
Remote Gaming: Adding Value to Retired Life

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Abstract

As design starts becoming more inclusive and more socially intuitive of its various users, it is extremely important to cater for the elderly which constitute of large proportion of the existing population. Old age is also a time for extreme depression for a large number of elders as our economies and societal attitudes tend to bend towards the youth and needs of the elders are neglected, their experience disregarded. Our paper explores the use of positive design in games to allow social engagement for the elderly with the use of electromagnets, smartphones and a tangible user interface (TUI) with our remote board game Play.

Author Keywords

Remote Gaming, Healthy Ageing, Tangible User Interfaces, User Experience, Design for Social Innovation, Non-Obtrusive design.

Introduction

As the longevity and quality of the human life increases, it becomes extremely important to move towards the concept of Healthy Ageing. Healthy Ageing is defined as the process of developing and maintaining the functional ability that enables well-being in older age. Functional ability comprises the health related attributes that enable people to be and to do what they have reason to value. It is made up of the intrinsic

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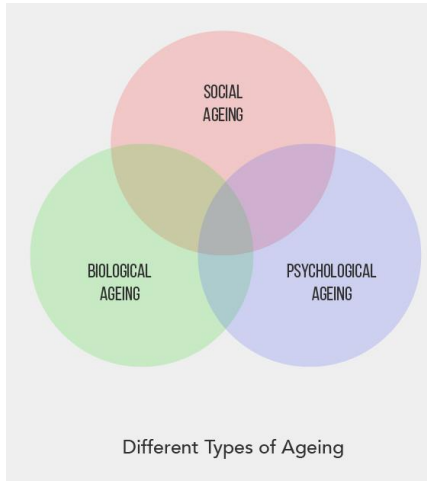


Fig1: Different types of ageing

capacity of the individual, relevant environmental characteristics and the interactions between the individual and these characteristics. [1]

Studies of human gerontology usually diversify into three main discourses:

1. Biological Ageing which pertains to physical changes occurring to the human body as a result of decline in cell replication as the human body for e.g.: reduced mobility, lack of strength and sleep;
2. Psychological Ageing which pertains to changes to senses, perception, and cognition as people age
3. Social ageing which pertains to how an individuals' relationships and roles change in relation to friends, family, and organizations. [2]

All of these aspects are concordant and tend to hinder in improvising the quality to life and social acceptability of the elderly. We particularly look at Social Ageing and find elders suffering with social isolation, identity crisis, a lack of routine after retirement (age>60).

Feelings of depression are often ubiquitous as they feel the society projects them as a liability rather than an asset, and incompetent when compared to the younger generation. But where the elders lack in physical strength, they compensate in years and years of experience which they are willing to share with people who are willing to listen. [1, 2]

The shift of lifestyle from career to retirement gives a lot of free time for the elderly, and they look for a continuous means of entertainment to keep them engaged. The elderly however have unable to get the hang of technology like the younger generations, as it interfaces has not been inclusive of the elderly and

most ICT research has been aimed towards, the young disabled. [3]

Methodology

In our aim to address a concern of social innovation aimed towards the elderly, we took an exploratory design research methodology. After addressing a wide variety of problems with ageing we particularly focused towards societal ageing and looked at what causes them societal isolation. We particularly look towards a middle income educated young old person, who are moderately aware on how to use basic functions of a smartphone.

We conducted interviews with six elderly people (age>60) and asked them to narrate their personal experiences and lifestyle changes before retirement, immediately after retirement, and after a period of five years after retirement. This was done with a purpose of looking at the problem from the user's point of view; the narratives often talked about how they were discarded by the society because they were considered incapable of doing their regular tasks due to perceived stereotypes by the society, and often complained of boredom and old age.

After listing the various insights, we sat for a brainstorming session (KJ brainstorming technique) and decided came up numerous ideas. After numerous ideas, our team collectively decided on digitizing a common activity with a tangible user interface (TUI) to allow the elders to accommodate easily.



Fig 2: The apparatus for the game Play

The Discussion

We decided to make a remote chess gaming device to assist the elderly in spending time with their loved ones and help reduce their social isolation. From Neil C. and Walter R.B's paper on Technology, Gaming and Social Networking [4], we realized that regardless the reduction in cognitive load among elders, they enjoyed games which gave them intellectual stimulation and allowed to use their experience in strategy. Chess also evokes nostalgia among the elderly, which enhances their experience. The game allows for gaming remotely and hence addressing issues of reduced mobility among the elderly. [1]

The entire apparatus consists of a board which consists of electromagnets beneath the surface, and pawns that will be used by the player. Our user sits on one side of the board and challenges their game partner via a mobile application. Once the opponent player accepts the friend request, both players place their phones on the dock of the phone and enable video conferencing. The board can detect the movement of the player on the board, and replicate on their opponents boards with the help of coordinates marked with electromagnets. Electromagnets help moving the pawns to the position with the help of algorithms on the app. The boards' surface is made of e-paper which doesn't get effected by magnets and allow for versatility to convert the

You decided to play a game of chess with your friend

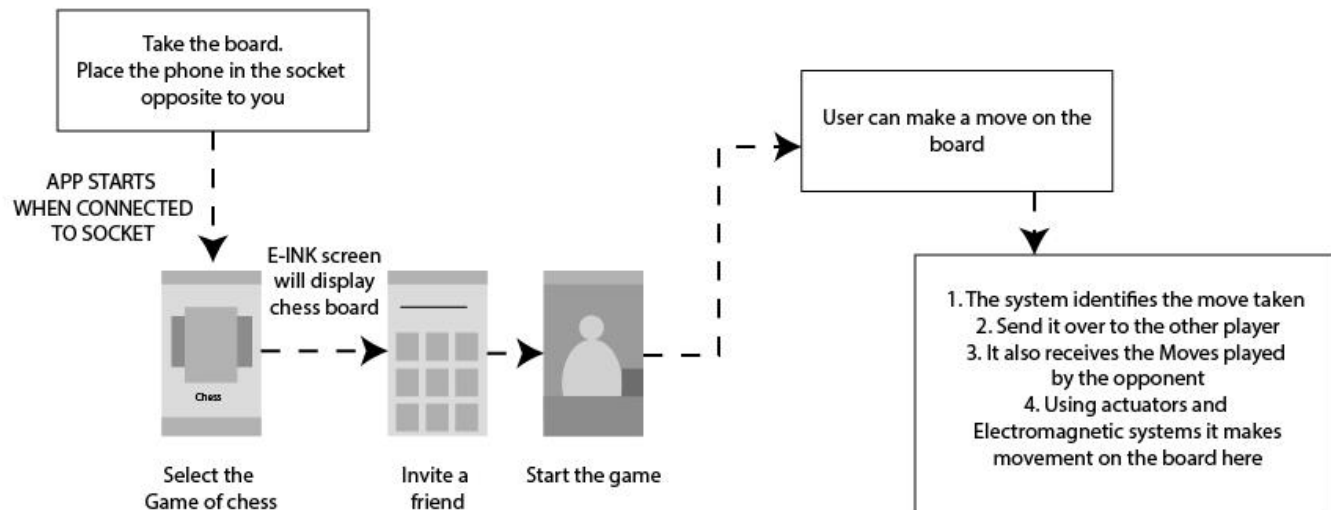


Fig 3: The flowchart on the working of the game.

apparatus into any other board game. The processing of the game is done completely inside the phone.

The Conclusion

The entire game Play, is an exploration into how tangible user interfaces can be converted to help the elderly become acquainted with the technology in a non-obtrusive intuitive manner, rather than thrusting it upon them. The video conferencing aspect of the game keeps the conversation alive, as players compete, enjoy and take digs at each other, and gauge each other's expressions. The entire experience can reduce social anxiety and isolation among the elderly. It can also enable formation of bonds as older people are distanced from their loved ones due to nuclear families. Grandparents can connect with their grandchildren and babysit them over the phone with engaging games. Old people could interact with like-minded friends in competitive games from the comfort of their homes. The entire concept allows versatility as it can be used for number of board games like Chess, Ludo, Snakes and Ladders, Monopoly etc.

With our project, we demonstrate how remote gaming design can be made more inclusive and allow the elderly to be a part of positive design approach rather than a design deficit approach. [5]

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