Future research needs –
Designing pilot projects on collecting information on specific equipment from the workplace

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Identifying the need

From the title, the topic appears quite straightforward, and yet it is anything but ! It is easy enough to provide an immediate answer from a particular point of view, but then on reflection, a number of different perspectives begin to emerge. The answer given for the researcher will differ from that for a collaborator or a member of a standards committee. Although there may be others, these are the perspectives that will be considered in turn in this presentation. Other fundamental issues are how the problem with a piece of equipment, and the need for further investigation, have been identified. It is suggested that there are three possible opportunities for research needs to be identified, as shown in Figure 1 and links between these can provide an opportunity for "triangulation". Such an approach can help question whether this is a local concern or whether is it one that is affecting a much wider working population.

Research requirements

Once an area for further investigation has been identified, then the "ideal" design of the project may differ according to the perspective of the person involved. For the researcher, the role that I am most familiar with, the following factors are suggested as being significant for the success of the project :
- The level of resources available for the project.
- The commitment of a "champion" within different arenas who will support the project.
- The quality and ease of access to appropriate collaborators.
- A flexibility on the part of the researcher and their methods to adapt to changes to the project during its life span.

Identifying "champions" is a key stage, as they may influence the level of resources available either directly to the researcher for the programme of work, or indirectly by allowing access to target areas and other collaborators. The champion may be within a trade union organisation, a government body or an insurance group, as the German case studies for the TUTB – SALTSA project have shown. The research programme that is developed to address a problem must consider the resource and access limits that are set at the outset. Also throughout the programme, the researcher must have a reflective approach and develop the programme to respond to the "real world".

Within a project concerned with the collection of information on equipment in the workplace, the collaborators should be the end-users – the workers, their organisations and possibly other research partners. Each of these collaborators will fulfil very different roles, but for each one, certain factors that are important for the success of the project will be the same. These are as follows :
- Clarity of their role, what is expected of them, when and what this entails.
- Sufficient resources particularly in terms of time to be able to fulfil their role.
- Clarity of definitions and terms used within the project, as often there are opportunities for error through poor communication or misunderstanding of terms.
- An appropriate structure for data collection that is easy to use and administer in the varied settings of the project. The structure may be developed for the project or based upon existing tools and frameworks.

Example of a framework – the Participatory Ergonomics Framework (PEF)

For the TUTB-SALTSA project, a number of national authors were commissioned to collect case studies where end-users had been able to participate in the
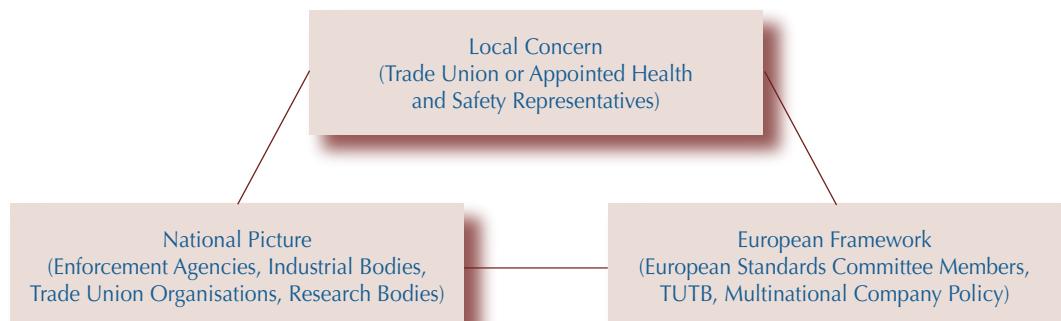
Figure 1 : Opportunities for identifying research needs

Local Concern
(Trade Union or Appointed Health
and Safety Representatives)

National Picture
(Enforcement Agencies, Industrial Bodies,
Trade Union Organisations, Research Bodies)

European Framework
(European Standards Committee Members,
TUTB, Multinational Company Policy)

Figure 2 : The Participatory Framework (Haines *et al.*, 2002)

DIMENSION	CATEGORIES							
Permanence	Ongoing (O)				Temporary (T)			
Involvement	Full direct participation (FDP)			Direct representative participation (DRP)		Delegated participation (DP)		
Level of influence	Group of organisations (GO)		Entire organisation (EO)		Department (D)		Work group / team (WG)	
Decision making	Group delegation (GD)			Group consultation (GC)		Individual consultation (IC)		
Mix of participants	Operators (O)	Line management (LM)	Senior management (SM)	Internal specialist / technical staff (IS)	Union (U)	External adviser (EA)	Supplier / purchaser (SP)	Cross industry organisation (CIO)
Requirement to participate	Compulsory (C)				Voluntary (V)			
Topics addressed	Physical design / spec of equip., places, tasks (PD)			Design of job teams or work org. (DJ)		Formulation of policies or strategies (FP)		
Brief	Problems identification (PI)		Solution development (SD)		Implementation of change (IC)		Set –up / structure the process (SP)	Monitor / oversee process (MP)
Role of ergonomics specialist	Initiates and guides process (IP)		Acts as an expert (AE)		Trains participants (TP)		Available for consultation (AC)	Not involved (NI)

redesign of their workplace or work equipment. To facilitate the collection of data from a number of collaborators, a framework was required. The Participatory Ergonomics Framework (PEF) has been developed in recent years to consider the nature of participatory projects. It was first published in 1998 (Haines and Wilson), but has since been further developed (Haines *et al.*, 2002). This framework is shown in Figure 2. Whilst its initial purpose was to consider the nature and extent of participation, and the methods used in existing projects, it may also be applied to the area of developing participatory projects. Consideration of the various dimensions provided in the PEF and the extent to which the participation of end-users is possible within the project may help to guide the process for future participatory research projects as well as its content. It is acknowledged, however, that the PEF is still being developed, and further refinements are anticipated as it is used.

The main focus of the TUTB-SALTSA project has been to consider cases where end users have not only been able to participate in the redesign of work equipment but also where the insight from their involvement has been taken into a wider arena to influence the standards concerned with that work equipment. Although I have limited experience of the world of standards committees, it would seem that their requirements for pilot projects collecting work equipment data would be different again from those outlined above. It is suggested that the requirements of standards committees from such projects would be as follows :

- The projects should be clearly relevant so there is a need to link research programmes with the standards that are to be reviewed.
- The research needs to be carried out at an appropriate time and this requires co-ordination well in advance of the standards review.
- Research that is undertaken needs to be published and made available in the public domain.
- The application of research should consider the standards setting process as well as advancing knowledge in specialist areas, so giving a wider application for the work.

Summary

In considering the title given for this presentation, a number of different perspectives have been identified each with different requirements for the design of research projects that seek to collect information on specific equipment in the workplace. These different perspectives have been discussed in turn and lead to a number of proposals for improvement.

- Standards committee members are asked to actively engage with research institutes to identify areas for further work and the time constraints. It is acknowledged that in some areas this already takes place, but there is a need for this collaboration to be more widely undertaken.
- Standards institutions should raise awareness of the review and development process for standards, so that end user representatives can engage in a timely manner wherever possible, and research institutions can target the appropriate groups with their findings.
- Standards institutions are asked to improve accessibility to and usability of existing standards to raise awareness and understanding of future research areas.
- Researchers need to gain approval from collaborators to allow publication of the findings, so as to inform the wider community of their work.
- The research community are asked to build a network of both experts and tools to build a people and data resource to support the work proposed above. ∎

References

- Haines, H., Wilson, J. R. (1998), Development of a framework for participatory ergonomics - Contract Research Report 174/1998, HSE, Sudbury.
- Haines, H., Wilson, J. R., Vink, P., Koningsveld, E. (2002), Validating a framework for participatory ergonomics (the PEF), *Ergonomics* 45, 4, 309-327.