Chapter 18
The Influence of Ageing on User Experience

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ABSTRACT
The world population is ageing. At both the individual and collective levels, ageing causes several changes in people’s lives that influence their needs and the way in which they interact with products. This chapter aims first, to provide a literature review on different aspects of ageing in order to better understand how people will respond to products as they grow older. Second, it describes how the physical and cognitive decline of older users increases rather than decreases the need to focus on all aspects of their experience, including their physical, sensory, cognitive and affective responses. Having considered these issues, suggestions are made in order that designers might best focus their attention as they design for a population that is rapidly ageing, and where members of that population are encouraged to maintain full participation in society.

INTRODUCTION
The world population is ageing at an unprecedented rate. The number of people aged 60 years and above is growing considerably faster than the population as a whole, and is projected to reach nearly 2 billion in 2050 (United Nations, 2001). Of the world’s major areas, Europe is currently that with the highest proportion of older adults, and is expected to remain so for the next 40 years. However, with the exception of the United States of America, by 2050 the older population will be increasingly concentrated in the less developed countries, including China, India, Indonesia and Brazil. Irrespective of regional variations, the trend of population ageing is pervasive – a global phenomenon affecting every man, woman and child; it is profound – with major implications for all facets of human life; and it is enduring – as this trend is expected to continue through the
The rapid ageing of the world population has numerous implications for product development. At the biological level, ageing leads to gradual functional losses and behavioural adaptations that influence people’s interaction with products. At the collective level, ageing leads to changes in people’s social life and to shifts in the availability of financial resources. Such changes threaten older people’s social integration and independent life, but technology is one way of assuring their continued well-being. A mobile telephone, for example, is a device that can bring confidence, security and independence to older adults, as long as they are able to use the product and are motivated to do so. However, for many older people, mobile phones are simply experienced as frustrating and unattractive because this range of products is designed for the average, young, healthy user. If such products are to be successfully developed to truly meet the needs of this expanding market then it is essential to develop an appreciation of people’s capabilities and needs during different life stages.

In considering the relationship between population ageing and product development, this chapter seeks to improve understanding of how ageing influences user experience. The objectives of this chapter are first, to provide an overview of the ageing process. However, the intention here is not to give a comprehensive description of biological and sociological ageing, but to focus on those aspects of ageing that influence the user experience. The second objective of the chapter is to give a brief overview on how technology products have been developed in the last few decades, and how this also influences user experience and the adoption of technology. In particular, these issues are considered with respect to how people with different levels of capability may or may not approach, use and keep using such products. Having considered matters of ageing and user experience separately, the chapter closes by addressing the need to design for the ageing experience – i.e. design in ways that consider users in different life stages and circumstances.

AGEING

The ageing of the population is a result of a long-run decline in fertility, and a reduction in mortality at younger ages (Lee & Tuljapurkar, 1998). These factors, in turn, result from ongoing developments in medicine, infrastructure and education. However, whilst population ageing is a consequence of various social achievements, at the individual level, the ageing process involves not only elements of continued fulfilment, but also of progressive degeneration (Burton et al., 2005). Since the ageing process is complex and varied, researchers have focused on different aspects of ageing separately. For ease of understanding, in this chapter these aspects are clustered in five different groups – physical, sensory, cognitive, affective and social ageing. As we shall see later, when designing for the broader population, it is important to consider each of these aspects, how they may influence one another, and how they may affect people’s responses and well-being. Therefore, each group of aspects is discussed in turn below so that their implications for design might be better understood.

Physical Ageing

In biological terms, around a quarter to one third of what determines life span is genetic. Therefore, ageing takes place at different rates within a population depending on the individual’s genetic constitution. For example, as people reach extreme old age, the increase in mortality rate slows down. The most likely explanation for this is not that the ageing process itself decelerates, but that the
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