a). According to this, hazardous substances were a focus of the European year 2003 and were the subject of numerous activities at national theme weeks.

We know from experience that small and medium enterprises in particular, so-called SMEs, can hardly handle the matter of hazardous substances because the responsible persons or those involved often do not have adequate information, or they do not recognise and are not aware of dangers as such. Furthermore, there are uncertainties in the practical implementation owing to inadequate qualifications. This problem area is intensified in micro-companies with only very few employees (e.g. Voullaire & Kliemt, 1995; European Agency, 2003), but small business does not seem to be the only reason for inadequate safety management (Larsson, 2003).

Problems concerning the OSH system

But there is also something not quite right with the support provided to companies: On the one hand, neither government nor accident insurance institutions have the necessary resources to advise every individual company comprehensively and to accompany them in the implementation. On the other hand the structures of the many institutions often prove to be not particularly efficient in the field of occupational safety and health, with a lack of division of functions and a lack of information exchange, etc (Pieper, 1998; Sochert, 2002). This leads, for example, to major problems for owners of a small craft company: They no longer have a clear view of who is responsible and where; from their point of view, the number of bodies he has to consult with his concerns is growing. This means that micro- and small enterprises – and they make up nine out of ten companies in Germany – are simply out of their depth for the most part.

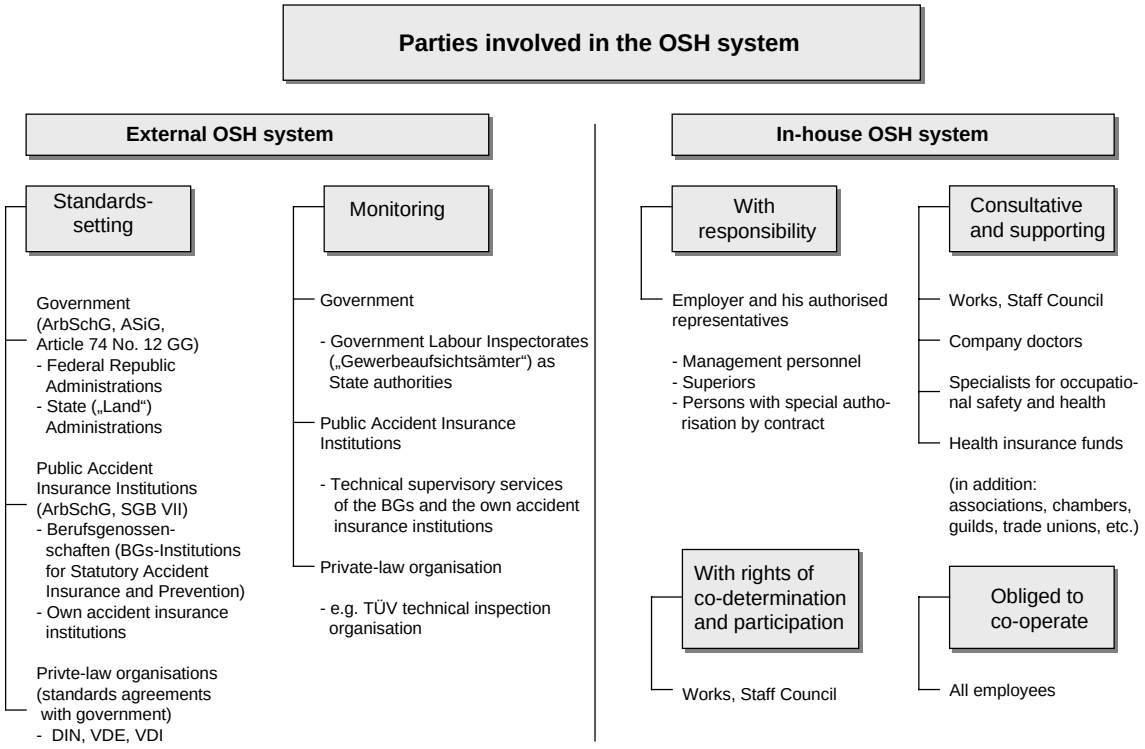

Figure 1: Occupational Safety and Health System in Germany
(schematic presentation, modified according to Kiesau, 1995)

Fig. 1 highlights the complexity of the German occupational safety and health system with its supporting and monitoring structures. Many of the bodies listed there have already developed solutions and practical aids for hazardous substances management - among other things. But normally there is insufficient exchange of information about it. The transfer to corporate structures also tends to be inadequate. Employers and their employees think in terms of their work processes and work with their own conceptual world, and not with the conceptual world of occupational safety and health experts.

The German project "Hazardous Substances under Control" takes off precisely where the previous remarks leave off. It has set itself the goal of combining the many possibilities currently in existence, of making them available and of establishing regionally networked support structures. There are a number of target groups: on the one hand the employers responsible and their delegated representatives, as well as the institutions involved who have to support and monitor the companies in hazardous substances management.

Method

Establishing the network and supporting structures

Concerning the establishment of OSH networks we have been able to refer a little to our own research results. Seiler (2004) has compiled relevant influencing variables and recommendations for implementing and managing networks. Therefore, the following recommendations therefore have been taken into account to realise the network "Gefahrstoffe im Griff" (hazardous substances under control):

- Make a sufficient plan at the preliminary stages and anticipate the effects of the relevant general conditions;
- pay attention to an adequate selection of the network partners (keywords: orientation of cooperation, powerful promoters, commitment and motivation of potential partners, etc)
- Harmonize the different working and organizational cultures of e. g. occupational safety and health experts and corporate practitioners;
- render the mutual benefit transparently;
- involve "key persons" who are accepted by all sides;
- Pay more attention to active relationship management among the actors,
- Ensure reciprocity within the cooperation network, i.e. by taking into account an appropriate relation of giving and taking (however, this should not only be related to the extrinsic perspective; if network participants are intrinsically motivated towards networking, the recommendations may also be balanced - possibly even a higher voluntary commitment takes place);
- outline potential problems at an early stage, e.g. in the framework of initial network meetings and describe such problems as rather 'normal' concerning co-operation networks (e.g., conflicting interests, typical crises in networking, distinguished cultures of work and work approaches, ambiguity of evaluation objectives); all in all, this serves the creation of so-called "network competence";
- do not "overload" the network: excessive demands on networks (e.g. by too high claims, by frequent meetings) restrain innovations instead of promoting them - also an open-minded learning culture should be communicated („learn to learn about yourself“);
- enable reflection processes, e.g., about the achievement of objectives as well as about the network interaction, before conflicting discussions escalate;
- pay attention to a standardized information and communication technology or create it for the network interaction - thus, it is to be guaranteed that every network partner receives and dispatches messages and is able to open and work with shared documents etc..

The plan was to start with two operative levels: on the one hand regional networks had to be established to support the management of hazardous substances, and, on the other hand, a nationwide network of experts who can provide their information and instruments was to be launched. In parallel, all useful experience accumulated, guidelines and instruments found during the networking process are to be represented on a communication and information platform via Internet.

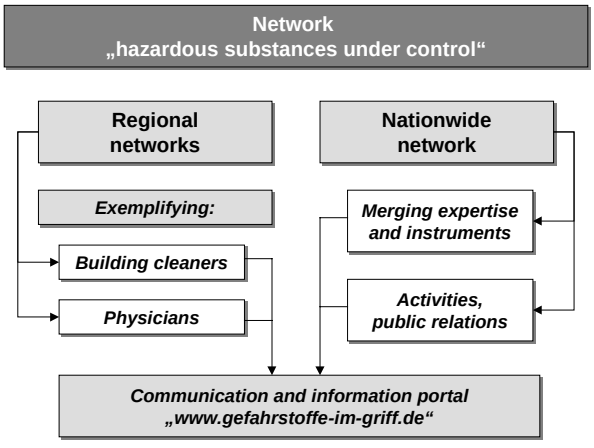

Figure 2: The structure of the network "hazardous substances under control"

Assuming that supporting structures for small enterprises would operate more sustainably in regional networks, two exemplary models have been established (see figure 2): a regional collaboration network concerned with building cleaners and another for physicians. In order to achieve these aims, particular attention has to be drawn to the selection process, especially to finding out local promoters in relevant institutions and to the negotiations about advantages and benefits of potential collaborations.

Primarily, the following steps have been implemented:

- selection and approach of potential partners (trade associations, representative bodies, etc.),
- organisation of a kick-off meeting with trade associations, guilds, experts and other relevant groups,
- organisation of local events with employers,
- counselling of employers within the region and improving their use of the Internet platform,
- regular meetings with the agents of the regional support structures,
- marketing and public relations in magazines, which are relevant to target groups.

Realising a supporting Internet structure

As it has already been outlined, an Internet platform has been set up in parallel, intended as it is as a supporting instrument for all those involved in hazardous substances safety: For corporate practitioners in that practical aids specific to occupational groups have been made available, and for occupational safety and health experts in that the portal provides a systematic reference work. The URL is: "www.gefahrstoffe-im-griff.de".

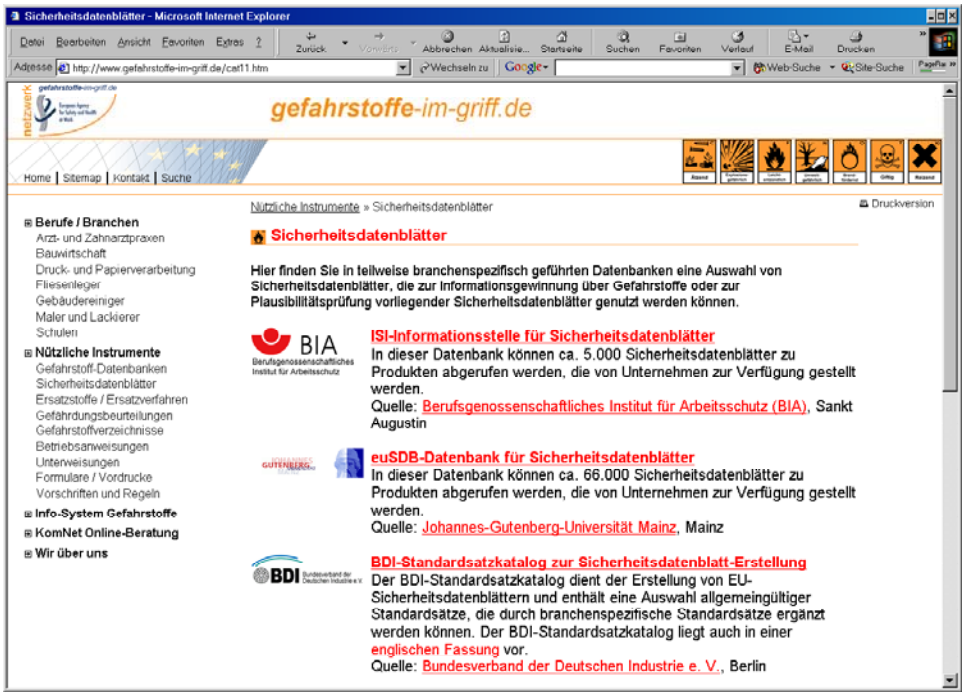

Figure 3: Site example of the Internet portal “www.gefahrstoffe-im-griff.de”

For this purpose a large number of institutions were contacted throughout Germany with the aim of combining and connecting their practice-related supply in a meaningful way. This was accompanied by many public relations measures. Thus, it was possible to set up a national "virtual network".

The portal is structured in such a way that first solutions specific to occupational groups are presented on the left-hand navigation bar as the topmost information possibility. This is followed by general offerings – for example databases and collections of safety data sheets, lists of hazardous substances, operating instructions, etc. In addition, a search engine is integrated which only searches for documents and files on quality-assured Internet sites relating to occupational safety and health. If the information search regarding a certain problem is still unsuccessful, there is the possibility of obtaining an answer via the system KomNet. There, the enquirer can submit an anonymous question, which then will be answered within a short time free of charge by a network composed of occupational safety and health experts.

Evaluation

The network and the network outcomes were mainly evaluated by methods of qualitative research (e.g. used by Seiler, 2004).

For this purpose a structured interview manual was developed to be used after a reasonable duration of experience (approximately 2 months). It included items regarding the estimation of the regional supporting structures and concerning the Internet portal. The following questions were asked by four network partners who were trained in conducting qualitative interviews. The first three items (a - c) focused on the implementation of the network's recommendations concerning hazardous substance management and the others (d - h) focused on the use of the Internet platform: a) "Have you been able to relate to the procedure?", b) "Which useful contacts did occur due to the network support?", c) "Which measures have you already realised?", d) "How often have you been using 'www.gefahrstoffe-im-griff.de' yet?", e) "How easy is the orientation (navigation) concerning the Internet platform?", f) "Is the content you find on 'www.gefahrstoffe-im-griff.de' easy to understand?" g) "Have you already used some tools of the Internet platform?", h) "Which content have you missed, what should be added or changed?".

Thus, 20 replies by representatives of the main target group (employers or their delegates) could be obtained and then interpreted by methods of qualitative content analysis (see Mayring, 2002). They were chosen from the group of 20 SME, which had been involved into an intensified consultation process by the network partners (12 building cleaners and 8 physicians).

Moreover, regular exchanges of experiences among the project partners were organised to gather relevant clues to the network interaction and the present network outcomes.

The evaluation of the nationwide virtual network has been carried out by analyzing the content of respondence of users and practitioners (e-mails and letters) to the network partners. Thus, 25 e-mails and letters were analyzed. For this purpose, a general classification of the appraisals (positive or negative) in the content was made.

In addition, the access statistics of the Internet portal has been analysed. Furthermore, regular exchange of experience on project team meetings was documented.

Results

How are the results of the evaluation regarding the effects of regional networks and the information available on the Internet portal? As above mentioned, they were obtained by means of structured interviews on the basis of qualitative data.

The vast majority of the interviewed practitioners lauded the approach related to practice. Furthermore, the collaboration of government authorities and employer associations has been looked upon favourably by all participants. All in all, it was asserted, that many valuable contacts emerged from networking and that the people now know each other personally. Herewith, prejudices on governmental inspectors could be removed. Thus, 10 employers from the network region turned directly to the partners for advice.

90 percent of the 20 surveyed SME declared that they were able to relate to the imparted procedure of managing hazardous substances. Furthermore, 15 of them emphasised that useful contacts occurred during the network support, especially among labour inspectorates, guilds and chambers of trade. The most frequently realised measures within the interviewed SME have been the collection of safety data sheets and the compilation of operating instructions concerning the relevant hazardous substances. The evaluation shows that both the gradual approach of mastering hazardous substances in practical experience and their documented equivalent on the Internet could be improved continuously by the help of the participating enterprises and guild representatives. At the end of the advisory process most enterprises involved tightened up their management of hazardous substances and their prevention. Furthermore, durable relationships were established between the main actors – state departments, chambers of small industries and skilled trades, guilds and enterprises.

Nationwide, a lot of bodies and organisations in the area of hazardous substances could be virtually linked with their tools and information provided. Altogether, over 60 of them are linked to the portal, e.g. public accident insurance institutions, associations, chambers, guilds, trade unions and private-law organisations. Although the majority of them were selected by the project team, a couple of these organizations contacted the network themselves.

Regarding the Internet platform, the critical factors for success were the development of design and navigation in collaboration with the network actors. Thus, a structure specific to the target groups could be achieved. Furthermore, reduced editorial effort was reasonable by using existing high grade Internet resources of partners and others as well as by providing content which is highly relevant to practitioners. Access figures (figure 4) reveal its growing popularity.

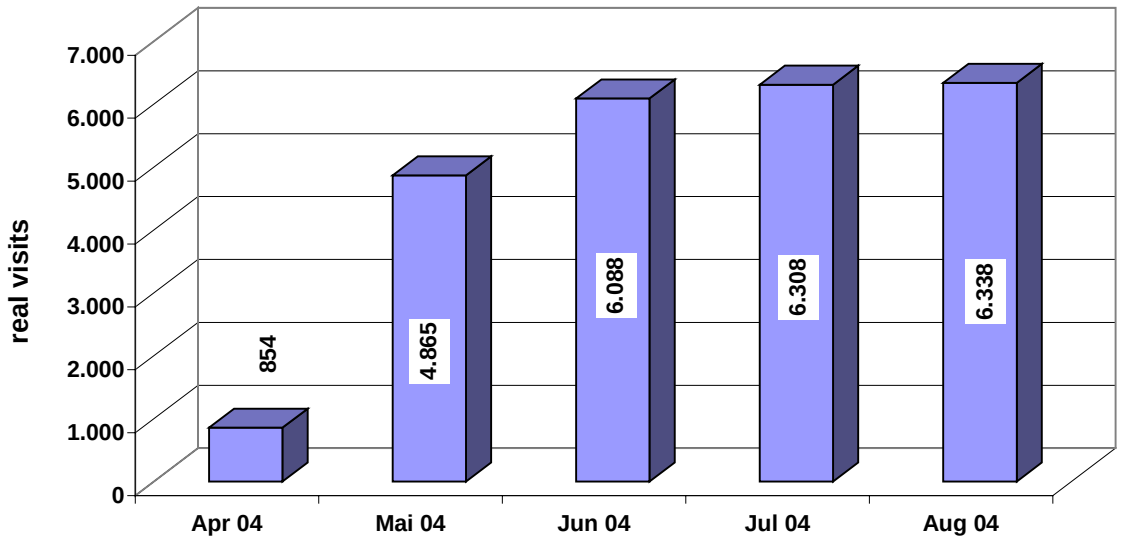

Figure 4: Real visits per month since the official release from 14th April, 2004 to 31st August, 2004

Moreover, positive feedback came from many occupational safety and health institutions and consultancies to this compilation of available supply, which is - concerning such an approach - unique in Germany.

Table 1 describes the results of the analysed unsolicited mail respondence regarding the Internet platform. 23 of them lauded the Internet platform in different ways.

Table 1: Unsolicited mail comments concerning the Internet platform during the project time (n = 25)

Type of institution	***Positive respondence***	***Negative respondence***
SME	*6*	
Consultancies	*5*	
Official bodies	*9*	*1*
Others	*3*	*1*
Total	*23*	*2*

DISCUSSION AND CONCLUSION

As positive effects of networking could be realized, they can be ascribed to high degrees of interpersonal relation management, more tightly focused selection of partners and recruitment of key personalities, clarification of conflicting interests and benefits at an early stage, and attention paid to reciprocity.

The chosen methods of evaluation represent merely qualitative approaches and therefore, the effects of the regional networks also should be measured by collecting more objective data, e. g. by long-term inspections in those companies which used the supporting structure of the network.

But considering the short duration of the project (9 months) and considering the time, that is needed for realising measures of dangerous substances management, such evaluation would not have been very meaningful. However, the qualitative information we obtained reveal that the network activities have had positive transfer effects within SME.

Nevertheless, setting up regional support structures is laborious and depends - among others - on convincing so-called 'key persons'. But it is worthwhile to network with, for example, guilds, chambers of crafts and other contact bodies and areas of expertise to enable small companies to obtain support as easily as possible. For example, guilds can maintain a service for member companies and besides, barriers to contacts with occupational safety and health institutions can be broken down. The platform for support already exists. Here all those involved can retrieve compact information and practical assistance in a manageable way and, for example, supplement their regional contact addresses as they require.

It was helpful that within the project we were not forced to re-invent the wheel, but that we were able to resort to proven means and to intensify contacts – a shared benefit for all parties involved. Due to the very short project term, only initial activities concerning the sustainable establishment of the regional networks could be carried out and have to continue after the end of the project. This means that the project team is not able to report long-term effects of networking, but only short-term effects, although they are auspicious.

It should, however, be pointed out that direct corporate consultation on the spot is still desired by many company owners. At present, Internet-based offerings therefore still provide small companies only with supplementary, not exclusive information paths. In view of this, the Internet can only provide a sensible addition.

The aim now is to continue to secure the network's sustainability. The collection of practical aids for the Internet portal will also continue. Furthermore, after the end of the project we will check how far national experience with this approach can be transferred to the European level.

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