

# Designing Technology with and for Older People

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**The constant emphasis on users views in the design process means older people are consulted about their views, but this is often as a 'last resort'. The initial outlines and developments are sometimes considered without reference to the intended users and thus designs fail. This paper demonstrates two processes and methods deployed in the design of computer systems for assisting older people. The paper will contrast the two design methodologies and determine which elements are useful and appropriate and what design lessons can be learned. Both studies used qualitative approaches but the first undertook the software development prior to gaining certain user views through the use of interviews and questionnaires, whereas the second began with the users and proceeded to consult them throughout the design via a number of methods including 'cultural probes', observation, interviews, 'technology tours'. The paper concludes that the differences between the two methods and processes resulted in marked differences in the finished systems and their uptake.**

*User focused design, human technology interaction, field studies, Methods*

## 1. INTRODUCTION

The role that technology plays in everyday lives is increasingly becoming more complex. Of the various scenarios that could occur in the home, the all-encompassing 'technologised' home [1] is a strong possibility in which technology permeates the homes structure. The way that technology is used in the home and its relationship to the domestic spaces is modifying how people utilise these spaces.

Felicia Huppert [5] contends older people are a heterogeneous group who exhibit considerable variation in lifestyle such that chronological age is "becoming increasingly unreliable as a predictor of lifestyle" [5]. Traditional designs of assistive technology (AT) systems have tended to be undertaken by social care workers who initially define the problem and then pass the needs list to the AT 'expert' who is skilled in the design of the AT system. The latter designer tends to understand the hardware and software of systems from an engineering perspective, which is usually a result of their training, but they are not trained to understand the people for whom they are designing. Hence, the designs are all too often static, unresponsive and inappropriate to the real needs of the client. Sandhu [6] suggests that we should concentrate on what functionality is required and how to provide that functionality, to make designs more responsive. We would accept this premise and add our own tenet that designs should advance functionality as well as other dependability criteria such as those described in [2] and [7] as 'acceptability', 'trustworthiness', 'adaptability' and 'fitness for purpose' and formed the basis for the CATCH model [8].

This paper focuses on the relative successes of two projects which I had the privilege to work on related to technology and the home. The identities of the projects are not the important feature here and therefore will not be revealed. Both projects were concerned with similar issues and both had similar investigation techniques yet the relative success of each project and the ensuing technology developed were found to be of differing qualities.

## 2. THE BACKGROUND TO EACH PROJECT

The first project set out to design a piece of software, which could then be marketed to assist people in designing technology in the home for older people. The project lasted for three years and a number of different universities were involved in the process of research. The second project was concerned with the development of a tool for older people that was a result of substantive field research by the authors and a number of older people in their own homes. Both projects involved other universities and businesses as partners in the research and both projects

used qualitative methods but the results were qualitatively and qualitatively different. In both studies qualitative studies a number of observations and interviews formed the backbone of the research, although there were differences in the relationship of the personnel interviewed to the intended design specification. For example in the first study the main interviews and observations were carried out within a hospital environment, whereas the latter focused the interviews and observations on the homes of older people. Clearly the intended users of the finished tools were also different, the former study sort to make a tool for professionals to use in the field, whilst interviewing older people in their own homes and the latter designed systems specifically for the older people themselves to use. This distinction highlights that there is a possibility that the hospital work might have been better spent shadowing the professional group who might have used the tool, but it is unclear how relevant this actually would have been, as the research did interview some of the professional who would potentially use the tool. The latter study also used an adapted form of 'cultural probes' which were initially popularised by Gaver et al [4] but adapted specifically for this study to illuminate design specifications and encourage participants to be active participants in the research throughout its duration.

### 3. THE LESSONS LEARNED

Both projects successfully achieved their goal of designing systems to support older people. The former project's software was a basic alpha version with many limitations based on the basic philosophical problems inherent in the design, namely that it initially adhered to a medicalised model and then was modified (unsuccessfully) to a more socialised framework. The initial work undertaken within the medicalised model meant the software focused specifically on users as "patients" with medical conditions from which the software would make assumptions. The failure of this model is discussed in depth in [3]. The software was already initially designed when the author came on the team, the medically centred software architecture allowed for few major redesigns and therefore the modifications were undertaken within a number of constrictions. The latter project took design from a person centred perspective and formed the software based not on people's infirmities but on needs and desires and what the older people themselves considered important. Many older people were found to be profoundly impaired but their concerns and needs were often focused on mundane daily routines and operations which could sometimes translate into simple technological solutions. Other issues were of greater concern and these led to the design of the software system. Hence a considerable difference is the first project had a good idea which it tried to prove was a valid idea, this it successfully did, but the software was not taken up, whereas the later project entered with no preconceptions of what, if any, technological interventions would be suitable for the older people but found through the research that there was a need for a technological intervention which was then designed with the older people. There is little doubt in the mind of the author that the latter project has more sustainability than the former one and is more focused on the real world and the human condition in which technology can be usefully applied with people not on people.

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