Empowering Corporate Ageing Management by Interconnecting Existing Data: A Case Study from the German Automotive Industry

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Abstract

In the context of demographic changes in Germany the question of how to maintain corporate competitiveness and employees' work ability becomes important. The case study in the automotive industry shows that in various corporate spheres of activity there are good initiatives but a strategic approach which interconnects existing processes in terms of a comprehensive ageing management is missing. Relevant corporate experts were therefore looking for support. The so-called FIT-model devised during the survey helps to make the issue in corporations more comprehensible. Five additional products were developed to support the organisation of performance indicators; to raise management's awareness of the issue; to communicate principles of ageing-appropriate work design; to reach the employees with the programmes of workplace health promotion and to improve the cooperation between companies and social insurance agencies. Initial feedback to the largely industry-independent results is positive.

Keywords

Work ability • Competitiveness • Demographic changes • Age management • Ageing management

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1 Introduction

Demographic changes in industry necessitate a shift from short-term thinking and a youth-centred work and personnel policy to an ageing-oriented policy centred on a mature workforce as research published some 10 years ago pointed out [e.g. 2, 8]. The researchers described some pioneering work but were sceptical if and when this trend would be included in corporate strategic planning.

One industry that has been considering demographic change for a number of years is the German automotive industry. The workforce in the factories is roughly 45 years of age. Of the workers 5.5 % are regarded as disabled, the highest rate of all industries. For these reasons automotive companies have been considering measures to enable the workforce to age without health impairments, but despite some good initiatives to date no comprehensive process has been designed. Ageing management[1] that merges data across activity areas while also considering the employees' work history is needed.

Thus the goal of the project "Ageing healthily and well-qualified in the automotive industry. Participation and inclusion right from the beginning" (Gesund und qualifiziert älter werden in der Automobilindustrie. Partizipation und Inklusion von Anfang an – PINA) was to analyse the status quo and initiate the development of a process of systemic ageing management which might improve the interaction between divisions. The research was conducted as part of the Initiative New Quality of Work of the German Federal Ministry of Labour and Social Affairs by the Institute of Ergonomics and Human Factors of the Technische Universität Darmstadt and the Unit of Labour and Vocational Rehabilitation of the University of Cologne. The following corporations participated actively: Audi, Daimler, Evobus, Ford, Opel, Porsche, Volkswagen and Bosch, from the automotive parts industry. The project was supported by the human resources directors of these corporations as well as by the Association of Disability Councils of the German Automotive Industry.

Individual programmes were of interest but since management is important the interconnection between planning and evaluation was the main focus of the survey. A further focus was the area of internal communication as well as the interface between industry and agencies of prevention and rehabilitation (such as medical insurance companies, accident insurance companies and government and private pension schemes). To ensure that the data would be manageable, only those corporate spheres of activity relevant to the survey were consulted, viz. workplace health promotion; workplace (re)integration; job organisation; workplace design; working time; personnel and career development; further training and education. Transfer of knowledge was in the initial phase of interest; management, in the sense of team leadership, become part in the course of the investigation. Little time was spent on matters such as recruiting, remuneration or company pension schemes.

[1] In this article the term Ageing Management is used consistently.

The project surveyed a single industry only, thus the companies were comparable and important similarities became evident. But almost more significant is the fact that noticeable differences were found. Only this totality of findings made it possible to develop the measures presented here to strengthen ageing management in industry.

2 Approach

The project was loosely structured and filled with content as it progressed. On the basis of an enquiry into the status quo, themes emerged that were analysed in conjunction with the corporations. At the same time social security agencies were consulted.

For the survey into ageing management a qualitative approach was taken. As a first step (cf. Fig. 1) a partly standardised questionnaire was sent to all participating companies to gather data about employment structures, company agreements, projects to date and the people involved. From March to May 2012 interviews were conducted with experts in the relevant divisions in the companies about their activities. In addition to questions regarding work processes the focus in the approximately 60 interviews was on communication with other areas as well as on future plans and needs. The interviews were based on questionnaires which were specially designed for, and specific to, the spheres of activity. Depending on the company the discussions were also attended by representatives from the works council and/or the disabled employees' council. Furthermore, in most companies senior managers were available to discuss the corporation's overall strategy. The agenda for the discussions and the selection of interviewees were left to the project co-ordinators within the companies.

The companies' statements were augmented and compared with documentary material (internal company agreements, work manuals, flyers), then subjected to an initial accretion and compared with other statements to discover similarities,

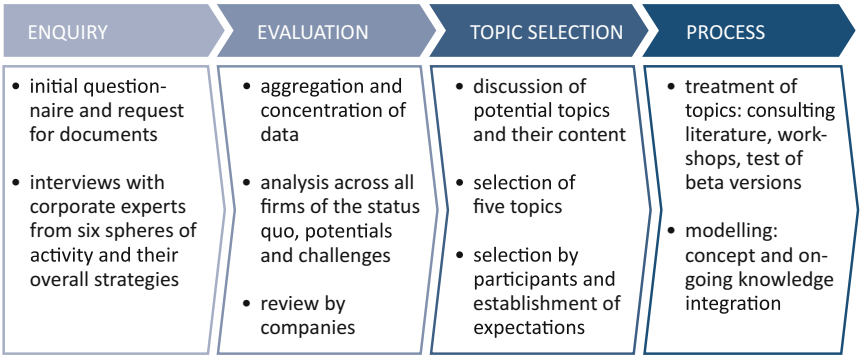

Fig. 1 Developing the project

differences, trends and challenges. The results were thematically integrated and presented to the companies to ensure accuracy. The final report, accompanied by suitable examples, was presented to the participants in November 2012.

The evaluation was three-dimensional: sphere of activity (all participating companies); the individual firms (across all spheres of activity) and an overall summary. The initial evaluation was done along the criteria of the questionnaires; in the course of the study further criteria, resulting from the analysis of the data, were added. Workplace health promotion, for example, was analysed on the basis of frequency, target groups and target group definition, as well as on ease of entry, budgets, people involved and performance indicators. In the area of workplace (re-) integration the framework (company agreements, areas of responsibility, triggers, people involved) was analysed. Also of interest was entry into the programme, the interconnections across divisions and again the performance indicators. Workplace design, to give another example, was evaluated on the basis of evaluation tools and the frequency and regularity of their application. In addition, aspects relating to ageing management (consideration of employees' abilities or adaptation of working conditions to accommodate ageing) were surveyed. The evaluation across all spheres of activity concentrated on the breadth of the measures, how stringently they were applied and how systematically they were interconnected. Comparing such measures across all participating companies led to innovative solutions and highlighted the potential for improvement. The differences due to size, product, production and corporate structure were taken into account.

The participants' reviews showed that this type of comparison, the case studies and real-life experiences, were infinitely valuable. As a result the format of the process was changed. Instead of strengthening ageing management by in-depth survey in each of four participating companies all eight companies were invited to participate in a study across four (later five) themes of ageing management. The topics, selected by all participants, were investigated by experts from three to six companies. The experts' participation was voluntary and depended on the topic's relevance to their expertise. The process comprised a number of steps. Initial workshops concentrated on needs and contents, followed by workshops to explore successful programmes and to review initial presentations. The comprehensibility and usefulness of beta versions of the products, generally manuals, were tested in participating companies. At the same time a comprehensive model was developed to reinforce the topic of ageing management and simplify its dissemination.

The findings of the above process and the resultant list of topics is described in Sect. 3, the outcome of the project in Sect. 4.

3 Findings

Despite the differences in corporate structure and size the results of the qualitative investigation were comparable and confirmed the initial assumptions. While all companies have good processes in place not one has an ageing management programme, as described in Sect. 1. Many of the processes are well structured but

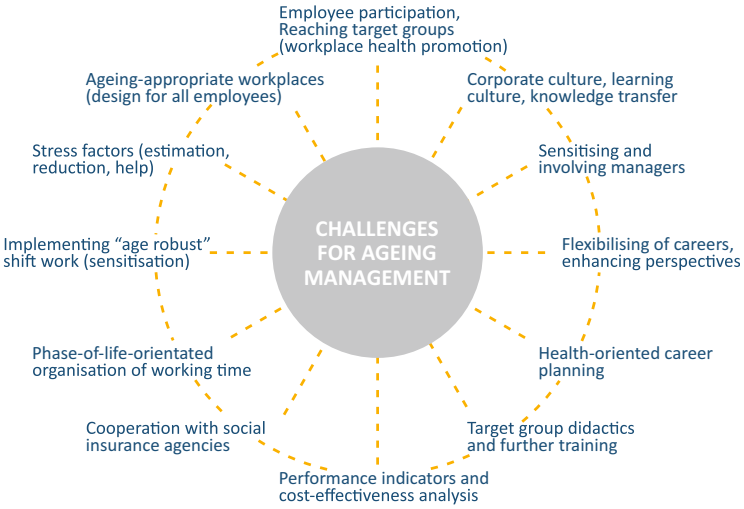

Fig. 2 Challenges evident from the project development

they aren't connected across divisions. The proposals and goals of the programmes are often similar, though they differ on details and the degree of implementation. Furthermore, different emphases and strengths were evident between the companies due partly to company culture, partly to the implementers. However, similar problems and challenges could be found across all spheres of activity. Figure 2 gives an overview of the initial results. They will be looked at in depth in the following pages which will also explain the choice of the topics that were analysed during the further survey.

3.1 The Findings in the Spheres of Activity

The major challenge companies face in the field of workplace health promotion is how to reach the workforce. This generally leads to a broadening of the target groups and a lower entry into the programmes [20]. In addition to programmes aimed specifically at production workers there is a trend towards offering medical check-ups to all employees. At the time of the investigation two companies already had such programmes in place; others are planning to introduce them even if the organisational aspects differ (in-house-examinations vs. external, intensive examinations in central rooms vs. a check-up in doctors' rooms close to the factory). Further programmes need work in defining the target groups, others in implementing performance evaluation.

Introducing workplace (re)integration is often problematic because of friction between external and internal interfaces. The companies have well-planned programmes in place, the details of which obviously differ. However, external conditions, especially with regard to social security agencies, often make it difficult

to (re)integrate personnel. Internally, lack of cooperation between divisions sometimes makes the work challenging, e.g. transferring a person from one division to another. Therefore, the managers of these programmes see one of their major jobs as raising their colleagues' awareness of the problems. Examples of functioning networking across divisions can be found in the field of integration management, which was examined in this context. Additionally, integration teams often develop forward-looking programmes for workplace design and health promotion. However, in order to implement them, management often has to be brought on board, something the teams try to achieve through performance and economic indicators.

Awareness and systematisation are also important issues for work design. In production, all participating companies use evaluation tools for (physical) work load but they differ in the frequency and quality of implementation. Some companies have programmes in place that consistently consider ergonomics in early phases of job planning, but information about workers' (dis)abilities and prognoses about their development is seldom utilised. This leads to a reduction in suitable work places as workers' abilities become impaired. For example, very few companies consider a change from a standing to a sitting job when designing a new production line. For office jobs central planning is largely confined to the office and desk, job organisation is left to the teams involved. The experts in the companies felt that the programmes could be improved if workplace assessment and data evaluation were applied more systematically, in addition to alerting (operating) managers to the value of the programmes. A valid question is what a workplace that is ageing-appropriate would look like. This is a field where the companies feel that research is needed as is the area of mental stress, how to recognise and reduce it.

In the area of working time there are many challenges such as communicating the working hours to target groups or their consistent implementation (that might touch on legal issues). Especially introducing ageing-appropriate shifts is difficult since not only management but also the workforce often has to be convinced that it is a good thing. Instead of a three-shift model most companies prefer a voluntary extended night shift. However, this model does not always have a time limit and in only one company does it have an age limit (discretionary). Short-term work-time accounts are common although different models are used. Long-term work-time accounts that would enable the introduction of age-appropriate working hours are rarely in place because of problems with accruals and tariff agreements; workers seldom make use of such programmes.

Personnel development is highly systematised in the firms, which all contain a variety of programmes. Nevertheless, expanding development perspectives is still a challenge [3]. Normally the annual employee appraisal is used to initiate on-the-job or advanced training; two companies are considering introducing this kind of appraisal and the chance for training throughout the year. All of the participating companies offer their managers, skilled workers and foremen the opportunity for further education, only two have on-the-job training that allows employees to progress from worker to manager. In the area of succession planning there are major differences. Flexibility in jobs is partly only offered intra-departmentally, a

flexible career path is still not really possible. Health-oriented career planning is to date only reactively granted in terms of workplace (re)integration.

Advanced training throws up the question of how to ensure that necessary skills are acquired and how to strengthen the learning culture. To achieve this all companies continually expand their curricula, both technical and non-technical, though there are differences with regard to access and teaching format. In addition, there is a movement towards target group training (for certain jobs or areas). In one of the companies this leads to creating job clusters and defining requirement specifications for them. Yet, it is not clear, whether all employees can be reached in this way and how a more target group-specific didactics could be installed. Little can be said about the sphere of activity of knowledge transfer since very few companies have a manager for the process nor do they have explicit programmes in place. Answers regarding training indicate that experts in the companies would be used as trainers and also that programmes such as mentoring/shadowing and succession planning are in place. Other processes in the field of knowledge transfer could not be identified.

Despite the marked differences shown up by the survey, there are some striking similarities. Bringing (top and operational) management on board is a recurring concern across all areas of the survey, including that of a learning culture. Another topic of concern in all companies is how to reach employees in the fields of e.g. health promotion, working time or training. Very often the existing programmes and processes have not been thought through systematically. In some areas, e.g. job design, the problems can only be solved with the help of executives. No strategies on how to raise their awareness have yet been found.

3.2 Interconnection across Spheres of Activity

Analysing the degree of interdepartmental connectedness brought to light some fascinating results. It showed that to date networking was basically due to individuals (bilaterally or in work groups), not policy. Only a few instances of connecting programmes across departments were found, viz. stress-related measures in the workplace health programmes and/or taking into consideration disabled workers when planning a new production line. It is true that demographic change is being discussed in the industry but mainly by a few engaged individuals in departments of human resources, corporate health services or (re)integration and ergonomics managers. If resources are needed for operational reasons, e.g. to ensure that a production line is built in a particular plant, these "demographers" lose support [9]. Demographics-oriented projects which demand the interconnection of individuals can be found in different firms (either as stand-alone projects or as part of an overall strategy); but it has proven difficult to turn such networks into a permanent feature.

Consequently, although there are a number of good initiatives in the field of demographic change they are often stand-alone programmes. Except for some short-term projects there is no systemic attempt to build interconnections across

departments nor are processes being developed to achieve this. Also for this, the support of management is regarded as crucial but seen as a challenge for which no strategic concept is to date discernible.

3.3 Thematic Focus

What was said above is reflected in the list of topics: identify key performance indicators and profitability, raise managers' awareness of the issues and secure their leadership in projects, describe the principles of ageing-appropriate work design, communicate the topic to the workforce and promote employee participation, improve cooperation with social service agencies. The fact that these topics are regarded as urgent may well be due to the project coordinators who come from departments of human resources or programmes for workplace health promotion and additionally often act as head of a demographic project. Even so the list shows that they look for support and programmes to communicate the topicality of the subject to their audience.

On all these topics data are available in the companies, meaning such programmes could be developed internally. However, due to the pressures of the day-to-day business little time can be devoted to such projects. The survey gave these people the opportunity to meet and profit from the experience of their peers in other firms. Existing programmes were conflated and from the resultant product manuals were developed which can help people in ageing management in their day-to-day work and thus strengthen their effectiveness. Concurrently it was thought necessary to develop a model into which individual steps can be fitted in order to enhance the systematisation and thus the awareness of the programme. The results of this work are described in Sect. 4.

4 Results

The section starts off briefly describing the background and contents of this model, followed by a review of further products. The centrepiece of these products is the so-called performance indicators matrix, which deals with key indicators in the areas of strategic and ageing management. To this end the spheres of activity covered by the investigation were reviewed from a different perspective. The matrix warrants its own sub-section; the other products are covered cursorily in the rest of the section.

4.1 The FIT Model

German, which divides the internationally used term "Age Management" into Altersmanagement (age management) and Alternsmanagement (ageing management) contains different definitions of the latter (cf. the list in [4]). Common to the

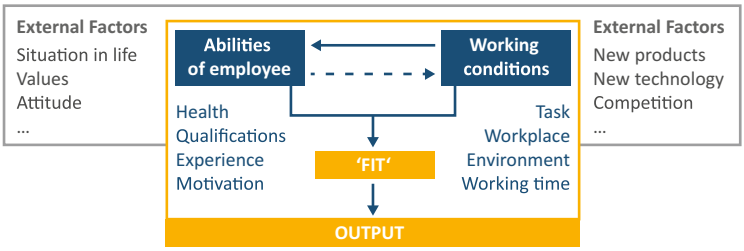

Fig. 3 The FIT model

definitions is the emphasis on maintaining the work ability of the employees over the course of their working life and on the measures taken to achieve this. Other authors use health management as a synonym for this complex [e.g. 18]. The major drawback of these approaches is that the connection to the company's goals tends to get lost. In manufacturing firms that define themselves through their products and production technology this easily reduces ageing management to a function of health promotion or human resources management that has dutifully to be performed. But ageing management does much more. It contributes to retaining the firm's or the factory's competitive edge globally (and also locally in the scramble for corporate funds) despite an ageing workforce. Maintaining the work ability of the employees is simply one aspect. To clarify this connection, the FIT model (cf. Fig. 3) was developed over the course of the project.

What may at first blush look like a profile comparison as used in (re)integration is in fact a general way of looking at a larger area of operations or a collective, ideally the whole of the workforce. The model raises the awareness of comprehensive connections and risks and thus makes managers more goal-oriented. It contrasts characteristics, strengths, skills and needs of the labour force, bundled under the term Abilities of employee, with the Working conditions and indicates that these two fields continuously have to be adjusted in order to achieve a good fit and thus an improved output for the firm.

Working conditions can either enhance or hamper labour's skills; on the other hand labour's needs can influence working conditions. In the model this is symbolised by the small arrows between the two sides. Additionally, both sides are subject to external factors. One's situation in life affects the working framework; values and attitudes influence what is expected of the job and the job situation. Customer demands, technology and the competition are decisive factors on the part of corporate leadership for job design. The plant's location as influenced by infrastructure or supply of skilled workers, etc. can play a further role.

The spheres of activity fit the model. Spheres of activity like health promotion or on-the-job-training originate with the work force, job design with management. (Re)integration functions directly in the FIT, even if mainly on the level of the individual. Leadership depends on context as regards either working conditions, the promotion of employees or the FIT. Comparing the two sides (abilities of employees and working conditions) dependencies become clear that can be used

for forecasts which in turn may orient actions in the spheres of activity. Neither side has the upper hand; on the contrary continuous adjustment is needed, even without explicit reasons. Whereas other models show output as a direct result of skills and working conditions [e.g. 6] this continuous adjustment is what "makes it fit". Output in this meaning is not a variable but part of doing a job. This will become clearer when looking at the key indicators (Sect. 4.2).

The process as described is built on data and decisions that cross divisional lines; interconnections are crucial. Ageing management is thus not a matter for one department only, it needs collaboration by different experts from various hierarchical levels [12, 9]. Only in this way can systems be developed that indicate where the two sides diverge, in order to work on them. The executive has to create an environment that fosters transparency, to introduce change when needed and to resolve potential conflicts. Junior and middle managers regularly have to review the situation in their areas of responsibility, review the need for action and, with input from experts, resolve the issues. The planning, executing and evaluation of the details fall in the purview of the managers in the spheres of activity. The works council and the disabled workers' representative are important disseminators.

The contents of the FIT model are not new. Obviously, all companies have managers who work in this manner. What is new is pointing out the interdependencies and to demonstrate that ageing management is a common objective, part of the company's goals. The FIT model is helpful in explaining these connections to all parties involved. The performance indicator matrix, described below, supports this approach.

4.2 The Performance Indicator Matrix

Key indicators are of utmost importance for management intervention in this complex field where vastly disparate business areas interact. However, because of the immense variety of factors that for example influence the health or motivation of the workforce, it is not possible to posit a linear cause and effect. Therefore, using a single indicator only, e.g. the absenteeism rate, is not meaningful; it is necessary to use a combination of indicators [cf. 22].

Appropriate sets of indicators are required on three levels: on the level of the operational divisions, the level of departmental management and on a comprehensive strategic level. The companies already collect data on all three of these levels. However, whenever certain programmes have to be strengthened because of demographics, companies start thinking about what additional data might be useful and what the competition does in this regard. This also became very clear in the course of the survey. To be of help in this situation and to be able to offer a catalogue raisonné against which firms can check their key indicators and expand their list if needed, a number of sources were evaluated. Data from the survey were discussed with experts from the participating companies, followed by a questionnaire which inter alia supplied information about how the figures are incorporated in the reporting system and used in day-to-day management. Since the result still

did not suffice to present a systematic structure, the initial data were re-analysed and augmented by more information from the companies and from relevant literature. It became evident that the literature contains extensive sections on how to implement processes in the different spheres of activity, but very little on key indicators in these fields. The works consulted covered mainly the areas of human resources, health and ageing management; a bibliography is shown in Türk [21].

Most indicators were found in literature dealing with workplace health promotion [cf. 2] and on-the-job training; however, they are mainly confined to a description of the programmes. More extensive analyses, e.g. work area or age, as suggested by Langhoff [17] for ageing management, are little used. Books on corporate (re)integration programmes contain many ideas for introducing such projects, but few performance indicators (the exception being again Langhoff [17]). Performance indicators also are rare in the areas of personnel and career development; the same applies to job design. Literature dealing with leadership in a time of demographic change covers the topic health(y) management with very few criteria (for the executive) to ensure quality. Virtually no book discusses more than one sphere of activity at one time. Balanced score cards offer an interconnected approach [cf. 14] but their focus is different. Uhle and Treier [22] describe a holistic approach which deals at length with health monitoring and makes the case for performance indicators that connect hard data with the results from questionnaires, as well as so-called early and late indicators. But they, too, do not provide real-life indicators. On offer are aids for the monitoring of health management that correlate data from questionnaires on health with other company key indicators [10]. However, they look at only a few of the performance indicators important for ageing management and, because they are closed systems, cannot easily be combined with other ratios. Referring to the extended definition of health of the WHO, viz. health is not the absence of illness, but a state of physical, mental and social well-being [1], well-being is also looked at as a competitive factor; concrete numbers are not to be found.

For this reason a system of performance indicators for the various spheres of activity, useful for strategic management and business reporting, was developed. A first overview of the so-called performance indicator matrix and the underlying idea is contained in Fig. 4. The two sides of the FIT model here are characteristics that could largely be reduced to numbers. Their juxtaposition can point up a variety of qualitative and quantitative risks. One example would be if a high number of workers reach pensionable age, making it difficult to hire replacements. Demands posed by the job and workers' health may diverge sharply as may working hours or skills levels. This could result in underutilised potential, lack of skills or understaffing that may influence the quality of task fulfilment. Ageing management's goal is to recognise such risks and to take timeous counter-measures. The so-called FIT indicators provide a quick overview. When these indicators are given numerical goals they can furthermore be utilised as a framework for measures to be taken in the spheres of activity, increasing the fit and thus decreasing potential risks. The measures can be assessed by making use of the level or quality of the

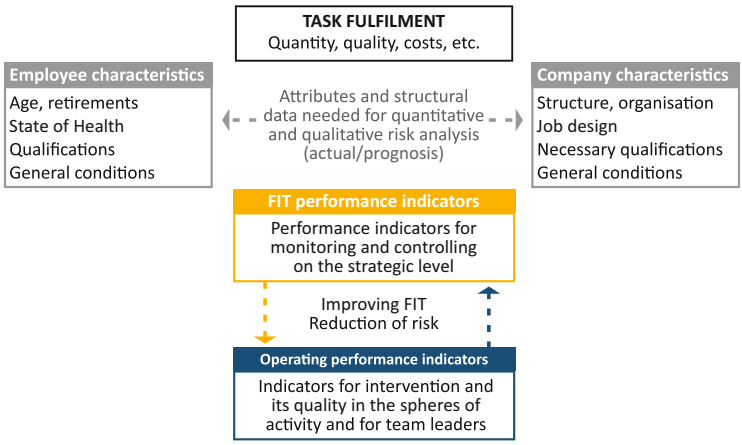

Fig. 4 Performance indicators for ageing management

action, shown in the overview as operating performance indicators. Examining more than one of the spheres of activity may show up a conflict of interests. In addition, it is useful to measure the level of task fulfilment as an overarching indication of quality as well as goals that may influence ageing management (e.g. productivity or costs) and to look for possible correlations with the other ratios. The definition of "task fulfilment" varies from firm to firm and product to product but will essentially be categorised under the headings quantity, quality, cost and other criteria.

The matrix of indicators largely covers the spheres of activity that were at the heart of the survey, with two exceptions. Working time, though part of the survey, was ignored since only a very limited number of performance indicators was discovered when analysing initial responses. Conversely (team) leadership, that was not part of the initial survey because of its decentralised organisation, has been included as it plays a crucial role in ageing management.

4.2.1 Operative Indicators

All eight companies already collect data in the various spheres of activity, if only for statistical purposes such as the workforce (e.g. its age structure); job demands and conditions (e.g. workplace assessments); rates of absenteeism and job satisfaction as initial indicators for the fit. In addition, in the spheres of activity data such as costs or utilisation of training courses are collected. However, collecting and analysing the data are not always sufficiently systematised. Number of courses offered, participation in them and similar data are collected but not interconnected. The numbers are furthermore rarely collated with other data. For example attendance of courses is seldom analysed from the point of view of age, operating department or length of service or skills. As an aid in getting such a process going for every sphere of activity, a list of possible indicators and their combinations was compiled and structured along the lines of initial input, measures,

quality of measures, budget/costs and overarching goals [cf. 22]. However, for purposes of aggregated reporting (e.g. to human resource or factory management or for a report to a task force) the level of detail necessary for planning and evaluating such measures would be too comprehensive. For this reason an additional list was compiled which shows the data that can be used for condensed reporting. The topics were selected in conjunction with the companies participating in the survey.

4.2.2 FIT Indicators

In particular two FIT performance indicators are regularly used in industry, viz. absence rates as calculated from reports on sick leave and job satisfaction as measured by employee assessments. On their own these indicators are not really conclusive. Attendance at the work bench may be a first indicator, but it does not indicate anything about the actual state of health of the workforce, nor is it a meaningful measurement of the fit between workers' skills and work conditions. A survey of job satisfaction can provide additional information; however, the answers are snapshots of conditions at the time of the survey. Therefore in the course of the project a search for performance indicators that would augment these numbers was launched. A precondition was that the indicators should apply to both the workforce and management. To ensure that everything was taken into account the goals and the concomitant performance indicators of both sides were surveyed in depth. The process is shown in Fig. 5.

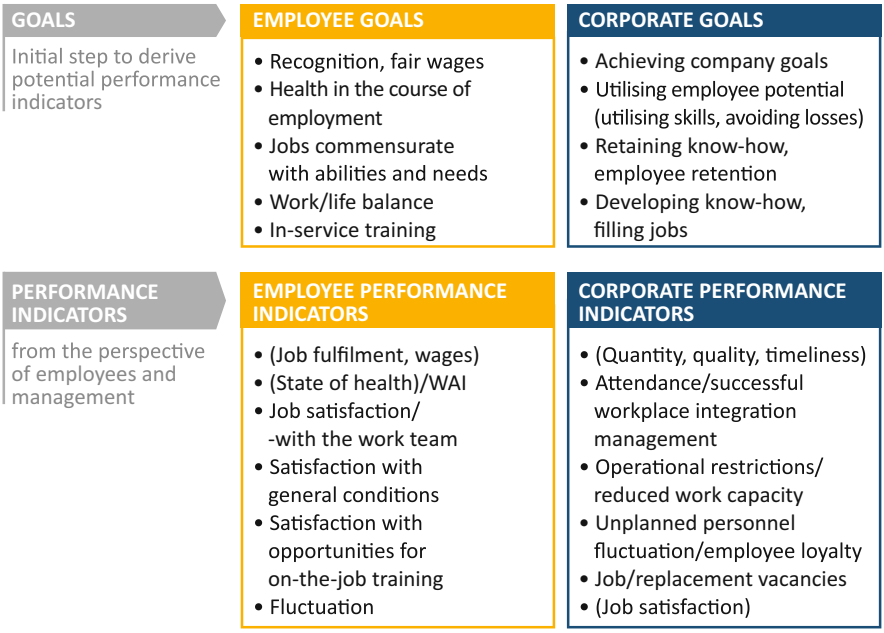

Fig. 5 Goals and potential performance indicators: employees and management

It was soon clear that though the needs were formulated from different perspectives and independently of the order in which they were listed (the importance and order of the workers' goals depend on phase of life, social environment and other factors) they can be seen as being intertwined. For example, the workers' wish (even if subconsciously) for work that measures up to their abilities, i.e. work that does not permanently demand too much or too little from them, can be seen as meshing with management's goal of utilising workers' potential to the utmost. This means avoiding outages or situations in which the workforce is unable to use its full potential. The Work Ability Index (WAI) [15] or an equivalent measure of self-assessment on the part of the workers, and the "reduced work capacity" supplies a set of indicators for a situation that occurs when job demands and the workers' abilities do not mesh.

A total of seven FIT indicators were identified: job attendance; long-term illness (in other words job disablement resulting in more than 6 weeks off work); a WAI (or similar index) score; reduced work capacity (expressed in work years or financially); the percentage of vacancies; the overall score of job satisfaction; unplanned fluctuation in the workforce. When combined these numbers give a good initial impression of a potential divergence. Further indicators, such as the average period of employment as an indication of loyalty or pensionable age were not considered since they are dependent on the age structure within a corporation and therefore difficult to use for goal-setting. It is, however, recommended to use the numbers to aid in the analysis of the FIT indicators. To get a value for "well-being" as mentioned earlier, a combination of FIT scores (e.g. job attendance, the WAI score and job satisfaction) can be utilised.

The usefulness of the performance indicator matrix as a basis for and assistance in structuring indicators for an individual company was proven in the course of the project.

4.3 Additional Components

Looking at the performance indicators it is evident that they implicitly are linked to other topics. Important criteria in the areas of health promotion and job training are target group(s) and successful communication with them; (team) leadership regarding ageing management requires data; successful (re)integration is the decisive criterion for (re)integration management, etc. However, a hierarchy can be seen in the topics (cf. Fig. 6).

The organisation of performance indicators underlies analysis and management, while managers who are passionate about the process are potent multipliers. Basics of ageing-appropriate job design are useful in raising awareness while at the same time addressing one sphere of activity. The same applies to the other two components. Employee participation was looked at during the survey of corporate health promotion, and cooperation with external agencies when looking at (re) integration management. These can be expanded with additional components. The basic approach of the project, used for the performance indicator matrix, namely to

Fig. 6 Components for an improved ageing management

collect extant research, re-analyse and expand it, was also used to develop the other products that emerged from the project, e.g. a manual to raise the awareness and active participation of managers; guidelines for workplace design that is fair to ageing staff members; a check-list for improving programmes of workplace health promotion and guidelines to improve the cooperation between industry and social insurance agencies. The manual for managers is discussed in some detail while the other products are summarised. The products are addressed to the same groups as the indicator matrix, viz. internal and external managers in the spheres of activity as well as executives in charge of internal projects.

4.3.1 Manual for Managers

Team leaders play a crucial role in ageing management, not only as far as task control and team management are concerned, but also in influencing conditions in the workplace. They organise job assignments, are important movers in the area of staff and career development and may influence the participation of their staff in on-the-job training and workplace health promotion. Managers are role models, multipliers, sponsors, and organisers of the job structure and of inter-personal relationships, roles that they partially have to be taught. However, when thinking about leadership in the context of ageing management (or similar projects) the knee-jerk reaction is simply to provide information regarding demographic change [17].

That more is needed became clear when factors which were used successfully to raise the awareness of managers about ageing management were identified. One process in particular was striking, because it benefitted a number of components, viz. self-reflection, considering the team's (dis)abilities and discussions with work-force and experts. From this and other examples, factors that lead to the desired outcome were identified with the aid of experts from the fields of executive development, training, health management and human resources, as well as from books [e.g. 11]. The result is organised in an intervention model (Fig. 7) leading in three steps to increased appreciation of the problems and participation by managers.

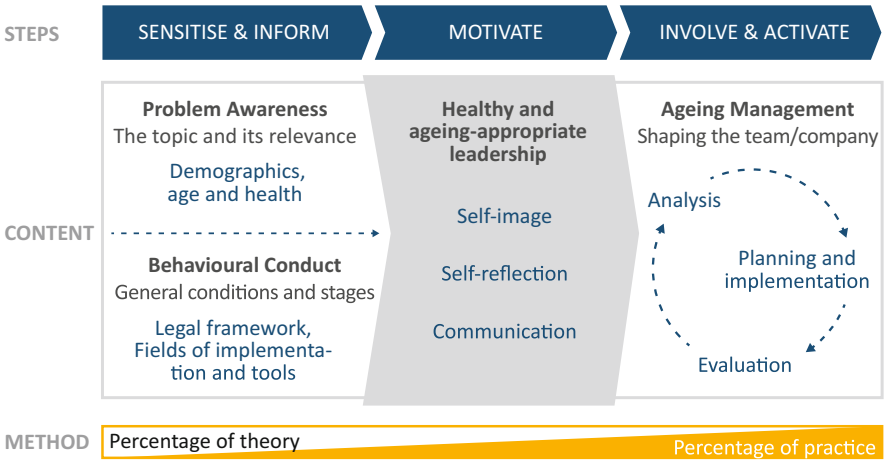

Fig. 7 Intervention model to sensitise/activate managers to ageing management

The first step (sensitise & inform) raises awareness and affects subsequent behaviour. The second step (motivate) aims at creating good team leadership through self-reflection and understanding one's role as leader. Both of these steps are often taught in management seminars and courses. However, of equal importance is a process that supports managers in playing an active role in ageing management. For this reason a third step (involve and activate) aims at integrating ageing management in the team process; this only works if it is part of company regulations and if experts are involved to support it. The steps, especially raising awareness and motivation, are indications only as the areas cannot be separated clearly. It is, however, crucial that all the criteria are considered, ideally as part of a total concept. This intervention model and the individual criteria are described comprehensively in a manual which is backed up by learning aids.

4.3.2 Further Components

People involved in ageing-appropriate workplace design face a number of questions. The participants in the survey acknowledged that the literature contains hints to this complex but deals only with single aspects. A reference that covers all aspects simply and comprehensively is missed. As part of the project therefore an introductory guide was written which starts off making clear that ageing does not automatically lead to a reduction of skills but to their variety increasing [cf. 7]. For this reason it, unlike other manuals, differentiates between ageing-related and ageing-unrelated changes. The model developed in the project covers ageing-appropriate workplace design in general; measures for possible ageing-relevant changes and measures for general disability.

A problem often raised in connection with workplace health promotion is how to communicate successfully with the workforce. Health-related programmes are used mainly by people who are health conscious anyway [cf. 5]. Obviously the

individuals themselves decide which programmes they take up. However, the companies are responsible for the programmes and the conditions under which they are offered once it is clear which workers should be targeted and for what reason, something that is often neglected during planning. Therefore, with the aid of experts from three corporate health departments a check-list was compiled to address this topic. It starts by explaining how to define the problem and the concomitant target group(s) and moves on to describing which aspects of content and organisation have to borne in mind when designing such a measure. The check-list consists of two parts, a summary as a primary overview and secondly an expanded version with approximately forty items to consider.

If the physical limitations and disabilities of workers are so severe that corporate health departments alone cannot resolve them, corporations and the people concerned have to rely on outside agencies. Because of the framework of the German social insurance system this cooperation is not always harmonious. Different competencies, a variety of agencies and contact points for prevention and rehabilitation often complicate participation in a rehabilitation programme [13]. Many institutional participants try to smooth the process in their area of responsibility but this does not really improve the relationship between the corporate world and social agencies [19]. One approach is that the agencies and the corporation agree on a set of guidelines to be followed by both parties. This has been tried but was not often successful because the guidelines were not extensive enough. Therefore, a manual developed with the aid of experts from two corporations details what has to defined when considering such cooperation; an exemplary flowchart shows how cooperation could function in case of a rehabilitation measure from the moment a need is diagnosed until the aftercare has been organised.

5 Discussion and Outlook

The project was carried out in the automotive industry, innovator of processes but also known for complex and variegated products. Technology, vehicle design and variety of models are all subject to rapid changes, processes often product-driven. Ageing management in such an environment is not simple, let alone reconsidering existing strategies and programmes. However, in view of demographic change such measures are vital. To raise the awareness of this problem people who to date work in this field need support. The areas investigated in this project are the major components of such a process. The FIT model, performance indicators and raising awareness among managers help to elevate the profile of the issue in corporations and to gain more support for effective ageing management, leading to more interconnection of existing processes. The other products concentrate on aspects of primary health care as well as workplace (re)integration. Common to all approaches is the desire to structure and to systematise processes more even than has already been achieved in the corporations. The various components and programmes do not claim to offer turn-key solutions, as the corporations are too

different; instead they highlight approaches that may help to solve problems. They offer suggestions which are useful in improving existing programmes and procedures and resolve questions regarding the strengthening of ageing management. What they make of the suggestions is up to the corporations themselves. Starting such an internal discussion a network will be automatically formed. This became clear during the work on the present project, which led to many useful discussions across divisions and company lines. The project was carried out in a particular industry, its results [cf. 16], however, are largely industry-independent. This has already been proven with non-automotive corporations. The project results have aroused great interest in industry generally and feedback has been very positive, even though to date no (authoritative) reports about its usefulness in real life have been received.

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