

## Chapter 8.13

# Knowledge Crash and Knowledge Management

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### ABSTRACT

Population ageing is a phenomenon that is quite new and irreversible in the history of mankind. Every country and every organisation is concerned while it is not certain that all the risks and challenges have been clearly identified. Clearly, there is a risk of massive knowledge loss, i.e., “Knowledge Crash”, due to massive retirements, but not exclusively for this reason. This risk is not evaluated at the right level, and in this regard, this article, by including the problem of “Knowledge Crash” in the more general framework of “Knowledge Management”, enlarges the concepts of knowledge, generation, and knowledge transfer. The author proposes a global approach, starting from a strategic analysis of a knowledge capital and ending in the implementation of socio-technical devices for inter-generational knowledge transfer.

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### INTRODUCTION

Inter-generational knowledge transfer is a recent problem which is closely linked to the massive number of retirements expected in the next few years. These retirements are caused by “population ageing,” which is the situation of societies where the ratio of elderly people is growing. This phenomenon has two characteristics that are not well-known, and hence not really integrated into the solutions currently being put forward (OECD, 1996; UNFPA, 2002):

- *The phenomenon is worldwide:* one often wrongly thinks that this phenomenon (often assimilated with the so-called “Baby Boom” phenomenon, which is just a particular case) is only occurring in developed countries with a low birth rate. But nearly every country in the world is concerned:

it is sufficient to have a growing average lifetime, or a decreasing birth rate to have a population ageing phenomenon.

- *The phenomenon has never occurred before:* this is the first time in the history of mankind that ageing is growing like this, and, according to the UN, the process seems to be irreversible.

This phenomenon is worrying a lot of international, national, regional and local social groups, regarding the social, economical, cultural, political consequences. It will certainly change many things for investments, consumers, job markets, pensions, taxes, health, families, real estate, emigration and immigration etc. (Harper, 2006; Kohlbacher, Güttel, & Haltmeyer, 2009).

A consequence of population ageing is, of course, ageing of the working population. Employment policies (especially for seniors) will greatly change. If nothing is done, the number of retired people will grow rapidly in the next ten years, and conversely the number of employed people will stay constant. According to the OECD's studies, this will pose a great threat to the prosperity and the competitiveness of countries.

Related to competitiveness, population ageing raises an unexpected problem. We now know that we have entered the "Knowledge Economy" where the main competitive advantage is an intangible asset in organisations (private or public), called "knowledge", the definition and the status of which is still being discussed (Foray, 2004). The massive retirement of a lot of employees is also accompanied by the loss of a lot of knowledge and know-how. The Knowledge Management discipline says that nearly 70% of useful knowledge in companies is tacit. That means that knowledge and know-how are compiled in the employees' brains and are very little elicited by using information bases, documents, databases. There is also a theoretical difficulty to elicit this kind of tacit knowledge. If this knowledge, which is not well known, is critical in order to carry out some

processes in the organisation, its loss must be considered as a major risk for this organisation. One must say that, nowadays, very few organisations in the world are considering this risk. Three levels of risk (and risk perceptions) are possible:

- Knowledge Gap, due to a re-acquisition of knowledge which is not sufficiently fast. This implies more cost for acquiring knowledge, loss of efficiency, delays in evolution etc. This is not perceived as a major risk
- Knowledge Loss, due to a partial loss of the organisational memory. This implies loss of production, quality decreasing, loss of market shares or clients ... This is perceived as a serious risk, and has been already experienced by a lot of companies (DeLong, 2004)
- Knowledge Crash, due to a loss (often sudden) of a strategic capability of the organisation. This is a major risk for the organisation

Very few organisations are considering those risks, and envisage a catastrophe scenario from Knowledge Gap to Knowledge Crash (Streb, Voelpel, & Leibold, 2008).

However, some sectors are very preoccupied. The nuclear domain worldwide has been especially concerned since 2002 (IAEA, 2006). It is in fact seriously exposed to knowledge loss, because it is "knowledge intensive" (i.e., based on complex and varied know-how), because it has experienced a "knowledge gap" due to the non-interest of the young generation and a long period of non-recruitment. Moreover, the safety and geo-strategic constraints, which are well known in this domain, add to the criticality of a "Knowledge Crash".

The public sector is also very concerned, as population ageing is growing faster than in other sectors (OECD, 2007). Regarding the number of public agents retiring in the next decade, main-

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