

Contribution for

Enterprise for Health Management Conference' in London in Oct. 2008 -
conference guide

Version August 22, 2008

Work Ability – Concept and Assessment

by Hans Martin Hasselhorn, University of Wuppertal, Germany

The European – and especially German – economy is challenged by an ageing workforce due to a decreasing number of young people entering the labour market and because of reduced occupational early exit options. In many enterprises, those aged 40-50 years form the nucleus of the workforce and increasingly, companies are becoming aware of the fact that this cohort will also constitute the core working group in ten years. This leads to the question how to maintain a continued productive workforce in the future. Here, not surprisingly, the concept of 'work ability' attracts attention: what contributes to work ability in the organisation? Can risk factors, risk groups and risk exposures be identified? How can work ability be promoted in an enterprise? And, can the effect of interventions for promoting work ability be assessed?

That is why the 'concept of work ability' and the measurement tool 'Work Ability Index' (WAI) – described below - are gaining increasing attention in European enterprises.

The work ability concept

'Work ability' is of high relevance for each worker and for his or her organisation. According to the Finnish researchers Ilmarinen & Tuomi (2004), work ability may be understood as *'how good is the worker at present, in the near future, and how able is he/she to do his/her work with respect to the work demands, health and mental resources'*. This definition is based on a so called *'concept of work ability'* (Ilmarinen, 2004) according to which, work ability is the result of the interaction of the worker and his or her work. Work ability may also be described as the balance of the workers' resources and the work demands.

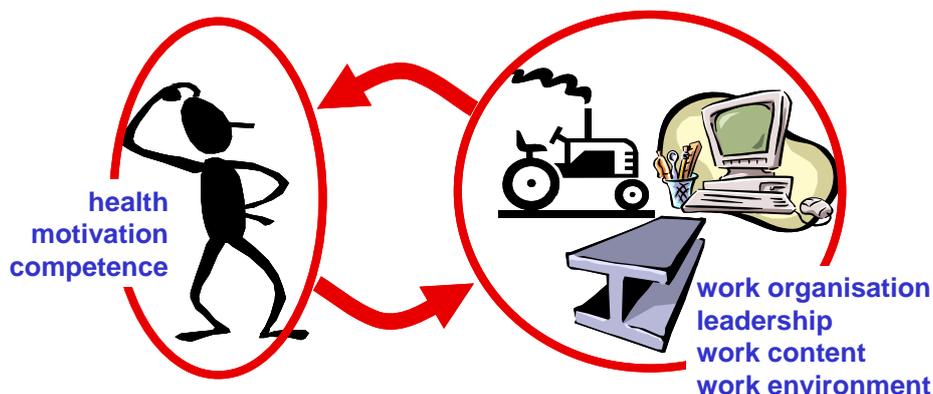


Figure 1: Work ability is the result of the interrelation of the worker and his or her work

The worker contributes to his work ability via his health and functional abilities, with knowledge, skills, attitudes and motivation. The workplace influences the work ability through work organisational factors - especially leadership and management issues - by work demands and by the work environment, including social factors.

Given the increasing necessity of older people's participation in the labour market, the decreasing possibilities for premature departure from working life and also the weakening of the social networks, work ability becomes a more and more relevant concept in Europe.

Work ability is a core resource for every worker, for enterprises and even for national economies. For the older bus driver in Germany, for example, who is required to pass a specific driving assessment every 5 years, his work ability is his passport to continued workforce participation and social status consistency. For his employer, the bus operating company, the work ability of all their workers is fundamental to their business performance. Finally, the combined work ability of the national workforce is a considerable economic factor in a country, as Ahonen and colleagues' findings indicate (2002). The Finnish scientists have analysed the economic effects of activities for the maintenance and promotion of work ability in the 1990s and found them to have been socio-economically very profitable, due to both an increase in productivity and a decrease in premature retirement.

The house of work ability

The translation of the 'concept of work ability' into an organisation may be illustrated by the 'house of work ability' (Ilmarinen 2004). Figure 2 visualises that the workers' health (1st floor) is a foundation for work ability. The 1st (ground) floor can bear the work demands only when enough professional and social competence is available. The relevance of the 2nd floor is increasing in current times when continuous change is becoming a main characteristic of working life. The 3rd floor represents the social and moral values of the worker. Here, respect, esteem and justice play a role as much as commitment to the organisation, motivation and engagement. These values influence the ability and motivation for learning and qualification (2nd floor). The 4th floor, finally, summarises all aspects of the work content (physical, psychological and social demands), the work environment and work organisation. Here, *leadership* has a core influential role, but also work factors such as *possibilities for development* and *influence at work*. Close by are the worker's family, private social life and society, which also have an impact on work ability.

The house therefore combines all those aspects under one roof which are essential for maintenance and promotion of work ability in an organisation. All four floors need to stand in a balanced relation to each other. If work ability is low in an individual or in work groups, all four floors must be considered. Work place health promotion may use the model for a holistic view of prevention, considering and assuring optimal communication between the four floors and mobilising internal and – where necessary – external expertise for each floor. Such a view enables an organisation to react to adverse developments at early stage and to timely implement adequate measures for assuring continued 'organisational health' and for preventing early occupational exit (Ilmarinen 2006).

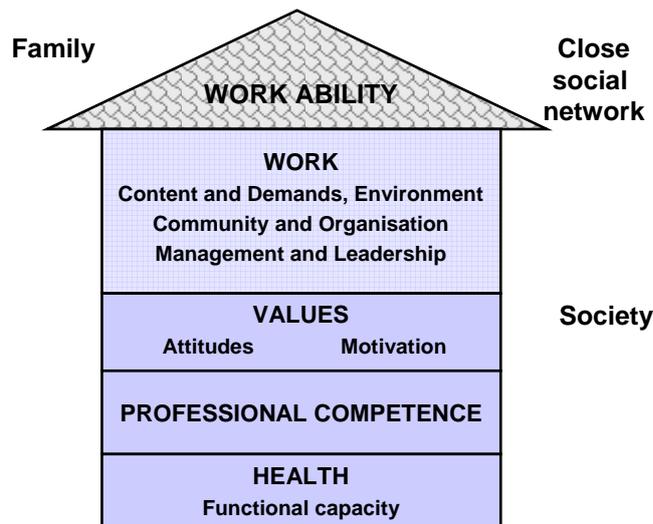


Figure 2: The 'house of work ability' (Ilmarinen and Tuomi, 2004)

The Work Ability Index, WAI

If 'work ability' is such a highly relevant concept as shown above, the question arises whether work ability can be measured and if this measure could be used as an indicator for screening purposes. This way, risk groups at work and adverse developments could be detected at early stage and the effect of preventive measures could be gauged. Both Figure 1 and Figure 2 indicate that such measurement would be very complicated because numerous – if not countless – potential factors among the workers and the workplace determine the employee's work ability. A sophisticated comprehensive assessment battery, however, would not be feasible for screening use in organisations.

In the 1980s, Finnish working life researchers around Juhani Ilmarinen and Kaija Tuomi came up with a straightforward solution. It is based on the insight that only the worker himself could easily summarise the multifaceted contributing factors to his work ability. On the basis of large clinical assessments and statistical analyses, they have identified a short set of questions which finally result in a score indicating the employee's work ability: the Work Ability Index, WAI (Tuomi et al. 1998).

Studies have shown that people with high WAI scores have a lower risk for early retirement and a higher quality of life – even after retirement (Ilmarinen & Tuomi, 2004). Studies using the WAI have also shown that it is possible to sustainably improve work ability – even at older age – if the right measures are taken.

Today, the WAI questionnaire is implemented internationally and has become a methodological benchmark of a comprehensive approach to 'work ability'. It is being used in work place health prevention, in occupational health and re-integration and in science. It may be used for groups as well as for individuals. Today, the questionnaire is available in almost 30 languages.

The content of the work ability index, WAI

Ten questions and a list of diseases comprise the WAI questionnaire. The questions and the disease list comprise seven distinct dimensions as listed in Table 1. Two examples for a WAI question are

- ‘Assume that your work ability at its best has a value of 10 points. How many points would you give your current work ability?’ (single question for dimension 1, see Table 1),
- ‘Do you believe, according to your present state of health, that you will be able to do your current job two years from now?’ (single question for dimension 6, see Table 1).

**Table 1: The seven dimensions of the Work Ability Index, WAI.
A score of ‘49’ indicates maximum and of ‘7’ indicates very poor work ability.**

<i>WAI dimension</i>	<i>points</i>
1. current work ability in relation to best ever	0 - 10
2. current work ability in relation to demands	2 - 10
3. number of physician diagnosed diseases	1 - 7
4. work impairment due to diseases	1 - 6
5. sickness absence	1 - 5
6. estimated work ability in 2 years	1, 4, 7
7. mental resources	1 - 4
WAI SUM SCORE	7 - 49

The answers to the WAI questions result in a WAI score which ranges from 7 to 49. A score of 49 points indicates maximum work ability whereas 7 points denote very poor work ability. It shall be noted that ‘poor work ability’ means that the demands of the work and the resources of the worker do not fit together; this may be because of adverse working conditions, limitations on the side of the worker, or both.

Based on large Finnish samples, the Finnish researchers have categorised the WAI results and formulated respective advice. Individuals with top WAI scores ranging from 44 to 49 have an ‘excellent work ability’. Those with ‘good work ability’ (37-43 points) should still consider what needs to be done to keep their work ability high in the future and until retirement. For workers with ‘moderate’ WAI scores from 28 to 36 points the various potential causes for their comparably low scores should be considered to assure continued work ability. Individual as much as organisational factors need to be regarded and ways to addressing this. Workers with less than 28 points have ‘poor work ability’ and measures definitely need to be taken to improve work ability before it is too late and to assure continued participation at work.

What do WAI results mean for the enterprise?

The concept of ‘work ability’ and its measurement is increasingly becoming the basis for workplace intervention design and also for international comparison and co-operation in Occupational Safety and Health issues. It was shown that the WAI predicts retirement due to disability, mortality and quality of life. Work ability is also related to sickness absence and productivity (Ilmarinen 2006). Most importantly, for enterprises, work ability is an indicator of the productivity of its own current and future human resources.

The main uses of the WAI within companies and organisations are (i) benchmarking, (ii) early identification and (iii) measurement of effects. This holds for the whole organisation, work groups and for individuals:

- *Benchmarking* with reference values allows for the estimation of the current and future potential of the organisation
- *Identification* of risk exposures and risk groups *at an early stage*

- *Measurement of the effect of interventions.*

Table 2 summarises the different functions the WAI may have in an enterprise in individuals, work groups and in the organisation as a whole

individual workers	work groups	enterprises
<ul style="list-style-type: none"> • monitoring work ability • benchmarking • identifying need for action at early stage • creating awareness for future work and health • verifying the effect of intervention 	<ul style="list-style-type: none"> • monitoring work ability • benchmarking work groups • identifying need for further assessment • identifying need for preventive action • verifying the effect of interventions 	<ul style="list-style-type: none"> • monitoring work ability • benchmarking companies • identifying risk exposure, risk groups, trends • identifying need for prevention at early stage • verifying the effect of intervention • raising awareness for work ability • providing 'quasi objective' data for discussion of work place health promotion and 'work and age'

Table 2: The different functions the WAI may have in an enterprise.

The WAI is not ...

- an indicator of health, functional capacity or employability

Sometimes, the WAI is misinterpreted as an indicator of the *worker's health*. This is a misconception, because WAI scores reflect the degree and quality of the interaction between work and the worker. The worker's health does play a role here, but it is only one factor out of many (see 'house of work ability'). The same is the case for *functional ability*. A third term frequently associated with work ability and the WAI is *employability*. Work ability a precondition for employability, but employability covers a wider range of policy issues and the labour market.

- identifying causes for low work ability or concrete measures to be taken.

It is a strength of the WAI instrument that it does *not* tell concretely what the causes of low work ability may be and what measures need to be taken. As indicated in Figures 1 and 2, the variety of potential causes is endless and cannot be covered by a screening instrument. Instead, those directly involved may be activated in the course of investigation if the WAI turns out to be low. This is the worker himself and may include the occupational health physician, the superior and other experts within and – possibly – from outside the workplace.

Initiating preventive measures

Active measures are necessary for – in the long run – maintaining and promoting work ability. Work ability needs to be looked at whether it is high or low. Several Finnish studies have shown that work ability can be sustainably promoted – even among older workers. The 'work ability concept' integrates four dimensions where, at enterprise level, interventions are possible: (i) the workers' health, (ii) the workers' competence and motivation, (iii) the work content and (iv) leadership and work organisation. It is important that intervention is ongoing and that it is not limited to one of the four target areas only. Special emphasis is usually put on leadership issues

(Ilmarinen & Tuomi, 2004). (I assume that here, one could refer to Juhanis contribution)

Confidentiality and other ethical issues

A final consideration when using the WAI is that it assesses personal information: Individual results need to be treated in strict confidence and feedback of group results must follow rules that prevent identification of individuals. Data protection always needs to be assured. Confidentiality is the precondition for allowing the WAI to unfold its full value.

References and readings

- Ahonen G, Bjurström LM, Hussi T. Economic Effectiveness of the Maintenance and Promotion of Work Ability. In: Peltomäki P, Hussi T, Julin H, Launis K, Liira J, Räsänen K. Maintenance of Work Ability – Research and Assessment: Summaries. Ministry of Social Affairs and Health, Finnish Institute of Occupational Health. 2002, 33-44.
- Hasselhorn HM, Freude G. Der Work Ability Index – ein Leitfaden. Schriftenreihe der Bundesanstalt für Arbeitsschutz und Arbeitsmedizin, NW Verlag Bremerhaven, 2007, ISBN 978-3-86509-6, 2007. [German]
- Ilmarinen J. Preface. In: Ilmarinen J & Lehtinen S. Past, Present and Future of Work Ability. People and Work – Research Reports 65, Finnish Institute of Occupational Health, 2004; ISBN 951-802-581-9 [English]
- Ilmarinen J & Tuomi K. Past, Present and Future of Work Ability. In: Ilmarinen J & Lehtinen S. Past, Present and Future of Work Ability. People and Work – Research Reports 65, Finnish Institute of Occupational Health, 2004; ISBN 951-802-581-9 [English]
- Ilmarinen J. Towards a Longer Worklife! Ageing and the quality of worklife in the European Union. National Institute for Occupational Health, Helsinki, Finland, 2006 [English]
- Peltomäki P et al. Maintenance of Work Ability Research and Assessment: Summaries. Finnish Institute of Occupational Health, 2004; ISBN 951-802-502-9
- Tuomi K, Ilmarinen J, Jahkola A, Katajarinne L, Tulkki A. Work Ability Index (2nd Edition). Helsinki: Finnish Institute of Occupational Health 1998 [English]

Further information

- German WAI network, www.arbeitsfaehigkeit.net [German]
- Dutch WAI support group, www.blikopwerk.nl [Dutch]