

# Horizontal Career Changes as an Alternative to Premature Exit From Work

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*Certain workplaces are called jobs with limited tenure. Due to physical or psychosocial risk factors, often coupled with qualification mismatches, workers cannot grow old in them. That may lead to premature exit into retirement, to a period of drawing a work incapacity pension or to a long spell of unemployment. A horizontal career change, which enables the worker to move on to a less burdening workplace while preserving social status, is a possible solution. The objective of the “Horizontal career change—a new job opportunity for older employees” project is to develop a model of career changes for workers employed in jobs with limited tenure and to implement it in the form of an information- and communication technology-based tool. Possible applications range from individual career planning, through institutionalized vocational reintegration, to personnel development in small and medium-sized enterprises.*

older workers   premature exit   retirement   horizontal career   personnel development  
employment mobility   ICT tool

## 1. INTRODUCTION

In the European Union, pension reforms aiming at increasing the actual age of exit from employment have been passed in recent years or are underway [1, 2]. Opponents raise qualification and health arguments. The former argument is that it is difficult for the older unemployed to find a new job, especially if their qualifications are low. Working conditions are often not suited for full use of their skills, which leads to depreciation of human capital. The latter argument is that there are still numerous jobs which lead to early wear-and-tear, especially in manual occupations, e.g., roofing and tiling, and in services, e.g., telecommunications and retail trade. That contributes to a

growing heterogeneity in the health status of the older population and decreases the ability to stay in good health until retirement [3]. As a matter of fact, only 33% of new old-age pensioners retire directly from employment, while 22% experience a spell of unemployment before retirement [4]. Between one (according to population statistics and administrative data [5, 6]) and 4.4 years (survey data [7]) can pass between permanent exit from the labour market and drawing an old-age pension. Unemployment, inactivity or other social benefits have to bridge that time.

Insofar as reasons for early withdrawal are demand/qualification mismatches or health impairments (on the latter, see de Wind, Geuskens, Reeuwijk, et al. [8] and Roberts, Rice

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The research described in this paper is funded by the German Federal Ministry of Work and Social Affairs within the initiative “New quality of work” (inqa). The project is administered by gsub, Berlin, and supervised by the Federal Institute for Occupational Safety and Health (BAuA), Dresden. We would also like to thank the German Social Accident Insurance Institution for the Wood- and Metalworking Industry and the German Social Accident Insurance Institution for the Building Trade for their extensive support in the project.

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and Jones [9]), older workers can prolong employment by undergoing retraining to another vocation or profession. The Institute for Work and Health of the German Social Accident Insurance prepared a digital guide (DG) that will help by establishing the idea of a horizontal career change for workers in occupations with task-contingent limits on tenure. Three factors motivate the focus of that instrument. Firstly, demographic change and, at workplace level, ageing workforce create new risks for occupational safety and health (OSH). The DG can tackle some problems in situations when ergonomics and workplace design cannot be improved further. It can also help in creating learning-friendly working conditions. Secondly, demographic change leads to lack of qualified workforce in certain branches or occupations. Part of the predicted shortage can be bridged by training and personnel development of existing employees to find new jobs which match their interests and skills and the needs of their firms. Thirdly, the DG reflects the importance of preventative work as a task of the German Social Accident Insurance.

This paper will depict the concept of horizontal career changes; it will also describe and discuss the functioning of the envisaged information and communication technology (ICT) tool and its applications.

### 1.1. Concept of Horizontal Career Changes

Horizontal career change is an innovative concept which is still not wide-spread. Horizontal careers have been employed for several years in age management research as an alternative to traditional vertical careers which by nature are limited in number. The concept of horizontal mobility is used for describing macrosocial developments within one social stratum or class, or preserving the same social status after a change of profession or vocation [10]. By analogy, horizontal careers would denote a development on the same level of hierarchy (within the firm). Outside of the firm, a horizontal career remains on the same level of qualification (even if the retraining takes place in another field of knowledge), the same level of demands associated with the new job or the same

income level [11]. That development leads to jobs with decreased workload. However, horizontal careers explicitly counter so-called sheltered workplaces which have by nature a de-qualification effect on older workers [12].

The concept of horizontal career changes is a subtype of horizontal careers insofar as it is connected with a shift of the pursued vocation or profession to decrease critical workload. A change of occupation has to be distinguished from a change of tasks within the same vocation or profession, e.g., temporary job rotation within the same, or to a different workstation, connected with low retraining demands [13], job enrichment or specialization like taking on the additional task of a quality control manager by nursing staff, or consultant on cleaners' cleaning and hygiene [14, 15]. Horizontal career changes in the strict sense can entail several forms of personnel development:

- shared career biographies, e.g., a shift from manufacturing jobs to quality control or services, split into operative jobs in the judiciary in the first period of working life followed by a career in the administration (Bögel and Frerichs [16] quote other studies);
- specialist career tracks within a different occupation relying, however, on the know-how accumulated in the first job, e.g., from nurse to case manager [17];
- a horizontal career in a different field, relying on the know-how gained during free-time activities, volunteering or in the family, e.g., from construction worker to customer service in a do-it-yourself store or instructor of apprentices [18];
- second careers in newly created, age-adequate jobs after the expansion of a mechanical engineering firm into new fields of business, e.g., from cleaning to catering, from construction work to energy consulting, from manufacturing to maintenance of special equipment [15, 18, 19].

### 1.2. ICT Tools in OSH and Career Planning

ICT tools are common in OSH. In particular, there exist several e-methods for risk assessment, both at company level and at the level of national

and European OSH authorities, e.g., OiRA<sup>1</sup>, online interactive risk assessment, was developed by the European Agency for Safety and Health at Work. It consists of an online questionnaire, which can be adapted to specific industries. The risk assessment covers physical, environmental and psychosocial risks. After the online questionnaire has been filled in, risks are identified and an action plan has to be drawn up. The target groups are micro and small enterprises.

An ergonomics risk analysis is tested at the Óbuda University in Budapest, Hungary. It integrates paper-and-pencil surveys, measuring bodily functions, an Excel-based risk analysis and three-dimensional imaging [20].

There are also several information technology and online tools applicable in career planning, skills development and job search. AGROTATE<sup>2</sup> is an online job rotation service enhancing lifelong learning in the agricultural sector. The service has been developed in Greece and spread to several other European countries. Farmers who want to go on a training leave for a longer period and unemployed persons who replace them during that time are the target groups. The service consists of an online matching tool and an e-learning platform for the unemployed.

In Hungary, a Career Path Test<sup>3</sup> for secondary school graduates has been developed. Its goal is to prevent unemployment and misemployment. The test measures the personality type and the learning style.

In contrast to the examples in this section and other products available in Europe, the DG integrates health issues, risk assessment and skills assessment in an integrative, interactive instrument for career development.

## 2. DIGITAL GUIDE (DG)

The core piece of the DG is an ICT tool, which includes a database of occupational profiles. For each vocation, the specific workload, requirements, necessary skills and qualifications are

saved. After a user has recorded his or her profile, i.e., qualifications, preferences and possible health impairments, the tool matches the data with occupational profiles in the database. The output consists of a list of suitable new occupations, with a skills result specifying in what areas the user has to acquire new skills or qualifications, and a health result with the physical, environmental and psychosocial risk factors of the new occupation compared to the user's health profile. The output is ranked according to the quality of matching, separately for health, qualification and preferences. The objective is to minimize critical workload, which presumably has led to health impairments in the original occupation, to help employees to retain their work ability and to remain in good health until retirement. Acquiring skills and subsequent searching for a vacancy would be the next steps the user should take with the help of job consultancy services. The ICT tool will be embedded in an information platform on demographic change and regional labour market analyses.

The theoretical concept of the ICT tool is ready. In particular, the variable structure of the personal profile and of the occupational profile has been set. With assistance of the German Social Accident Insurance, data on workload and demands in ~100 vocations are available. The initial version of the database will contain profiles of vocations requiring initial or advanced vocational training, but at first leave out professions requiring a university diploma. The reason is practicability and the fact that the higher the educational status, the less the risk of incapacity for work [21]. A prototype of the ICT tool was developed to evaluate the concept and its technical implementation; individual users tested it.

The prototype of the ICT tool was designed using expertise from industrial and social sciences. The occupational profiles in the database draw on extensive knowledge accumulated by rehabilitation managers from the German Social Accident Insurance. Databases of the German

<sup>1</sup> <http://www.oiraproject.eu>

<sup>2</sup> <http://www.agrotate.net>

<sup>3</sup> <http://ukm.ugurkariyermerkezi.net/abproje/>

Employment Agency were also used. In the full version of the DG, editors could fill in data on occupational profiles. Editors can come from the German Employment Agency, the German Social Accident Insurance or other institutions.

Horizontal career changes shall preserve the human capital investments gained during initial and on-the-job training, preferably match workers' personal interests and diminish health risks encountered in the current job. The recommended career options move workers to search for a new occupation in good time.

The DG on horizontal career changes is primarily designed for small and medium-sized enterprises (SMEs) and for individual users in so-called jobs with limited occupational lifetime. The term is based on the empirical conclusion that in several nonacademic vocations, but also in some academic professions, over 50% of workers do not reach retirement age but drop out via the unemployment, disability or early retirement pathway [22]. The limits are explicitly not connected with the workers' biological age but with the duration of activity in a given job. Those workplaces can be located with the help of administrative statistical data or with qualitative studies in companies. Behrens defined several criteria which determine whether a task can be performed only for a limited period of time. On the one hand, this is physical workload, e.g., lifting of heavy loads, climbing high ladders, demanding high lung performance [22]. On the other hand, some jobs involve mental workload, e.g., high demands for flexibility, cycle times and group work, and obsolescence of IT.

Possible solutions for limited occupational lifetime in certain vocations or professions can lead into different directions; different groups of actors can carry them out.

- Enterprises can strive to solve the problem with internal solutions. On the one hand, they could adapt workplaces to the changed performance level of workers and thus keep them in the same job (solution A). On the other hand, they could adopt personnel development to bring people into new jobs within the firm (or within a network of SMEs, if there is any) (solution B). The promotion of

expert know-how of qualified nurses in a long-term care facility [23] is an example of solution B.

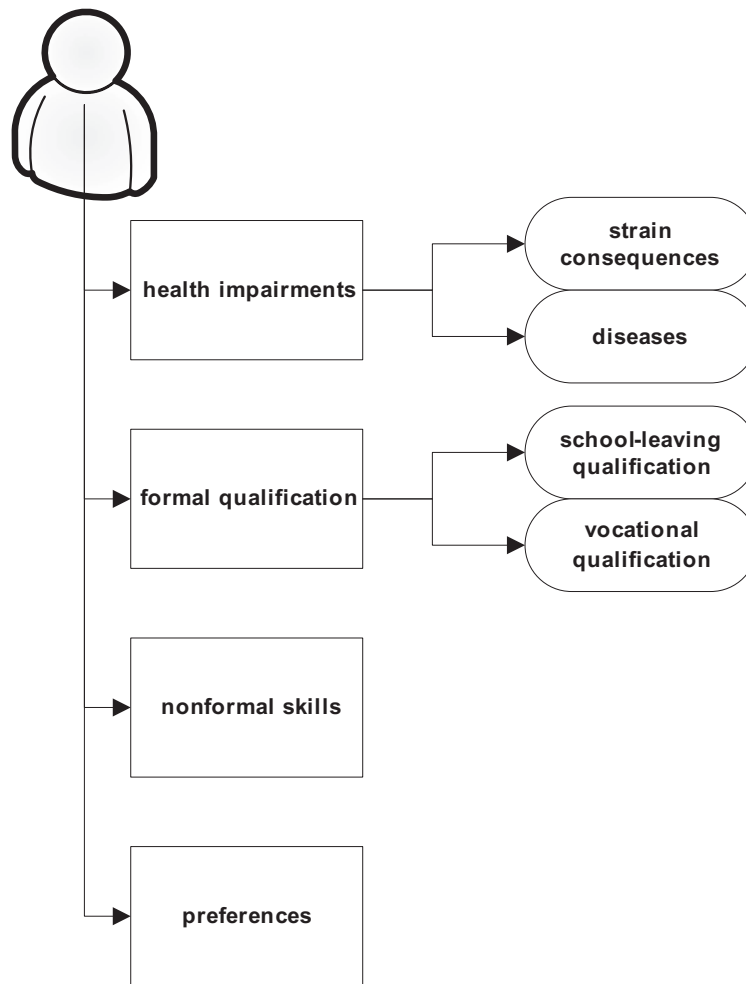
- Statistical indicators for jobs with limited tenure are linked to solution C, which is externalization via different channels (early retirement, work incapacity pensions, long- or short-term unemployment benefits or unemployment assistance, rehabilitation measures, economic inactivity). Workers in occupations with high physical or mental workload and unskilled workers are at highest risk of leaving the job before retirement age [24, 25].
- Individual users can resort to career planning and retraining to learn a new vocation or profession at the same or higher level of hierarchy (solution D). They can do that with the help of consultancy from the employment office, of individual coaches or on their own. In the latter case, the DG would be useful.

Of the solutions described here, our instrument supports solution B, insofar as it concerns a change of vocation or profession and not merely job enrichment, and especially solution D.

## 2.1. Underlying Theoretical Model

The DG records data for personal and occupational profiles. The personal profile will be filled in by individual users (e.g., employees at burdening workplaces, unemployed persons and persons re-entering the workforce following parental leave or illness). Firms can also record virtual personal profiles using the DG. Those virtual profiles could contain information on typical workplaces in the firm and on the associated workload. Figure 1 shows a personal profile and its categories.

*Health impairments* can stem from age or disease. They have differing effects on the ability to tolerate workload and demands. Diseases can greatly hinder the practice of certain occupations. Workload experienced in the current job can lead to consequences with a durably limiting effect on work ability, even though clear disease syndromes might not be discernible.



**Figure 1. Personal profile form in the Digital Guide.**

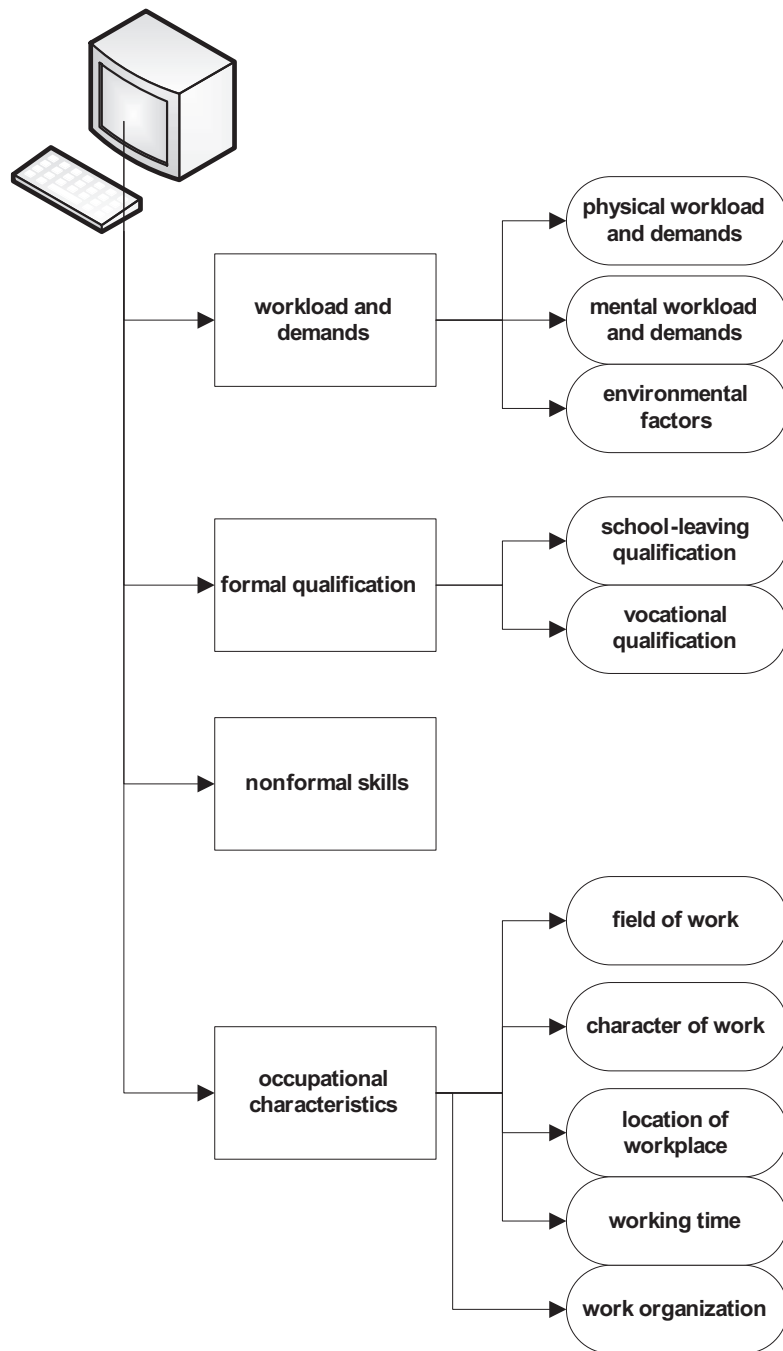
*Formal qualification* is, according to the European Qualifications Framework<sup>4</sup>, the result of a process of assessment and validation in which the institution in charge has determined that the individual learning outcomes meet set standards. In our profile, school-leaving and vocational qualifications supported with certificates or diplomas are recorded. The DG will analyse whether those qualifications held can be partly or completely transferred to the retraining necessary for the new occupation.

*Nonformal skills* encompass knowledge and skills acquired outside of institutionalized learning processes, e.g., on the job or during leisure activities, and which are usually not connected with formal certificates.

*Preferences* describe individual wishes of the user concerning the new occupation. They can be related to the character of work (manual, artistic, intellectual, social); to the field of work (e.g., tourism, manufacturing of glass and ceramics); to the location of the workplace (office, factory floor, outdoors, field service) and to the working time (alternating shift work, night shifts, weekend shifts). It is also intended to give the users the option to decide which of their skills they want to apply in the new occupation. The occupational profile will depict data on occupations with regard to health- and skill-related criteria (Figure 2).

*Workload and demands* in the occupation are objective, in some cases measurable dimensions

<sup>4</sup> [http://ec.europa.eu/eqf/home\\_en.htm](http://ec.europa.eu/eqf/home_en.htm)



**Figure 2. Occupational profile form in the Digital Guide.**

(e.g., loads to be carried). They can be physical (e.g., work in a standing posture), mental (e.g., emotional work) or they can be related to environmental factors (e.g., noise). Depending on the coping abilities and resources of the individual, workload and demands can lead to positive, neutral or negative strain. However, they can also cause negative strain effects in the long run. If such effects are probable, the DG will match

occupations with respective workload and demands from the list of new occupations suggested to the user.

With regard to *formal qualifications* and *non-formal skills*, the descriptions in the personal profile discussed in this section apply.

*Occupational characteristics* are criteria which can be matched with preferences entered in the personal profile on the one hand and which can



be used for clustering occupations into occupational groups<sup>5</sup>, on the other.

Some occupations differ greatly from the trained occupations. That is not surprising as there are ~1 500 trained vocations and fields of study and ~3 000 exercised occupations and specializations in total<sup>6</sup>.

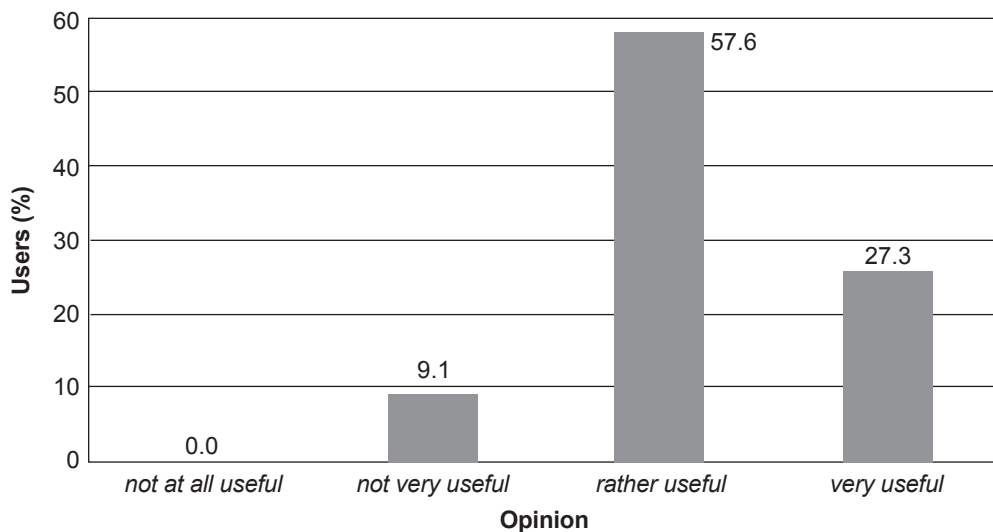
**2.2. Evaluation Results**

The tests of the prototype of the ICT tool generated helpful implications with regard to the phrasing of questions in the profile and the summing up questions in some sections under headings so as to facilitate orientation and decrease the number of questions. So far, the prototype was tested with individual users at the Institute for Work and Health (24 persons) and with participants of seminars organized at the German Social Accident Insurance in Dresden (9 persons). Due to the low share of persons, the sample is not representative of the envisaged user structure of the DG. However, the test results give first useful hints as to how to design the full version of the DG.

Most users found the ICT tool *very useful* or *rather useful*. No respondent selected *not at all useful* (Figure 3).

The persons who tested the tool were not looking for a new occupation. They were asked if the suggested new occupations would have matched their expectations if they had been looking for a new job. The percentage of persons who were *very* or *rather satisfied* and of those who were *not at all* or *rather not satisfied* with the suggested new occupations was about even (Figure 4). It can be assumed that the satisfaction would be higher in a real job search context and with more occupations in the database matching the users' formal qualifications. Some users explained their low satisfaction with the lack of academic professions in the database.

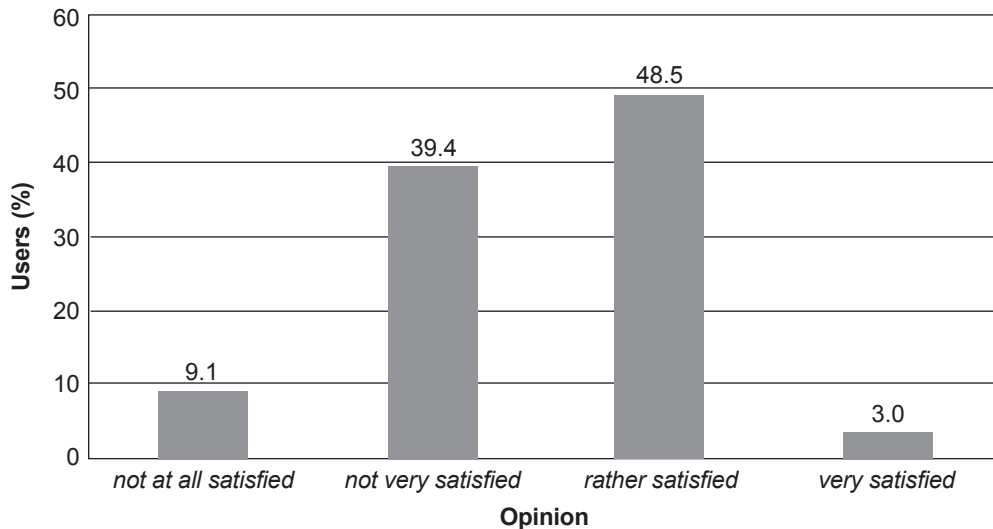
Forty percent of users were in favour of retaining the current foci in selecting new occupations. Currently, the selection follows the criteria of a "good match" with regard to skills and preferences and the criteria of a "bad match" with regard to workload and health. That means occupations are ranked first if they either have the characteristics the user desires (e.g., no shift work) and if the matching between the supply and demand of skills is best, or if the new job is free from burdens that strained the user in previous jobs.



**Figure 3. Opinion on the information and communication technology (ICT) tool (n = 33).**

<sup>5</sup> Occupational groups will facilitate the search for new occupations insofar as the user can conduct a search among occupations grouped according to a common denominator, e.g., branch or field of work.

<sup>6</sup> Data on demand from <http://berufenet.arbeitsagentur.de>.



**Figure 4. Opinion on suggested occupations (%).**

Some suggestions will be integrated in a new questionnaire. Moreover, the users' suggestions regarding usability will be considered when the full version of the DG is designed. Among others, the number of drop-down menus will be reduced in favour of check boxes, and the results of the search will be more user friendly.

### 2.3. Possible Applications and Target Groups

Information on job alternatives and necessary retraining will be directed at the individual user. The envisaged user works in jobs with "task-contingent age limits" or has already become unemployed or incapacitated for work because of the workload, is willing to learn and undergo retraining and is keen enough to experiment with new jobs. Moreover, the user of the DG is computer- and Internet-literate. As most career shifters do not learn a new occupation but rather return to their trained occupation [26], the DG should also support the reacquisition and updating of skills necessary to practise it. The target group of individual users of the DG comprises ~900 000 older unemployed persons [27] and ~3–4.5 million older workers. The latter number was arrived at by applying survey data on self-assessed work ability to the population of workers aged 45–64 years [28]. In a 2010 survey, 15%–27% of workers answered that they would change the occupation if possible and 29%–52% believed *hardly* or *not at all* that they would be able to practice their occupation until the age of 65 [29].

SMEs, the other target group of the DG, employ 60% of workers in Germany [30]. Large firms in Germany often have departments which deal with employees with incapacity for work and, therefore, do not need assistance in the form of an externally-administered database. Moreover, horizontal careers can hardly be implemented in small firms and in certain branches (e.g., construction) [22]. However, firm owners and supervisors in SMEs often have direct contact with employees and can assess who might be in danger of not reaching retirement on the job. Such firms could use the DG as a source of information on the supply of skilled workers in the region and on the effects of demographic change at firm level, e.g., in the form of a tool for an age-structure analysis. Firms which support the subsequent acquisition of vocational qualification by their workers could use the DG to assess skills and preferences. However, SMEs will have to devise a solution for cases when the DG recommends the employee to retrain and take on a job in a different vocation which is not available in the given firm. A possible solution is to join forces in networks, which exchange workers and jointly offer new services, either on long- or short-term basis [31].

### 3. DISCUSSION

The DG will help workers to retain work ability until retirement. Various factors which have an impact on self-assessed work ability until



retirement can be targeted with the instrument to find jobs with lower workload. Out of impact factors identified in the DGB index “Good work” [32], the following can be seen as modifiable by finding a new occupation: physically heavy work, time pressure, unilateral physical work load, loud ambient noise levels, having to hide feelings, and lacking regard for own needs in working time schedules. If those factors are combined with unfavourable organizational factors, e.g., lacking training opportunities or inadequate pay (which cannot be addressed by our instrument), the self-assessed work ability decreases accordingly.

The DG will also support the preservation of human capital investments generated in the last phase of working life. That will happen, firstly, due to the opportunity to enter personal skills, abilities and expertise in the personal profile and to indicate which of those skills the user would like to apply in his or her new occupation. The questions in the profile will be provided with a glossary so that the user understands them correctly. To minimize technical problems with using the ICT tool, it will be designed according to accessibility standards and will be tested in terms of usability before roll-out. Secondly, the output provided by the DG will contain information what kind of training—with regard to form, duration and field—the user should attend to qualify for the new occupation. That will counter the firm-level qualification impasse with regard to older age groups found in Germany, especially in SMEs and in sectors with a high share of small companies, e.g., construction, transport, hotels and restaurants, and trade [30]. To preserve the productivity and employability of older workers, continuous vocational training and opportunities for on-the-job learning are indispensable. However, older workers experience often overt specialization, narrowing their original qualification to a small expert field, and de-qualification by not being included in innovation processes [33].

Another benefit of the DG will be the facilitation of political processes. It will help workers to remain in employment until the age of 67 years, which will become the new standard retirement age after the phasing in by 2031. The qualification result (see section 2.1) will form an informa-

tion basis for the legislator on demand for continuous vocational qualification in SMEs. That could be used for adapting or expanding the current range of qualification grants.

The career change should lead to increased job satisfaction and self-assessed work ability. The worker should be able to use his or her (old or new) skills and the new occupation should match his or her preferences. However, analysis of panel data reveals that after a change of job, only 42% of workers consider the nature of work and only 28% the working conditions in the new job as better, workers over 49 years old to a much lower percentage than younger workers [25]. For only one third of persons who have changed the job, that move has improved promotion opportunities, earnings, security of employment or has reduced the workload [34]. There are also indications that persons approaching retirement who have worked in low-paid jobs before, enter low-qualified services, which is a “career change” associated with de-qualification [35].

Those data show that the DG will need some framing conditions to be effective and to avoid precarious working conditions. The awareness of firms, especially of SMEs, for lateral entries of older workers has to be raised, so that also persons with little or no experience in the new field of work will be accepted as new recruits. The set-up of job pools and networks between craft enterprises could be encouraged to help them to retain workforce if not in the own firm, then in the region. And individual workers should become aware of their coresponsibility for preserving work ability, be open to learning new tasks and to be open for a new start.

In line with its statutory obligation to assure the prevention of occupational accidents, occupational diseases and work-related health hazards by all suitable means, the German Social Accident Insurance will first exhaust all options which enable workers to remain at their original workplaces. Thus, it will guide employers on how to adapt workplaces in line with ergonomics standards and how to decrease physical and mental workload. However, the adaptation of workplaces is not a cure-all. Horizontal career changes can be seen as one of last steps of prevention, setting in

before the worker becomes incapacitated for work and has to undergo rehabilitation [12]. Therefore, personnel development in firms using the DG should support life-phase-oriented (rather than age-cohort-oriented) career planning.

Currently, the DG is designed to inform about and facilitate a change of occupation and not merely of tasks. It will focus on workers and unemployed in nonacademic vocations. It will support career changes at the same level of hierarchy and qualification. However, it could be extended to cover other areas. For example, as administrative and survey data show that unskilled workers run a high risk of not reaching retirement age in employment, the focus could extend to training programmes leading to a higher qualification level and facilitating promotion to higher, less burdening positions.

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