

Knowledge and the ageing employee: a research agenda

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Abstract:

Our ageing population is the result of two demographic trends: decreasing fertility levels and higher life expectancy. As a corollary to these demographic trends, the working population is ageing and shrinking at the same time. This development will affect the performance of organizations in the next decades. As today's economy and the performance of organizations is mainly based on knowledge, the ageing workforce will mainly affect the organizations ability to be knowledge productive.

As current knowledge management (KM) and intellectual capital (IC) literature hardly addresses the issue of ageing, the aim of this paper is to explore this topic in order to formulate an agenda for further KM/IC research.

Combining the temporary consequences of ageing (brain drain and talent gap) and the false assumptions about the capabilities of older workers (older workers contribute negatively to a firm's performance), the current ageing of the working population reveals two main risks for organizations and management: underutilization of older employees, and loss of knowledge. Based on the exploration of these two risks in this paper, several issues are proposed for further research. These issues focus on the specific competences of the older knowledge worker, the implications for talent development programs, the benefits of inter-generational learning, and effectiveness of knowledge retention strategies.

Today, the main fear is that large scale retirement will lead to a shortage of skills, talents, knowledge. Although acknowledging the risks and threats of this brain drain, the current temporary ageing of our workforce might also contribute to a structural better valuation of the potential of the older knowledge worker and its specific contribution to the process of knowledge creation. In an ageing knowledge economy, increased understanding about the abilities and distinct qualities of older workers will provide opportunities for organizations to enhance knowledge productivity and thus gain competitiveness.

Keywords:

Ageing, ageing working population, ageing employee, older workers, knowledge productivity, knowledge management

'People in their late 50s, 60s and 70s have now become the largest under-utilized pool of human resources in the economy'
(Business Week)

Introduction

Populations all over the world are ageing. The ageing population is mainly the result of two demographic trends: decreasing fertility levels and higher life expectancy. These demographic trends have social and economic consequences. A related development of the ageing population is that the share of older people within the working population (>15 years) grows. Moreover, the increase of the share of older persons in the working population is now accelerating, as the post-war baby-boom generation (1946-1965) approaches retirement (OECD, Eurostat). To illustrate this acceleration, between 2000 and 2006 the number of 55-65 years old in the Dutch working population increased with more than 400.000, while the number of 25-35 years old decreased with 370.000 (CBS). This change in the ratio between older and younger employees has consequences for organizations and management.

The main consequence for organizations and management is that the labor force is ageing and shrinking at the same time (DeLong, 2004). This ageing and shrinking work force will affect the performance of organizations in the next decades. As today's economy and the performance of organizations is mainly based on knowledge (Drucker, 1993; Nonaka & Takeuchi, 1995), the ageing workforce will mainly affect the organizations ability to be knowledge productive (Stam, 2007). However, despite the certainty of the demographic trend of ageing, management does not (yet) consider the coming brain drain to be a significant issue (Brandel, 2008; Drucker, 2001). Managers do not seem to have a sense of urgency that they need to anticipate and act on this development (Slagter, 2007).

The starting point of this paper is that ageing will mainly affect the organizations ability to be knowledge productive. This issue has hardly been addressed in knowledge management (KM) or intellectual capital (IC) literature. In the top 20 KM/IC academic journals (Serenko & Bontis, 2009) I only found six articles that explicitly addressed the issue of ageing. "The practical implications for management of a rapidly aging workforce and a shrinking pool of highly skilled younger workers has not been fully explored" (Streb, Voelpel, & Leibold, 2008). Therefore, the aim of this paper is to explore the issues related to ageing of the workforce from a knowledge management perspective, in order to formulate an agenda for further research.

In this paper I will first focus on the consequences of ageing from an economic perspective. Next I will elaborate on (the assumptions about) the potential contribution of older workers to the process of knowledge creation. Then I will elaborate on ageing from a KM perspective. Finally I formulate a series of questions for further research.

Structural and temporary economic consequences of ageing

As we have seen above, ageing refers to at least two different demographic trends. First, the *structural* trend that people live longer. Second, the *temporary* increase of the number of elderly people as a result of past fluctuations in the fertility rate.

The main economic consequences of ageing seem to be of a structural nature. It is expected that the next decades the number of elderly people will rise significantly relative to the number of working age (dependency rate). By 2050, there will be only two people of working age (15-64) to support one person of 65 or more in the OECD area. These trends are evident in all OECD countries, however some countries (like Italy and Germany) are afflicted more than others. A considerable decline of the share of people at work will probably result in a decline of GDP per capita, implying a loss of welfare. For instance, in January 2007 The Netherlands counted 10 million people of working age (20-65). It is expected that

this number will decline to 9 million in 2040 (CBS). Worldwide productivity and growth are predicted to decrease as workforces decline (Joe & Yoong, 2006). A related threat to economic growth and welfare is that age-related expenditures (e.g. to support pension systems and health care systems) could rise considerably, because increased financial pressures on pension systems may force governments to increase taxes on labour, which will further lower GDP per capita, implying a further loss of welfare (Cotis, 2005; Ewijk, De Gier, Henkens, Hielkema, Van Imhoff, & Van Wissen, 2003).

The main temporary economic consequence of ageing seems to be a loss of productivity as a consequence of a loss of capabilities related to the large scale retirement of the baby-boomers combined with a shortage of younger workers to fill the void (Kaye & Cohen, 2008). This temporary consequence of ageing is often referred to as *brain drain* or *talent gap* (Arnone, 2006). Whereas brain drain mainly refers to the large scale retirements of the baby boomers, talent gap mainly refers to the shortage of younger workers that follows the large scale retirements. As these issues refer to the organization's ability to make knowledge productive, this paper focuses on these two issues.

Assumptions about older workers' contribution to (knowledge) productivity

From an organizational perspective, the main problem seems to be that organizations do not know how to make sense of the potential of the older employee. Based on prejudices, myths and presumptions organizations have lost sight of the capabilities of older workers. According to the majority of managers, ageing will predominantly have negative consequences (Ebrahimi, Saives, & Holford, 2008; Remery, Henkens, Schippers, Van Doorne-Huiskes, & Ekamper, 2001): costs will increase, willingness to change will decrease, absenteeism will increase and productivity will decrease. In today's workplace, older workers are often considered inflexible and uncreative and thus less capable of doing their jobs than their younger counterparts. (Coy, 2005). "Such illusions perpetuate because of misconceptions about the abilities of older workers, such as beliefs that midlifers are slower with technology, less interested in their work, unwilling to learn or change, fearful, accident-prone, less efficient, less capable, and just 'counting days' until retirement" (Kaye et al., 2008, p.32). Many people assume that the natural process of deterioration of the human brain results in limited intellectual capacity of older workers. According to an Economist Special Report about the ageing workforce, it is often assumed that older employees are less motivated, take more sick leave and cost more (Turning boomers into boomerangs, 2006). According to Ebrahimi (2008), "The majority of employers question their productivity, as well as their capacity to adapt and learn"(p.125). Although more and more evidence shows that these assumptions are false (Engelenburg, 2008; Inma & Drury, 2007; Kaye et al., 2008; Koopman-Boyden & MacDonald, 2003; Slagter, 2007; Turning boomers into boomerangs, 2006), the problem of the faulty logic is that it can become a self-fulfilling prophecy because what follows is disengagement, disappointment, disgruntled workers, low staff morale, leading to decreased productivity (Kaye et al., 2008; Slagter, 2007). Furthermore, these prejudices also lead to age discrimination, which restrains organizations from hiring or retaining older people (Kaye et al., 2008). According to the Society for Human Resource Management, 59% of its members do not actively recruit older workers, and 65% of its members don't do anything special to retain them (Coy, 2005).

A persistent assumption in the workplace is that older employees are less productive. However, based on an analysis of the relationship between age and productivity, Groot et al. (2004) conclude that a negative age effect is compensated by a positive experience effect. On balance, older employees are more productive than their younger counterparts. Based on the same analysis it is also concluded that there is a positive relationship between (corporate) education of the older employee and productivity. Based on this relationship, educating the older worker becomes increasingly relevant (Kaye et al., 2008). However, as a consequence of the assumption that older employees are less productive, managers also assume that training older workers yields a poor return-on-investment (Kaye et al., 2008) and therefore mainly

focus on the further development of their young potentials. "Age negatively affects the variables that lead towards participation in training and development" (Streb et al., 2008). Similar conclusions can be found in (Dorhout, Maassen van den Brink, & Groot, 2002). According to Inma and Drury (2007) "this negative view of ageing workers stems largely from an earlier era when the standard of healthcare and the quality of life of populations were still poor and when life expectancies were relatively moderate" (p.3). These assumptions seriously threaten the organizations ability to make knowledge productive.

The next decades, the organization's ability to make knowledge productive will become more and more dependent on the capabilities of older employees (Coy, 2005; DeLong, 2004; Kaye et al., 2008).

Therefore, next to the temporary consequences of the brain drain and talent gap, this paper will also focus on the potential of older workers.

The risks of ageing from a KM perspective

When we combine the temporary consequences of ageing and the false assumptions about the capabilities of older workers, the current demographic developments result in two main risks for organizations and management: underutilization of older employees, and loss of knowledge. Strack et al. (2008) refer to these two types of risk as 'productivity risk' and 'capacity risk'. The consequence of both risks is deterioration of the organization's ability to make knowledge productive.

1. **Underutilization of older employees.** The first issue is related to the ageing of the working population. As we have seen above, the coming decades the average age of the working population will significantly rise. As we have also seen above, the current attitude towards older employees is mainly based on false (or at least questionable) assumptions with regard to their abilities. As a result "people in their late 50s, 60s and 70s have now become the largest under-utilized pool of human resources in the economy" (Coy, 2005, p.81). Ignoring the potential of older workers deprives the company of an important source of knowledge necessary for its continuous development and its competitive position (Ebrahimi et al., 2008). However, recognizing the full potential of older employees requires a fundamental reconsideration of the capabilities of older workers. Recognition and better utilization of this potential might lead to a relative advantage to those organizations that do not recognize this hidden potential.
2. **Loss of knowledge.** The second issue is related to the looming retirement wave and the decline in the supply of labour. Together these two trends result in a loss of knowledge. "Lost knowledge means the decreased capacity for effective action or decision making in a specific organizational context" (DeLong, 2004, p.21). The coming years, large numbers of our most experienced workers are going to retire. At the same time, it will be increasingly difficult to compensate this loss of knowledge because of a sharp decline in the supply of labour. "As older employees retire over the next several years, potential replacements will be increasingly difficult to find and hire out of this smaller pool of talent" (Casher & Lesser, 2004, p.2). "As employees get older and retire, businesses can face significant losses of critical knowledge and skills, as well as decreased productivity" (Strack et al., 2008, p.120). Together these two developments will lead to a 'talent gap' or a 'brain drain' (Arnone, 2006) which threatens the organization's ability to make knowledge productive (Slagter, 2007) and thus threatens competitiveness (Turning boomers into boomerangs, 2006).

Both underutilization of older employees and loss of knowledge will affect the organization's ability to make knowledge productive. Some even argue that the key to competitive advantage in the near future is in the issue of the ageing workforce (Coy, 2005; DeLong, 2004; Ebrahimi et al., 2008; Kaye et al., 2008; Strack et al., 2008). "Actively addressing demographic risk to retain the skills and know-how needed to ensure future viability can give companies a competitive advantage over rivals" (Strack et al., 2008,

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p.128). In order to better understand these risks from a KM perspective, the next sections further elaborate on these two issues.

Underutilization of older employees

As we have seen above, the perception about older employees is to a large extent based on false assumptions about the effects of ageing. However, this does not imply that ageing does not affect the effectiveness of older workers. In general, older employees have more experience. Therefore, it can be argued that older employees are more valuable to a company than their younger counterparts (Kanfer & Ackerman, 2004). At least, as long as more experience means that they are better capable of making knowledge productive.

In the literature we find many references to specific knowledge capabilities related to older workers. According to Ebrahimi et al. (2008), ageing workers play an important role in the knowledge household of an organization. "Their life experience, their in-depth knowledge of different professional environments (network of contacts, who knows what?), and their knowledge of the culture of these environments (collection of codes, symbols, shared significance, etc., permitting to know how to deal with who?) bestows them differentiated aptitudes to understand issues, interpret information, connect various information and data, integrate knowledge, and finally, connect and coordinate knowledge carriers" (p.129). Older workers distinguish themselves by having practical intelligence or "the ability to solve ill-defined business problems using rules of thumb that can't be put down on paper" (Coy, 2005, p.79). Older employees are also referred to as 'flexible and open to change', 'interested in learning new tasks' (Slagter, 2007), committed to quality, possessing strong work ethics and functioning as a corporate memory (Inma et al., 2007), possessing well-developed communication skills, a sense of loyalty, creative and responding well in a crisis (Joe et al., 2006), attracted to teaching (Ebrahimi et al., 2008). Based on these qualifications, older workers seem to possess valuable knowledge, skills and attitudes, which are necessary to make knowledge productive.

According to an article in Business Week (Coy, 2005, p.79), the innovation profile of older employees differs from the innovation profile of their younger colleagues. Whereas older employees are predominantly experimental (incremental: new ideas build on a lifetime of observation, trial and error), their younger counterparts are predominantly conceptual (radical: a bolt from the blue). The Economist (Turning boomers into boomerangs, 2006) adds to this "at what point does an ageing mind become a liability and not an asset? The answer depends on what that mind is asked to do. If the task requires a wealth of knowledge and experience, then the elders have it. If the job needs sharp and fast thinking, youth triumphs" (p.53). This implies that the effectiveness of older employees is situational and requires awareness about the specific knowledge competences of older workers and the different situations in which these competences are needed. "A systematic review of current HR-policies and processes will reveal adjustments you can make in a variety of areas to turn age-related risks into competitive opportunities. The key is to tailor these measures to each job (...), keeping in mind that the experience that comes with age may increase productivity in certain jobs" (Strack et al., 2008, p.127). A similar conclusion is drawn by Arnone (2006), when he concludes that "employers need to assess the attributes of certain older workers that translate into unique contributions to their enterprise, and that complement, rather than compete with what younger workers offer" (p.10).

Another aspect that is related to the underutilization of the potential of older workers is the aspect of inter-generational learning (Gendron, 2007; Inma et al., 2007). In this sense, Ebrahimi et al. (2008) refer to the potential of an inter-generational dynamic. "The younger workers are for their part translators of up-to-date scientific and technical knowledge that awakens the curiosity and motivation towards new technological projects by ageing workers. The ageing workers are the translators of past situations and history of the registered information within the firm, and are also transmitters of tacit how-to's. Hence, as knowledge strategists, they participate in the acceleration and the efficiency of practices by their colleagues, and in the reduction in organizational errors" (p.135). This dynamic view of inter-generational

learning implies that combining the knowledge of older and younger employees might serve as a catalyst in making knowledge productive.

Productivity in the knowledge economy requires continuous learning (Van Dalen, Henkens, & Schippers, 2008). As learning is an individual activity, training young employees exclusively will not help to make the older more productive. In this sense, the concept of *talent development* gets a new meaning. Talent development in the ageing knowledge economy refers to the utilization of the specific capabilities of all employees, both young and old. In other words, learning becomes more important than age. This implies a fundamental reconsideration of (implicit) underlying assumptions of corporate career development policies. "The goal is to avoid any age limits, or similar age-related hurdles, and to offer training that is suitable for the targeted age group" (Streb et al., 2008, p.4).

A better understanding of the general age effects and the specific competences of older workers, in relation to the demands of knowledge intensive work, will help us to better value the potential of older employees. In addition, better understanding will help organizations to better position their older workers and make better use of their abilities. This will enhance knowledge productivity, strengthen the relative competitive position and eventually organizational performance. Better understanding will also help organizations to better align their career development programs to the specific needs of older workers. Organizations that recognize the (hidden) potential of older employees will have a competitive advantage to those who don't.

Loss of knowledge

This second issue refers to the possible consequences of the looming retirement wave and the decline in the supply of labour. Core of this reasoning is that the retirement of the baby boomers will result in a deterioration of the organizational ability to make knowledge productive. The knowledge that leaves the organization is not compensated, neither qualitatively (because younger employees are less experienced) nor quantitatively (because the new generation is considerably smaller).

Given the coming retirement of the baby-boom generation "companies have a looming problem of knowledge management, of making sure that the boomers do not leave before they have handed over their expertise along with the office keys and their e-mail address" (Turning boomers into boomerangs, 2006, p. 52). Organizations are facing a 'knowledge retention crisis' and corporate knowledge is 'at risk' (Casher et al., 2004). In this respect, knowledge management becomes risk management in the sense that it aims for reducing the risk of losing critical knowledge.

The ageing of the working population gives a new dimension to knowledge management (Kannan & Madden-Hallet, 2006) and knowledge retention is considered to be the main knowledge management challenge. "In managerial practice, the important issue in respect of knowledge management and learning is the retention and intergenerational transfer of important know-how and skills" (Streb et al., 2008, p.4). If knowledge is not transferred from the older to the younger generation, knowledge will disappear which can have disastrous consequences. "The costs can be tremendous when the impacts of lost knowledge are unanticipated" (DeLong, 2004, p.27). Therefore, we should try to reduce the risk of losing critical knowledge. "A well-planned and effective knowledge transfer between the different generations of the workforce is of great importance" (Slagter, 2007, p.82). One of the main challenges is to determine what critical knowledge the employee has and thus what knowledge should be retained (Joe et al., 2006). According to some sources, the ageing work force is mainly a leadership problem (Casher et al., 2004; Fisher, 2005; Michaelson & Rittenhouse, 2006; Schwartz, 2006) because the management and senior professionals are relatively old and will therefore lose relatively much knowledge. As most organizations do not have leadership succession plans (Schwartz, 2006) or sound processes to transfer leadership experience to the next generation (Michaelson et al., 2006), younger managers are going to find themselves thrown into positions that they are unprepared for (Fisher, 2005).

In the knowledge economy, more and more of the critical knowledge resides with the employee. "The knowledge of ageing workers is essentially tacit, embedded in their 'memory' and their knowledge of the professional environment and in their relational knowledge instituted in networks of contacts" (Ebrahimi et al., 2008, p.136). "More than ever, critical knowledge is about pattern recognition, social norms and relationships, which can be difficult to learn due to their tacit nature" (Casher et al., 2004). Tacit knowledge is per definition related to the carrier and thus difficult to transfer or retain. Recognizing the tacit dimension of critical knowledge makes knowledge retention difficult. The retention strategy of many organizations is to reduce their dependency towards older workers by capturing as much critical knowledge as possible. In other words, to make tacit (personal) knowledge explicit (codified) (Nonaka et al., 1995). As tacit knowledge is difficult to articulate by means of formal languages, it can be questioned whether this codification strategy (Hansen, Nohria, & Tierney, 1999) can be effective.

According to DeLong (2004), the loss of knowledge as a consequence of large scale retirements will be strengthened because the nature of knowledge has become more complex. "Knowledge-intensive work today is much more interdisciplinary, often requiring the integration of expertise across a wide range of subjects" (p.16). As knowledge has become more complex, it is also more difficult to transfer and replicate. Therefore, organizations might face a serious knowledge shortage which will threaten the organizations ability to make knowledge productive. In addition, as it is about critical expertise, "focusing on the threat of lost knowledge instead of staffing shortages provides a more accurate perspective on the real impact of turnover in the knowledge economy" (p.19).

Another suggested retention strategy is to delay retirement (DeLong, 2004; Joe et al., 2006) or at least keep older workers as long in business as possible. However, (as a consequence of past economic developments) many governments actively stimulate early retirement programs and early retirement is institutionalized in many businesses, in order to create opportunities for younger employees. As a consequence, particularly in Europe, people aged over 55 years are basically absent from the labour market which strengthens the effect of ageing, stimulates the loss of knowledge and thus contributes to the deterioration of the ability of organizations to make knowledge productive.

As demographic patterns differ per country, region, industry and company, the (potential) loss of knowledge also differs. Ageing will be more intense in countries like Germany, Italy and Japan (DeLong, 2004). According to Inma and Drury (2007), the demographic impact will be more intense in regional organizations (compared to organizations in urban areas). Distinction can also be made between different industries. Industries that are struck relatively hard by ageing are the government, oil and gas industry (Casher et al., 2004), aerospace and defence industry (Turning boomers into boomerangs, 2006), electric power industry (Ashworth, 2006), nuclear power industry (Chung, 2006; Chung & Kim, 2006; Rintala & Kuronen, 2006), and higher education (Koopman-Boyden et al., 2003). Finally, organizations within industries have different ageing patterns, and thus different risk profiles. According to DeLong (2004), companies most at risk are those with established traditional cultures where people have spent 20 years or more. Many of these companies have downsized and cut out the middle, so you now have these bifurcated organizations: old white guys nearing retirement, a lot of people in their 20s and 30s, and not enough people in between.

Conclusion/Research agenda

The working population is ageing and shrinking at the same time. This development will affect the performance of organizations in the next decades. As today's economy and the performance of organizations is mainly based on knowledge, the ageing workforce will mainly affect the organizations ability to be knowledge productive.

Combining the temporary consequences of ageing (brain drain and talent gap) and the false assumptions about the capabilities of older workers (older workers contribute negatively to a firm's performance), the

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current demographic development results in two main risks for organizations and management: underutilization of older employees, and loss of knowledge. Based on the exploration of these two risks in this paper, the following issues should be considered for further research:

1. What are the differences between the contributions of older and younger employees to the process of knowledge production? What are the specific competences of the older knowledge worker?
2. What are the implications of recognizing the specific competences of older workers for HR policies and career/talent development programs?
3. How can we benefit from the dynamics between generations in the process of knowledge creation (innovation) and how can we stimulate inter-generational learning?
4. How to stimulate knowledge transfer from older to younger employees? What are effective methods for retaining complex tacit knowledge?

In this paper I have tried to give an overview of the main issues related to the ageing of the workforce from a knowledge management perspective. Today, the main fear is that large scale retirement will lead to a shortage of skills, talents, knowledge. Although acknowledging the risks and threats of this brain drain, the current *temporary* ageing of our workforce might also contribute to a *structural* better valuation of the potential of the older knowledge worker and its specific contribution to the process of knowledge creation. In an ageing knowledge economy, increased understanding about the abilities and distinct qualities of older workers will provide opportunities for organizations to enhance knowledge productivity and thus gain competitiveness.

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